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Orijinal Araştırma

Nurses' Views on Physical Examination Use and Related Factors

Hemşirelerin Fiziksel Muayene Kullanımı ile İlgili Görüşleri ve İlişkili Faktörler

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ABSTRACT

Aim: This study aimed to determine the views of nurses regarding the use of physical examination methods and related factors affecting these views. Although nurses have long been expected to use physical examination methods in clinical practice, these techniques have not always been regularly used. Factors affecting the use of physical examination are nurses' negative views about physical examination and the institutional features they work in.

Methods: The study was conducted as descriptive study between July 2017 and February 2018 in adult clinical and intensive care units. The study sample comprised 606 nurses. Data were collected using the Nurses' Views of the Use of Physical Examination Questionnaire.

Results: The mean age of nurses was 35.05 ± 7.59 years. Of the nurses, 64.69% had a bachelor's degree, 82.51% had taken training on physical examination on undergraduation. The views of 88.1% of the nurses were that physical examination methods were an important tool providing information regarding the patient's clinical condition and assisting the early detection of deteriorating clinical conditions. Nurses' perspectives on physical examination methods were affected by their hospital setting, education level, and education on physical examination methods ($p<.05$).

Conclusion: According to the results, although nurses stated the necessity of using physical examination methods, it can be said that institutional policies affect the use in practice.

Key words: Health assessment, Nursing care, Physical examination, Physical examination methods

ÖZET

Amaç: Bu çalışmanın amacı hemşirelerin fiziksel muayene yöntemlerinin kullanımına ilişkin görüşleri ve bu görüşleri etkileyen faktörleri belirlemektir. Hemşirelerden klinik uygulamada fiziksel muayene yöntemlerini kullanmaları beklense de fiziksel muayenenin düzenli olarak kullanılmadığı bilinmektedir. Fiziksel muayene kullanımını etkileyen faktörler, hemşirelerin fiziksel muayene hakkındaki olumsuz görüşleri ve çalıştıkları kurum özellikleridir.

Yöntem: Çalışma, tanımlayıcı olarak Temmuz 2017- Şubat 2018 tarihleri arasında erişkin klinik ve yoğun bakım ünitelerinde yürütüldü. Araştırmanın örneklemini 606 hemşire oluşturdu. Veriler, Hemşirelerin Fiziksel Muayene Kullanımına İlişkin Görüşleri Anketi kullanılarak toplanmıştır.

Bulgular: Hemşirelerin yaş ortalaması 35.05 ± 7.59'dir. Hemşirelerin% 64.69'u lisans mezunudur, % 82.51'i fiziksel muayene yöntemleri ile ilgili lisans eğitiminde ders almıştır. Hemşirelerin %88.10'unun görüşleri, fiziksel muayene yöntemlerinin hastanın klinik durumuna ilişkin bilgi sağlamada ve kötüye giden klinik durumların erken farkedilmesinde önemli bir araç olduğu yönündedir. Hemşirelerin fiziksel muayene yöntemlerine ilişkin görüşleri çalıştığı hastane, eğitim düzeyi ve fiziksel muayene yöntemlerine ilişkin aldıkları eğitimden etkilenmektedir ($p <.05$).

Sonuç: Elde edilen sonuçlara göre hemşireler fiziksel muayene yöntemlerinin kullanılmasının gerekli olduğu görüşünde olsalar da kurumsal politikaların fiziksel muayenenin uygulamada kullanımını etkilediği ifade edilebilir.

Anahtar Kelimeler: Fiziksel muayene, Fiziksel muayene yöntemleri, Hemşirelik bakımı, Sağlığın değerlendirilmesi

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INTRODUCTION

Physical examination refers to the process by which objective data are collected on patients and the whole body is comprehensively assessed (Bayer, 2016; Olgun & Tosun, 2017). Physical examination methods are part of the stage of data collection, which is the main step of the nursing process(Birks, Cant, James, Chung, & Davis, 2013; A. Fennessey & Wittmann-Price, 2011). Nurses need physical examination data to identify patients' care needs and plan their care. The national and international literature has regulations and standards stipulating that nurses be informed of physical examination methods to assess patients' health conditions(British Columbia College of Nursing Professionals, 2018; Singapore Nursing Board, 2018; TR Official Newspaper, 2011).

