

Use of the Barriers Scale Between the Years 2000 and 2012 in Turkey: A Systematic Review *

Türkiye’de 2000-2012 Yılları Arasında Engeller Ölçeği Kullanılarak Yapılmış Araştırma Sonuçları: Sistematik Bir Derleme

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ABSTRACT Objective: The aim of this systematic review was to examine data obtained using the BARRIERS scale and to determine the main barriers. **Methods:** Turkish Citation Index, Medline and CINHALL (October 2000 to October 2012) were searched for published research. The search was performed using the key words (BARRIERS scale, research utilization scale, Turkey etc.). Studies with nurse samples that have been conducted between the years 2000 and 2012 using the BARRIERS scale were included in our search. **Results:** The most common barrier was phrased “The facilities are inadequate for implementation”. All studies were descriptive and cross-sectional. In 7 studies, which used the Funk’s Barriers Scale, the scale was found to be valid and reliable among Turkish nurses. The majority of studies were conducted by academicians. **Conclusion:** The nurses have stated the following items as the main factors affecting their utilization of research results: not perceiving themselves as professionally sufficient to implement a change in patient care, not being encouraged to conduct research in their working environment, and similarly, not being encouraged to utilize the results of research studies in their working environment. Determining the reasons behind nurses not using certain research results and affecting factors, makes implementing the aforementioned research results into practical application easier and subsequently, increases the quality of care. Implementing research results in patient care also has a positive effect on patient satisfaction.

Keywords: Nurses; clinical nursing research; evaluation research

ÖZET Amaç: Bu sistematik derlemenin amacı “Engeller” ölçeği kullanımından kaynaklanan bilgi durumunu incelemek ve temel engelleri belirlemektir. **Gereç ve Yöntem:** Türkiye Atıf İndeksi, Medline and CINHALL (Ekim 2000’den Ekim 2012’ye kadar) basılmış araştırmalar araştırıldı. Araştırma anahtar kelimeler (Engeller Ölçeği, araştırma kullanım ölçeği, Türkiye vb.) kullanılarak gerçekleştirildi. Araştırmaya alınma ölçütleri: 2000-2012 yılları arasında Engeller ölçeği kullanılarak hemşireler ile yapılmış araştırmalardır. **Bulgular:** Araştırmada incelediğimiz makalelerde hemşirelerin en sık karşılaştıkları engel “Uygulamalar için koşullar yetersiz” dir. Tüm araştırmalar tanımlayıcı ve kesitsel çalışmadır. Funk’s Engeller Ölçeği’nin kullanıldığı 7 araştırmada ölçek Türk hemşireleri için geçerli ve güvenilir bulunmuştur Araştırmaların büyük çoğunluğu akademisyenler tarafından yapılmıştı. **Sonuç:** Hemşireler, araştırma sonuçlarının hasta bakımında değişim yaratmak için kendilerini yeterli görmemeleri, iş ortamında araştırma yapma ve sonuçlarını kullanma ile ilgili desteklenmemeleri araştırma sonuçlarının kullanımını engelleyen faktörler olarak belirtmektedir. Hemşirelerin araştırma sonuçlarını kullanmama nedenleri ve bu durumu etkileyen faktörlerin belirlenmesi, bilimsel araştırma sonuçlarının uygulamaya aktarılmasını kolaylaştırır, bakım kalitesini artırır, hasta memnuniyeti de olumlu yönde etkilenir.

Anahtar Kelimeler: Hemşireler; klinik hemşirelik araştırmaları; araştırmaların değerlendirilmesi

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Introduction

The practical implementation of scientific and evidence based knowledge, which is essential for vocational and professional development, is an important professionalization criterion.^{1,2} Evidence based practice is very important in promoting professionalism in nursing since such practice provides the identification of the clinical problem and aids one in the clinical decision making process.^{2,3} In order to increase the quality of care and develop new nursing practices, the results of certain evidence based studies should be implemented into nursing practices.^{2,4} The use of research results and creating a change in nursing is quite difficult and requires effort.⁵ In some studies that focus on nursing research in Turkey, it is stated that nurses believe in the virtue of research, yet they think research findings are not applicable to clinical practice.⁶⁻⁹ As a result, the utilization of research findings in the nursing profession is still at insufficient levels.^{8,10,11}

Conducting research is among the duties of nurses who have received a certain amount of research training. Additionally, utilizing the results of recent studies is a professional responsibility more than a personal preference.¹² In nursing, research utilization has been defined as the use of research findings in any and all aspects of one's work as a nurse.¹³ Nurses, as well as actively taking part in the process by conducting research, are expected to read and evaluate recent studies, utilizing their results in their practices.^{12,14}

In Turkey, research education in nursing started in 1955 after the establishment of nursing schools in universities.^{12,15} With the Master (started in 1968) and PhD (started in 1972) programs opened after that period, nurses have started to conduct research and use their results.