Although the widespread use of physical examination methods in nursing began in the 1970s, nurses were observing and applying such methods as body temperature and blood pressure measurement and fetal heart sound auscultation in the second half of the nineteenth century(Holzemer, Barkauskas, & Ohlson, 1980; Sandelowski, 2000; Weber & Kelley, 2014). During World Wars I and II, nurses were expected to monitor the skin color of patients in septic shock, measure pulse and respiration rates, and with the opening of intensive care units, assess patients quickly and in a solution-oriented manner (D'Antonio, Fairman, & Whelan, 2013; Fuller & Schaller-Ayers, 2000; Holder, 2004). In the following years, they continued to use physical examination methods such as taking patients' health history and assessing them physically and psychosocially (Holzemer et al., 1980; Weber & Kelley, 2014). As nurses' roles expanded, the need for physical examination increased. The New Deal Initiative and Calman Report were influential in the development of these roles, introducing regulation of general practitioners and including traditional medical roles in nursing roles. The new Agenda for Change has stressed the importance of vocational training for nurses. These strategies have made it imperative that nurses use physical examination (Rushforth, Warner, Burge, & Glaspe, 1998; Wheeldon, 2005).

When the views of nurses on the use of physical examination methods have been examined, several limitations in physical examination practice have been identified, including nurses reporting certain barriers to performance of examination methods, variability in views based on department, and an overall lack of knowledge on these methods (Bauer, Fetherstonhaugh, & Winbolt, 2018; Khoran, Alhani, & Hajizadeh, 2018; Liyew, Dejen Tilahun, & Kassew, 2020; Rylance, Chapman, & Harrison, 2012; Schmitt, Maia, Almeida, & Adamy, 2015). For example, nurses working in the acute psychiatry clinic stated that physicians are active in this role, physical changes can be adequately detected through patient observation, the working environment is too intense to include examination, and nurses have inadequate knowledge regarding patient assessment (Rylance et al., 2012). However, the majority of critical care nurses viewed comprehensive physical examination of patients as necessary (Liyew et al., 2020). On the other hand, nurses have reported irregularities in working hours, insufficient staff, large patient volume, and lack of knowledge on physical examination as barriers to performing physical examination methods (Schmitt et al., 2015). Bauer et al. (2018) also revealed similar barriers. In a previous study the barriers most commonly reported by nurses were lack of time, inadequate assessment materials, and patients' health, cognitive, and cooperation status (Bauer et al., 2018). Nurses rejected physical examination as a responsibility, did not attach importance to it, maintained the belief that their role does not include examination, and used evaluation methods only in the event of a clinical change. Physicians' failure to consider nurse evaluation results is also seen as an obstacle to evaluation, and nurses often trust others and technology to gather reliable evaluation findings (Khoran et al., 2018).

In this context, nurses' use of physical examination methods is limited due to numerous institutional and individual factors(Chua & Liaw, 2016; Douglas et al., 2014; Fennessey, 2019; Hartigan, Murphy, Flynn, & Walshe, 2010; Hendrich, Chow, Skierczynski, & Lu, 2008; McElhinney, 2010; Rylance et al., 2012; Schmitt et al., 2015; Shi, He, Zhang, Morrow, & Zhao, 2020; Tan et al., 2021). The institutional factors include ward culture, unrecognition of nurses' use of physical examination methods by other disciplines, imbalance in patient–nurse ratio and working hours, lack of standard physical assessment documentation forms, lack of time, insufficient support and guidance, and burnout(Douglas et al., 2014; Fennessey, 2019; Schmitt et al., 2015; Shi et al., 2020). The individual factors include nurses' low perceived self-efficacy to use physical examination, difficulty in diagnosing the problems of a particular system accurately, low self-confidence in clinical measurements, lack of current information, and lack of training (McElhinney, 2010; Rylance et al., 2012; Schmitt et al., 2015; Shi et al., 2020). Other factors preventing nurses from using physical examination methods are that they may believe that these methods have little effect on patient care (Adib-Hajbaghery & Safa, 2013; Aydın & Dörtbudak, 2004; Osborne, Douglas, Reid, Jones, & Gardner, 2015).

In the literature, discussions have addressed whether nurses should perform detailed physical examination, whether physical examination contributes to the development of nursing roles or is an extension of different occupational roles,and whether data contribute to the objective of nursing care (Lesa, Cert, & Dixon, 2007; Wheeldon, 2005). However, studies are now investigating how physical examination can be

taught more effectively in nursing education and how nurses can use physical examination (Choi et al., 2020; Jamerson, 2019; Sushmitha, Krishnan, Tessy John N, & Jose, 2020) and be supported to do so (Donnelly & Martin, 2016; M. Khoran, Alhani, & Hajizadeh, 2016; Mitoma & Yamauchi, 2018). This body of research indicates that physical examination methods, which have become more common in recent years, should be simplified for nurses. Thus, it is necessary to evaluate the current practices regarding the use of physical examination techniques in order to strengthen the application of these methods in clinical practice by the nurses of our country. The aim of this study was then to determine adult clinical and intensive care unit nurses' views on the use of physical examination and related to factors.

The research questions

1. What are nurses' views on the use of physical examination methods?

2. What are the factors that affect the use of physical examination by nurses?

METHODS

This study aimed to determine nurses' views on the use of physical examination methods and related factors.

Type of Research

This research was conducted as descriptive. Research data will be collected through a questionnaire.

Place of Research

The study was conducted with the nurses of adult clinical and intensive care units of three public hospitals: Akdeniz University Hospital (Hospital 1), Antalya Training and Research Hospital (Hospital 2), and Antalya Ataturk Public Hospital (Hospital 3). Hospital 1has 983 beds and 880 nurses. Nursing students in the bachelor's degree program at Akdeniz University Nursing Faculty attend Hospital-1for clinical practice, the nurses of the hospital receive postgraduate education at the Nursing Faculty, and in-service training of all nurses is conducted by the professors of the Nursing Faculty. In the last five years, the educators of the Akdeniz University Nursing Faculty have provided the nurses of Hospital-1 with training on the development of physical examination methods, development of care behaviors, drug applications, and symptom management in oncology.

Hospital-2; has 1,270 beds and 850 nurses. Hospital-2 provides five in-service training sessions per year for nurses and other healthcare professionals, but the training not included to physical examination methods.

Hospital-3; has 525 beds and 387 nurses. Hospital-3has been verbally reported to provide nurses with training for their postgraduate development, but formal education records have not been available.

Functional nursing services are provided in in all three institutions, and the management service comprises a healthcare services directorate and a nurse in charge.

Population and Sample of the Research

The study population consisted of 1,417 nurses of the three public hospitals. The inclusion criterion was nurses working in services for at least one year. The exclusion criteria were working in pediatrics, psychiatry clinics, and emergency units. Sample selection was not used in the study, and it aimed to reach the whole population. Those who agreed to participate in the study were included in the sample. A total of 606 questionnaires were collected due to nurses' unwillingness to participate in the study, being on annual or maternity leave, and filling in the questionnaire incompletely. Approximately 250 nurses did not participate in the study because they were on annual leave, maternity leave, or on report, and 180 nurses were excluded due to working for less than one year. Three hundred twenty-nine nurses chose not to participate in the study because physical examination was not performed in their hospitals. Ultimately, 606 questionnaires were analyzed after exclusion of 52 incomplete questionnaires.

Data Collection Tools

The researcher herself collected the data. Nurses were informed about the purpose and procedure of the study. The number of nurses in the clinics was obtained from head nurses and the work charts. The completed forms were marked on the name-list of nurses provided by the hospital administration and were then checked to see whether they were completed by participants. Based on the nurses' work schedules, the clinic was visited and the nurse was asked to complete the data collection form. The researcher remained in the clinic in case any questions arose in the process of filling out the form, though there was no active interaction between nurses. The nurses who chose not to complete the form were asked for their reason for not participating.

The research data were collected between July 2017 and February 2018 using the Nurses' Views of the Use of Physical Examination Questionnaire developed by the researcher based on a literature review (Birks et al., 2013; Douglas et al., 2014; McElhinney, 2010; Schmitt et al., 2015). The questionnaire consists of 16 items scored on a three-point Likert scale (disagree, undecided, agree). The questionnaire items were developed to determine the views of nurses about the use of physical examination methods. Four experts were consulted on the clarity and applicability of the questionnaire, which was then revised based on their feedback. A pilot study was conducted with 40 nurses, who were not included in the main study. They reported that the items were intelligible, short, and easy to read. The time required to complete the questionnaire was determined as five to seven minutes.