In nursing, the BARRIERS scale, developed by Funk et al. and published in 1991, has been used extensively to identify

barriers to research use. Investigators have used this instrument since then, compiling a corpus of research findings that documents barriers to research use across continents, time, and study settings.^{15,16} In studies regarding the barriers in Turkey, both the scale developed by Funk and a general questionnaire were used.^{1-4,7-9,12,17-21}

In Turkish studies, the general results were found to be inapplicable to the clinical environment, and the necessary facilities for utilizing the results were found to be lacking.^{8,9} Determining the reasons behind nurses not using certain research results and affecting factors, makes implementing the aforementioned research results into practical application easier and subsequently, increases the quality of care. Implementing research results in patient care also has a positive effect on patient satisfaction.^{8,15}

Research Questions

1. Is BARRIERS scale a valid instrument in Turkish nurses?
2. Can the Barriers Scale adequately reflect the perceptions of nurses in Turkey?
3. Are the main barriers change over time and by geographic location?

Aim: The aim of this systematic review was to examine data obtained using the BARRIERS scale, to determine the main barriers and whether they varied over time and over geographic locations, and to identify associations between the barriers reported by nurses and the reported amount of research use.

Material and Methods

Data collection: This study was designed as a descriptive study. Two researchers searched for published reports in the Turkish Citation Index (2000 to September 2012), Medline (2000 to September 2012) and Cumulative Index to Nursing and Allied Health Literature (CINAHL) (2000 to September 2012) using the search terms.

The keywords were the BARRIERS scale, research utilization, Turkey, barriers in nursing, barriers in hospital, and Funk's Barriers scale. In November 2012, using the same databases and search terms, the search was updated for the period from 1 September to 31 October 2012.

Inclusion criteria: A study was eligible for inclusion if the study used Funk et al.'s BARRIERS scale among Turkish nurses. Studies with the keywords "research utilization, barriers, nursing, research, the utilization of research results, research barriers" were included. Studies with nurse samples were included. With regard to the first criterion, we included studies that used the original or slightly modified BARRIERS scale. No restrictions were made on the basis of study design.

Sample: It was determined that 19 articles regarding research barriers were published in Turkey in the aforementioned dates. One of the articles was omitted since its full text version could not be accessed and it was only summarized in a congress booklet, while four were omitted since they were irrelevant to the research results. Additionally, since one of the articles was published twice in different languages at different years, only the first published version of the article was included in our study. Thus, the present study was conducted by evaluating 13 articles.

Study limitations: The researchers had difficulty terming the research barriers that had the same articulation in Turkish but had different names in English under the same titles. A very limited number of studies were conducted and published on the subject. The fact that there is only one search engine online for reaching articles on nursing in Turkey has made reaching the studies difficult. Additionally, although there are MSc and PhD theses on the subject, these were omitted from the study since they were not published as articles.

Results

All studies were descriptive and cross-sectional. We found 13 studies which met our inclusion criteria. In 10 of these studies, the "Funk's Barriers Scale" was used; in 2 of them, no scales were used, and in one study, a question form used by Estabrooks was utilized. Among the studies, 11 were solely conducted by academicians, whereas only 2 studies were conducted by both academicians and clinical nurses. The majority of the studies were conducted in university and public hospitals. Only 7 studies out of 10, which used the "Funk's Barriers Scale", recalculated the Cronbach's Alpha value. The Cronbach's Alpha values were found to be between .70 and .92 and the scale was valid and reliable in Turkish nurses (Table 1). In one of the studies, the highest number of nurses consisted of those with a MSc or PhD degree, whereas the number of nurses with a MSc or PhD degree was the lowest in all of the other studies (Table 1).

Table 2 shows the first three barriers which emerged most frequently in the studies.

As shown in Table 3, in the studies, the biggest barrier encountered by nurses was "The facilities are inadequate for implementation (5 studies)", whereas "The nurse does not feel he/she has enough authority to change patient care procedures (4 studies)" was in the second rank. The first barrier is in the "Presentation" sub group, and the second barrier is in the "Nurse" sub group. In the present study, "There is insufficient time on the job to implement new ideas" was determined to be the third barrier affecting nurses' use of research results and "Physicians will not cooperate with implementation" was found to be the fourth barrier. When we examined the research results, we determined that the most important barriers and facilitators were generally similar and did not change according to geographic locations despite the fact that the studies

were conducted in different nurse groups (Table 3).