Evaluation of Data

The data were analyzed using SPSS for Windows 22.0. Data compatibility was determined using the Shapiro–Wilk test. The data showed a normal distribution, and parametric tests were used in the statistical analysis. The demographic and professional characteristics of the nurses were summarized using descriptive analyses including arithmetic mean, frequency, and percentage analysis. As the questionnaire was not employed as a scale, no scoring was performed; the frequency and percentage for each item was instead calculated and interpreted. The institutional and educational factors that may affect nurses' views on physical examination were analyzed with chi-square tests. The statistical significance level was accepted as .05.

Ethical Aspect of Research

Institutional Review Ethics Board approval was obtained for conducting the research (approval date 17/08/2016 and number 2012-KAEK-20). Afterward, permission was obtained from the General Secretariat of the Association of Antalya Public Hospitals for Hospital-2 and Hospital- 3 (document number 20387 and date 28/04/2017) and from the Head Physician of Hospital-1 (document number E58711 and date 02/05/2017). Nurses were verbally informed about the purpose, procedure, and confidentiality of the study and that participation was voluntary. Participants' names were not used for confidentiality reasons.

RESULTS

The average age of the nurses was 35.05 ± 7.59 years. Females comprised 93.07% of the sample, and 64.69% of the sample had a bachelor's degree while 9.08% had a postgraduate degree (Table 1). Among the physical examination methods used frequently, 36.50% and 26.90% of nurses used palpation and inspection, respectively. In this study, 82.51% of nurses had physical examination methods education in the under graduation period and 28.71% of nurses had in-service training.

Table 1. Demographic and professional characteristics of nurses

Demographic and occupational characteristics	Total	
Age Groups	**n**	**%**
20-30	197	32.94
31-40	252	42.14
41+	149	24.92
Gender		
Female	564	93.07
Male	42	6.93
Marital status		
Married	427	70.58
Single	178	29.42
Educational Level		
High school	35	5.78
Associate degree	124	20.46
Bachelor's degree	392	64.69
Postgraduate degree	55	9.08
Institution		
Hospital 1	231	38.1
Hospital 2	255	42.1
Hospital 3	120	19.8
Department		
Surgery Services	236	39.20
Internal Medicine Services	192	31.89
Intensive Care Units (ICUs)	174	28.90

Agreement was noted among 88.1%of the nurses in the study that physical examination is an important tool in defining the clinical condition of the patient, and 86 % of the nurses agreed that it is more satisfying to use physical examination methods to know and understand patients and their problems (Table 2).

Table 2. Responses of nurses regarding views the use of physical examination methods (n: 606)

Nurses' Views	Agree n (%)	Undecided n (%)	Disagree n (%)
1. Nurses are responsible for using physical examination methods	400 (66.00)	98 (16.20)	108 (17.80)
2. Information on physical examination methods provided during nursing education is sufficient for my professional life	251 (41.40)	165 (27.20)	190 (31.40)
3. Information on physical examination methods provided during nursing education is consistent with clinical practice	328 (54.10)	139 (22.90)	135 (22.30)
4. Post-graduation in-service training is necessary	488 (80.50)	56 (9.20)	61 (10.10)
5. I use physical examination methods in the clinic where I work	470 (77.60)	59 (9.70)	73 (12.00)
6. Physical examination methods are an important way to provide information on patients' clinical condition	534 (88.10)	23 (3.80)	49 (8.10)
7. Physical examination methods are an important way to determine patients' deteriorating clinical conditions	534 (88.10)	25 (4.10)	45 (7.40)
8. Using or applying physical examination methods is useful for professional development	524 (86.50)	35 (5.80)	47 (7.80)
9. Physicians are not responsible for the physical examination methods I use	414 (68.30)	100 (16.50)	86 (14.20)
10. I use physical examination methods because nurses are responsible for them	437 (72.10)	75 (12.40)	92 (15.20)
11. I would like to use physical examination methods as long as the institution where I work supports it	453 (74.80)	82 (13.50)	68 (11.20)
12. The more years of work and experience nurses have, the more often they use physical examination methods	406 (67.00)	84 (13.90)	113 (18.60)
13. If physical examination methods are constantly used in my workplace, it motivates me to use them	454 (74.90)	84 (13.90)	65 (10.70)
14. I would rather use physical examination methods than do paperwork	486 (80.20)	54 (8.90)	62 (10.20)
15. It is more satisfying to use physical examination methods to know and understand patients and their problems	521 (86.00)	42 (6.90)	42 (6.90)
16. It is easier to prepare a nursing care plan using physical examination data.	503 (83.00)	59 (9.70)	43 (7.10)