Discussion

Evidence-based nursing applications are an important factor in increasing the quality of care. In this study, it was determined that the barriers and facilitating factors related to utilizing the results of nursing researches perceived by nurses were parallel with similar study results. The inadequate facilities for implementation, not been compiled of the relevant literature in one place, physicians' not cooperating with implementation, any available document need to change practice, the nurses' feeling that the results are not generalisable to own setting are the top great barriers to research utilization reported in Turkey.^{3,18,20}

As shown in Table 3, our results are consistent with previous research findings. In the relevant literature, the following factors were identified as barriers to research utilization: nurses did not find it necessary to utilize research in clinical practice, incompetent skills regarding the apprehension and evaluation of research reports, insufficient statistical knowledge, lack of time and knowledge regarding the utilization of research results in care, low levels of understanding foreign languages, nurses' beliefs about the lack of time for conducting evidence based practice and believing that the practice of research results is a waste of time.^{3,4,7-9,12, 22-29} Other studies reported the following to be barriers to research utilization: (1) insufficient support from administrators, (2) belief that nurses lacked authority to change practice, (3) insufficient knowledge of research and statistical analysis, (4) lack of institutional or financial support, (5) insufficient support from colleagues, (6) lack of generalizability of findings, (7) lack of reliability in the interpretation of research findings and (8) inadequate time to implement changes suggested by research.^{28,30-37} Among the majority of nurses, the reasons for these barriers were

found to be not reading research literature, not participating in research, or not reflecting research findings onto nursing practice.^{4,26,28,38-42} According to Hutchinson and Johnston's (2006) review study, the most commonly cited barriers were (1) insufficient time to implement new ideas (20 studies), (2) lack of time to read research (eight studies) and (3) lack of awareness of research findings (eight studies).¹⁰

It was found that nurses perceive "the institution not being suitable for utilizing research results" as the biggest barrier (Table 3). An unsupportive health care system and institution is another important barrier to the utilization of research results in nursing care.^{22,26,43} Therefore, various characteristics of individuals and institutions affect nurses' utilization of research results in care.^{4,27,40,44} Rycroft-Malone (2004)⁴⁵ determined that organizational characteristics had the lowest effect on the utilization of research results in care. However, Estabrooks et al. (2003)⁴⁴ reported that institutional characteristics are important but it is hard to reach the goal without determining and developing individual characteristics. According to Özdemir and Akdemir (2009)³⁴, nurses with a higher education level were most likely to have conducted individual research projects. It can be concluded that various individual and organizational characteristics affect nurses' utilization of research results in care.^{4,27,44}

In this study, it was determined that the majority of nurses had a two-year degree and Bachelor's degrees, and that the number of nurses with an MSc degree was low in all studies except one. It has been noted that nurses' individual characteristics including their beliefs and attitudes regarding research, their educational levels, their behaviors regarding searching for and accessing information, and their professional characteristics affect the utilization of research in care.^{4,44} In addition, another important factor which is

a barrier to the utilization of research results in care is nurses' choice regarding the use of experience instead of using research derived information.⁴⁶

Researchers note that it is necessary to examine nurses' individual and professional characteristics in order to increase the quality of care and to implement evidence based practice instead of experience based practice.^{44,47,11} The majority of research examined in the present study were conducted by academicians (Table 1). While the number of Turkish nursing studies continues to increase, evidence shows that these studies

are mostly conducted by nurses working as academicians, and that nurses working in the clinical environment do not use the results of these studies for reasons similar to the aforementioned factors.^{3,4,48,49} This explains the difficulties that nurses face in reaching certain research results. In order to increase the quality of care, it is necessary for nurses to utilize the results of recent studies in their practice, and this utilization should be supported. Thus, providing access to the results of recent studies and notifying nurses about new developments in the field is a necessity.