Of the nurses working in Hospital 1, 79.91% agreed with the item "nurses are responsible for using physical examination methods," a higher rate than other hospitals (p<.00). Similarly, 88.79% of nurses working in Hospital-1 agreed with the item "post-graduation in-service training is necessary" (88.79%; p<.00), and 83.19% agreed with the item "I would like to use physical examination methods as long as the institution where I work supports it" (83.18%; p<0.002). A statistically significant difference was found compared to the other hospitals (Table 3).

Table 3. The relationship between the nurses' views and the institution

	Nurses' views	*Institution Hospital 1 (%)	Hospital 2 (%)	Hospital 3 (%)	X^2/p
	Agree	79.91	58.26	55.00	
1.	Undecided	11.68	19.83	17.50	*39.173/ <.000**
	Disagree	8.41	21.90	27.50	
	Agree	36.92	45.04	40.00	
2	Undecided	31.78	25.62	23.33	*6.447/ .168*
	Disagree	31.31	29.34	36.67	
	Agree	54.21	54.96	52.50	
3.	Undecided	24.30	20.25	25.00	*2.776/ .596*
	Disagree	21.50	24.79	22.50	
	Agree	88.79	76.86	74.17	
4.	Undecided	6.07	9.50	14.17	*19.284/ .000**
	Disagree	5.14	13.64	11.67	
	Agree	84.11	72.31	78.33	
5.	Undecided	7.94	13.64	4.17	*18.154/ .001***
	Disagree	7.94	14.05	17.50	
	Agree	92.99	88.02	80.00	
6.	Undecided	1.87	4.13	6.67	*14.406/ .006***
	Disagree	5.14	7.85	13.33	
	Agree	83.18	88.43	84.17	
7.	Undecided	3.27	3.72	5.83	*4.898/ .298*
	Disagree	5.61	7.85	10.00	
	Agree	91.12	85.54	79.17	
8.	Undecided	2.80	6.61	9.17	*12.427/ .015***
	Disagree	6.07	7.85	11.67	
	Agree	82.10	61.40	60.00	
9.	Undecided	10.90	21.90	16.70	*34.326/ <.000**
	Disagree	7.00	16.70	23.30	
	Agree	83.00	66.10	65.00	
10.	Undecided	8.30	15.40	14.20	*21.853/ .000**
	Disagree	8.70	18.50	20.80	
	Agree	83.18	71.49	66.67	
11.	Undecided	9.81	14.88	16.67	*16.632/ .002***
	Disagree	7.01	13.64	16.67	
	Agree	70.09	68.60	59.17	
12.	Undecided	14.02	14.46	13.33	*7.730/ .102*
	Disagree	15.89	16.94	27.50	
	Agree	78.97	75.21	69.17	
13.	Undecided	12.62	12.40	17.50	*5.527/ .237*
	Disagree	8.41	12.40	13.33	
	Agree	84.11	79.75	75.00	
14.	Undecided	8.41	8.26	11.67	*6.384/ .172*
	Disagree	7.48	11.98	13.33	
	Agree	91.12	84.71	81.67	
15.	Undecided	4.21	7.85	8.33	*9.575/ .048***
	Disagree	4.67	7.44	10.00	
	Agree	86.45	81.82	80.00	
16.	Undecided	8.88	9.50	10.00	*5.581/ .233*
	Disagree	4.67	8.68	10.00	

* < .001 ** < .05 **Hospital 1:** Akdeniz University Hospital, **Hospital 2:** Antalya Training and Research Hospital **Hospital 3:** Antalya Ataturk Public Hospital

Nurses with bachelor's degrees and postgraduate degrees showed high rates of agreeing with the item "nurses are responsible for using physical examination methods" (69.71% and 83.02%, respectively) compared to other education level groups (p<0.000). Nurses who had received undergraduate training in physical examination methods agreed more with this item (71.91%) than those who had not received training (p< 0.000). Of the nurses who had received in service education on physical examination methods, 68.48% with the item "information on physical examination methods provided during nursing education is consistent with clinical practice" (p< 0.000; Table 4).

DISCUSSION

This study found that nurses frequently used palpation and inspection methods. Studies have shown that nurses mostly use these methods, with auscultation and percussion used less frequently (Birks et al., 2013; Cicolini et al., 2015; Majczak & Hohl, 2015; Osborne et al., 2015). Researchers have stated that nurses prefer inspection to observe the general condition of patients and use palpation to measure heart rate and body temperature (Cicolini et al., 2015; Osborne et al., 2015). Studies have likewise indicated that physical examination methods are frequently used to evaluate critical situations, such as monitoring the patient's hemodynamic parameters (Cicolini et al., 2015; Liyew et al., 2020; Osborne et al., 2015). A study conducted in Japan revealed that nurses tended to use auscultation more than inspection (Maejima & Ohta, 2019). Estes (2013, p. 262), described physical examination as assessing patients systematically using these methods. According to this definition, physical examination should be done completely and systematically to demonstrate that nurses use physical examination methods. However, as shown in the literature, monitoring only vital signs with inspection and palpation, and the use of auscultation mainly in the assessment of the chest area, does not cover a complete physical examination process and may not define the patient's critical condition as a whole. Therefore, the use of inspection, palpation, percussion, and auscultation methods as a whole is necessary in patient evaluation to improve the physical examination skills of nurses.

In this study, nurses expressed that physical examination was an effective method of collecting data about the patient's condition and identifying critical health status (Table 2). It has been reported that the assessment, interpretation, and actions taken based on the findings obtained by nurses through physical examination contributes to positive health outcomes for patients (Wombeogo, Azongo, & Abugre, 2018).

Table 4. The relationship between the nurses' views and their education status and their education on physical examination methods