Table 1. Characteristics of Researches (N=13)

Author's Name and Year of Publication	Made Institution and Year	The Researchers Status	Scale Name	Cronbach Alpha Value	The Universe of Research	Research Sample	Education Level of The Sample
Demir Y, Ak B, Çıtak Bilgin N, Efe H, Albayrak E, Çelikpençe Z, Güneri N - 2012	A state hospital in Bolu / 2010	Academics	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value fort the internal consistency was calculated as .78.	120	82	High school level 16 Associate's degree 59 Bachelor of science in nursing 7
Sarı D, San Turgay A, Ekti Genc R, Bozkurt OD - 2012	Twenty-seven Turkish Ministry of Health Hospitals, Seventeen Private Hospitals, One Municipality Hospital, Three University Hospitals in Izmir / 2010	Academics	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value wasn't calculated.	5406	718	High school level 61 Associate's degree 158 Bachelor of science in nursing 447 Master's degree / Doctorate 52
Tan M, Akgün Şahin Z, Kardaş Özdemir F - 2012	Eastern Anatolia Region of State Hospital (Thirteen) / 2009	Academics	The Barriers to Research Utilization Scale by Funk et al.	General Cronbach Alpha Value Non (Subgroups were calculated between .76 and .82)	1559	1094	High school level 209 Associate's degree 580 Bachelor's degree 305
Kocaman G, Seren S, Lash AA, Kurt S, Bengu N, Yürümezoğlu HA - 2010	A University Hospital in Izmir /	Academics	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value wasn't calculated.	580	329	Knowledge wasn't found.
Öztürk A, Kaya N, Ayık S, Uygur E, Cengiz A - 2010	The state and private hospitals in Istanbul / 2008	Academics Clinical Nurse	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value fort the internal consistency was calculated as .92. (Each subgroups were calculated between .73 and .80)	520	248	High school level 81 Associate's degree 74 Bachelor of science in nursing 88 Master's degree 5
Uysal A, Bayık Temel A, Ardahan M, Özkahraman Ş - 2010	Government and Private Hospitals in total forty-nine in Izmir / 2007	Academics	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value wasn't calculated.	4714	216	High school level 75 Associate's degree 82 Bachelor of science in nursing 59

Yılmaz FA, Tel H - 2010	Different hospitals in Sivas - 2005	Academics	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value fort the internal consistency was calculated as .85.	674	442	Associate's degree 155
Yava A, Tosun N, Çiçek H, Yavan T, Terakye G, Hatipoğlu S - 2007	Three Military Hospitals in Ankara Six Turkish Ministry of Healt Hospitals in Ankara /	Academics	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value fort the internal consistency was calculated as .87. (Subgroups were calculated between .64 and .78)	947	631	High school level 135 Associate's degree 385 Bachelor of science in nursing (BSN) 111
Bayık TA, Uysal A, Ardahan M, Özkahraman Ş - 2009	Two University Hospitals, One State Hospital, One Private Hospital in Izmir / 2005	Academics	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value fort the internal consistency was calculated as .92. (Subgroups were calculated between .73 and .80)	300	300	----- (Bachelor's Degree 48.7%)
Kelleci M, Gölbaşı Z, Yılmaz M, Doğan S - 2008	A University Hospital in Sivas / 2007	Academics	The scale wasn't used	-----	272	237	High school level 13 Associate's degree 71 Bachelor of science in nursing 144 Master's degree 9
Yava A, Çiçek H, Tosun N, Yanmış N, Koyuncu A, Güler A, Akbayrak N - 2008	One Military Hospital and one State Hospital in Ankara / 2008	Academics Clinical Nurse	The Barriers to Research Utilization Scale by Funk et al.	The Cronbach alpha value wasn't calculated.	67	51	High school level 8 Associate's degree 28 Bachelor of science in nursing 15
Altuğ Özsoy S, Ardahan M - 2007	Ege University- Dokuz Eylul University Hospitals in Izmir / 2003-2004	Academics	A questionnaire form that Estabrooks used	The cronbach alpha value was 0.73 for the total group.	624	498	Associate's degree 140 Bachelor of science in nursing 78 Master's degree 280
Emiroğlu ON, Ünlü H, Terzioğlu F, Bulut H - 2005	All hospitals in Ankara (Univesity hospitals, state hospitals, private hospitals, municipal hospitals) / 2000	Academics	The scale wasn't used	-----	4358	344	High school level / Associate's degree 268

Table 2. The three most important obstacle were determined by the research results (N=12*)