	Nurses' Views	Education Status					Training on Physical Examination Methods					
		High School %	Associate Degree %	Bachelor Degree %	Postgraduate Degree %	X2/p	Undergraduation Yes %	Undergraduation No %	X2/p	In service training Yes %	In service training No %	X2/p
1.	Agree	51.52	48.72	69.71	83.02	30.161/<0.000*	71.91	35.35	52.131/ <.000*	68.48	64.48	3.165/.206
	Undecided	30.30	21.37	15.01	5.66		13.21	31.31		12.73	17.76	
	Disagree	18.18	29.91	15.28	11.32		14.88	33.33		18.79	17.76	
2.	Agree	45.45	40.17	41.55	35.85	2.188/ 0.902	44.44	24.24	15.213/.000*	58.18	34.06	29.896/ <.000*
	Undecided	21.21	27.35	27.08	33.96		26.62	31.31		19.39	30.66	
	Disagree	33.33	32.48	31.37	30.19		28.93	44.44		22.42	35.28	
3.	Agree	54.55	52.14	54.16	58.49	0.568/ .568	58.28	34.34	18.529/ < .000*	68.48	48.42	19.169/ <.000*
	Undecided	33.33	23.08	21.72	22.64		21.17	30.30		15.76	25.55	
	Disagree	12.12	24.79	24.13	18.87		20.55	35.35		15.76	26.03	
4.	Agree	87.88	70.94	82.84	83.02	12.460/ .053	82.81	70.71	13.893/.001**	85.45	78.83	5.012/.0816
	Undecided	9.09	12.82	8.58	5.66		7.76	16.16		6.06	10.46	
	Disagree	3.03	16.24	8.58	11.32		9.43	13.13		8.48	10.71	
5.	Agree	81.82	72.65	78.55	83.02	4.089/.665	81.34	61.62	18.459/ <.000*	85.45	74.94	8.028/.018**
	Undecided	12.12	11.11	8.85	9.43		8.60	14.14		6.67	10.71	
	Disagree	6.06	16.24	12.60	7.55		10.06	24.24		7.88	14.36	
6.	Agree	93.94	82.91	88.74	92.45	5.263/ .511	89.52	81.82	9.008/.011**	90.30	87.35	1.686/.431
	Undecided	3.03	5.98	3.49	1.89		2.94	8.08		3.03	4.14	
	Disagree	3.03	11.11	7.77	5.66		7.55	10.10		6.67	8.52	
7.	Agree	96.97	82.91	89.01	92.45	9.433/ .151	88.89	86.87	10.093/.006**	90.91	87.59	1.97/.373
	Undecided	-	4.27	4.56	1.89		3.14	8.08		3.03	4.38	
	Disagree	3.03	12.82	6.43	5.66		7.97	5.05		6.06	8.03	
8.	Agree	90.91	80.34	86.33	96.23	11.0800/ 0.086	87.63	79.80	13.069/.002**	90.91	84.43	7.85/.020**
	Undecided	6.06	5.98	6.43	-		4.40	12.12		1.82	7.30	
	Disagree	3.03	13.68	7.24	3.77		7.97	8.08		7.27	8.27	
9.	Agree	45.70	56.10	73.50	81.50	31.787/ .000*	73.50	47.60	30.141/ .000*	68.40	69.20	1.381/ .501
	Undecided	37.10	19.50	14.90	9.30		13.30	32.40		14.90	17.40	
	Disagree	17.10	24.40	11.60	9.30		13.10	20.00		16.70	13.40	
10.	Agree	54.30	57.30	76.90	85.50	29.497/ .000*	76.90	50.90	36.842/ .000*	73.40	71.90	1.721/ .423
	Undecided	20.00	20.20	10.50	3.60		9.00	28.30		9.80	13.50	
	Disagree	25.70	22.60	12.60	10.90		14.10	20.80		16.80	14.60	
11.	Agree	78.79	70.09	75.34	79.25	4.734/ .578	78.20	58.59	17.63/.000*	76.97	73.97	1.619/.445
	Undecided	15.15	12.82	13.67	11.32		11.53	22.22		11.52	14.11	
	Disagree	6.06	17.09	10.99	9.43		10.27	19.19		11.52	11.92	
12.	Agree	72.73	71.79	64.88	69.81	4.495/ .610	67.09	67.68	0.056/.972	71.52	65.45	2.797/.247
	Undecided	15.15	9.40	15.28	15.09		14.26	13.13		15.15	13.63	
	Disagree	12.12	18.80	19.84	15.09		18.66	19.19		13.33	20.92	
13.	Agree	69.70	72.65	75.87	81.13	4.531/ .605	77.78	63.64	14.160/ .000*	78.18	74.21	1.442/.486
	Undecided	21.21	15.38	12.60	11.32		11.95	21.21		12.12	14.11	
	Disagree	9.09	11.97	11.53	7.55		10.27	15.15		9.70	11.68	
14.	Agree	78.79	78.63	80.70	83.02	3.510/ 0.744	82.18	71.72	7.204/.027**	79.39	80.78	0.862/ .650
	Undecided	12.12	6.84	9.38	9.43		7.76	15.15		10.91	8.27	
	Disagree	9.09	14.53	9.92	7.55		10.06	13.13		9.70	10.95	
15.	Agree	87.88	81.20	86.33	98.11	7.476/ 0.279	88.68	75.76	19.8433/ <.000*	86.67	86.37	1.2441/ .5369
	Undecided	6.06	9.40	6.70	-		5.03	14.14		5.45	7.06	
	Disagree	6.06	9.40	6.97	1.89		6.29	10.10		7.88	6.57	
16.	Agree	87.88	80.34	82.31	92.45	4.976/ .547	84.28	77.78	7.831/ .021**	84.24	82.73	1.456/ .483
	Undecided	9.09	11.11	9.38	5.66		8.39	14.14		7.88	9.98	
	Disagree	3.03	8.55	8.31	1.89		7.34	8.08		7.88	7.30	

* < .001 ** < .05

Consistent with this study results, different studies have shown that frequent observation and use of physical examination methods help in evaluating changes in condition (Fennessey, 2019; Hogan, 2006; Zambas, Smythe, & Koziol-Mclain, 2016). Hogan (2006) reported that it is important to evaluate blood pressure, pulse, and respiratory rate to identify critically ill patients. The patient assessment process must include physical examination as well as the health history for a rapid condition assessment of the patient using vital signs and specific clues. McElhinney (2010) observed that nurses believe they can better understand patients and their problems and recognize critical situations more easily with physical examination methods. In a qualitative study, stakeholders consisting of nurses, doctors, nurse managers, and educators stated that the use of systematic physical examination skills by advanced-practice nurses in the community had a protective effect on health and enabled disease symptoms to be identified at an early stage (Raleigh & Allan, 2017).

The importance of physical assessment in managing critical situations and handling the patient as a whole is clear. In this context, the views of nurses on the use of physical examination methods found by this study may be considered positive in the dimension of obtaining data from patients and recognizing critical situations.

In this study, nurses with bachelor's degree and postgraduate degree evaluated the use of physical examination within the scope of their duties (Table 4). This degree programs have a more extensive scope than high-school and associate-degree programs in training professional nurses and providing students with professional philosophy. Nursing students in bachelor's and postgraduate degree programs have more detailed information about physical examination and have the opportunity to apply high-level skills. Studies have shown that nursing education is effective in the use of physical examination. Khoran et al. (2018) reported that non-standard nursing education curricula and lack of knowledge about patient assessment were among the barriers faced by nurses in health assessment. Egilsdottir, Byermoen, Moen, and Eide (2019) reported that during three-year undergraduate nursing education, basic physical examination skills are increasingly being used in clinical practice education. Training of intensive care nurses about physical examination has been shown to positively affect their physical examination knowledge (Liyew et al., 2020). The importance of assessing the individual as a whole in nursing education has been often discussed, and this process forms the basis for the nursing student's use of physical examination. However, the evaluation of the individual and the use of physical examination methods are skills that a nurse must use throughout their professional life, and continuous training and information updates after graduation keep these skills current. In accordance with studies showing the effect of education on the use of physical examination methods, this study found that the rate of physical examination use was high in hospitals organizing in-service training and holding activities such as congresses and courses.

The results of this study suggest that the training and institutional support affected the adoption of physical examination use and evaluation within the scope of their professional roles. The high frequency and rate of physical examination use by Hospital 1 and 2 nurses is an important finding in this sense (Table 3). Hospitals in Turkey are divided into groups according to their working activities. In Hospitals 1 and 2, job descriptions of employees are clear, scientific activities and studies are performed, and in-service training is intensive. On the other hand, nurses working at Hospital 3, where in-service training education records were not available, were less willing to practice physical examination. Bauer et al. (2018) stated that organisational and managerial support facilitates the nurses use of physical examination. The positive effect of nurses' training under graduation and postgraduation period on their willingness to use physical examination methods is a result compatible with the literature. International studies have indicated that nurses who received training on physical examination after graduation used physical examination more frequently in practice than those who did not (Baid, Bartlett, Gilhooly, Illingworth, & Winder, 2009; Mitoma & Yamauchi, 2018; Neville, Gillon, & Milligan, 2011). Nurses who received physical examination training after graduation also applied physical examination related to the respiratory and cardiovascular systems more frequently and were able to recognize the problems of patients faster. The effect on nurses' use of physical examination methods of an institutional culture in which physical examination is practiced, a culture of patient care, and training in physical examination methods cannot be denied. In this direction, it will be important to reinforce and update the physical examination knowledge and skills obtained in nursing education with post-graduation training and to create a culture of physical examination practice in clinics.

CONCLUSION

Our research findings show that the use of physical examination is effective in constantly observing the individual in patient care and determining their critical condition, as well as that nurses working in institutions where post-graduation training is given and job descriptions are clear are more inclined to use physical examination methods. Nurses who have received training in physical examination methods in their nursing education and are supported by in-service training after graduation use physical examination methods more consciously.

The fact that nurses have positive opinions about the use of physical examination methods is an important finding. The effects of education level of nurses, their education about physical examination, and the influence of the institution where they work should be further evaluated. In this context, it will

be important to support nurses with continuous training on the use of physical examination methods after graduation, guide them at an institutional level, and provide single-level undergraduate nursing education to popularize the use of physical examination methods, especially considering that some in Turkey have ahigh-school nursing education. In addition, the effect on physical examination methods of nurses' working hours and the number of patients they care for has not been examined, and these relationships should be investigated in future studies.

Limitations

The first limitation of the study is that the sample is not representative of Turkey as a whole, and therefore, the results may not be generalizable to a wider population. The second limitation is that some nurses did not volunteer to participate in the study due to an excessive workload, and the high number of patients being cared for.

Author Contributions

All authors confirmed that they are in agreement with the content of the manuscript.

- Study conception and design: AKD, EK
- Data collection: AKD
- Data analysis and interpretation: Statistics Support From expert statistician, AKD, EK
- Drafting of the article: AKD
- Critical revision of the article: EK

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Conflict of Interest

No conflict of interest has been declared by the authors.

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