Yazar Adı ve Yılı	The three most common barriers
Demir Y, Ak B, Çıtak Bilgin N, Efe H, Albayrak E, Çelikpençe Z, Güneri N – 2012	<ol style="list-style-type: none"> 1. The nurse does not feel she or he has enough authority to change patient care procedures. 2. The facilities are inadequate for implementation. 3. Physicians will not cooperate with implementation.
Sarı D, San Turgay A, Ekti Genc R, Bozkurt OD - 2012	<ol style="list-style-type: none"> 1. The facilities are inadequate for implementation 2. The relevant literature is not compiled in one place 3. The nurse is unaware of the research
Tan M, Akgün Şahin Z, Kardeş Özdemir F - 2012	<ol style="list-style-type: none"> 1. There is insufficient time on the job to implement new ideas. 2. The nurse does not feel she or he has enough authority to change patient care procedures. 3. The nurse does not have time to read research.
Kocaman G, Seren S, Lash AA, Kurt S, Bengu N, Yürümezoğlu HA - 2010	<ol style="list-style-type: none"> 1. There is insufficient time on the job to implement new ideas. 2. Research reports/articles are written in English. 3. The facilities are inadequate for implementation.
Öztürk A, Kaya N, Ayık S, Uygur E, Cengiz A - 2010	<ol style="list-style-type: none"> 1. The nurse does not see the value of research for practice. 2. The nurse is unaware of the research. 3. The nurse is unwilling to change/try new ideas.
Uysal A, Bayık Temel A, Ardahan M, Özkahraman Ş - 2010	<ol style="list-style-type: none"> 1. The facilities are inadequate for implementation 2. The relevant literature is not compiled in one place 3. Physicians will not cooperate with implementation
Yılmaz FA, Tel H - 2010	<ol style="list-style-type: none"> 1. Lack of easy access to the research manuscripts. 2. Uncertainty about how the research results will affect the nursing practice. 3. Abstruse explanation of the statistical analyses in the research manuscripts.
Yava A, Tosun N, Çiçek H, Yavan T, Terakye G, Hatipoğlu S - 2007	<ol style="list-style-type: none"> 1. The nurse does not feel she or he has enough authority to change patient care procedures. 2. The nurse does not have time to read research. 3. The facilities are inadequate for implementation.
Kelleci M, Gölbaşı Z, Yılmaz M, Doğan S - 2008	<ol style="list-style-type: none"> 1 Nurses have difficulty in achieving the results of research in the field of nursing. 2. Nursing have difficulty that research papers to read and understand, and assessing .
Yava A, Çiçek H, Tosun N, Yanmış N, Koyuncu A, Güler A, Akbayrak N - 2008	<ol style="list-style-type: none"> 1. There is insufficient time on the job to implement new ideas 2. Physicians will not cooperate with implementation 3. The nurse does not feel she or he has enough authority to change patient care procedures
Altuğ Özsoy S, Ardahan M - 2007	<ol style="list-style-type: none"> 1. The information my fellow nurses share. 2. What has worked for me for years. 3. The ways that I have always done it.
Emiroğlu ON, Ünlü H, Terzioğlu F, Bulut H – 2005	<ol style="list-style-type: none"> 1. The lack of sufficient information. 2. The lack of time. 3. The individual unable / The lack of group work .

* The results of 12 studies are shown in the table since Bayık et al. did not mention the most encountered barriers in their study.

Table 3 Distribution of the most common barriers (N=12*)

BARRIERS	Used Funk's Barriers		Others
	Scale	Subgroup	
	n		
The facilities are inadequate for implementation.	5	Presentation	-
The nurse does not feel she or he has enough authority to change patient care procedures.	4	Nurse	2
There is insufficient time on the job to implement new ideas.	3	Presentation	-
Physicians will not cooperate with implementation.	3	Presentation	1
The nurse does not have time to read research.	2	Presentation	1
The relevant literature is not compiled in one place.	2	Setting	1
The nurse is unaware of the research.	2	Nurse	-
The nurse does not see the value of research for practice.	2	Nurse	-
Abstruse explanation of the statistical analyses in the research manuscripts.	1	Presentation	-
Research reports/articles are written in English	1	Setting	-
The nurse is unwilling to change/try new ideas.	1	Nurse	-
Lack of easy access to the research manuscripts.	1	Presentation	-

* The results of 12 studies are shown in the table since Bayık et al. did not mention the most encountered barriers in their study.

Conclusion

Transferring research findings into clinical practice will provide utilization and improvement of knowledge produced in nursing, an increase in evidence-based practices and nursing care quality and efficiency, and development of professional practices. Therefore, it is very important to determine the barriers to and facilitators of research utilization among nurses. Making clinical regulations on the basis of research findings in line with the needs of nurses regarding this issue will increase the quality of care and patient satisfaction accordingly.

As a result of the present study, we recommend research findings to be discussed with hospital administrations in order to eliminate the barriers to implementing research in practice and to create organizational awareness. It is assessed that nurses be trained in research and evidence-based applications, and supported from hospital management could be useful.

And addition to, we recommend, 1- results of the thesis that made in Turkey should be added, 2- comparison should be made with the research results that are using different models.

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