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THE DETERMINANTS OF CLINICAL PRACTICE GUIDELINES UTILIZATION*

KLİNİK UYGULAMA REHBERLERİ KULLANIMININ BELİRLEYİCİLERİ

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Abstract

The aim is to reveal the effect of physicians' personality traits, attitudes towards Clinical Practice Guidelines (CPGs) and perceived barriers to use of CPGs on the use of CPGs. The data were obtained by a survey questionnaire from physicians working in a public hospital. The validity and reliability of scales was evaluated with factor analyzes and reliability coefficients. The relationships between independent variables that are physicians' personality traits, attitudes towards CPGs and perceived barriers to use of CPGs and dependent variables that is use of CPGs in practices were examined by correlation analysis. The effects of independent variables on the dependent variable were evaluated by regression analysis. Data collection tools used in the study were determined to be valid and reliable. It was determined that openness to experience and extroversion dimensions and positive attitude towards CPGs significantly affect the use of CPGs. It was also determined that the negative attitude towards CPGs and individual barriers to CPGs use had a significant and negative effect. It is evaluated that it may be beneficial to improve the physicians' positive personality traits, to increase their positive attitudes towards CPGs, to turn negative attitudes into positive and to make the necessary arrangements to eliminate the barriers to increase the use of the CPGs.

Keywords: Clinical Practice Guidelines, Physician, Personality, Attitude, Barriers.

Öz

Amaç hekimlerin kişilik özelliklerinin, Klinik Uygulama Rehberlerine (KUR) yönelik tutumlarının ve KUR kullanımının önündeki engellere ilişkin görüşlerinin KUR kullanımı üzerindeki etkisini ortaya koymaktır. Veriler, bir kamu hastanesinde çalışan hekimlerden anket formu ile elde edildi. Ölçeklerin geçerliliği ve güvenilirliği faktör analizleri ve güvenilirlik katsayıları ile değerlendirilmiştir. Bağımsız değişkenler olan hekimlerin kişilik özellikleri, KUR'lara yönelik tutumları ve KUR kullanımının önündeki engeller ile bağımlı değişken olan KUR'ların günlük uygulamalarda kullanımı arasındaki ilişkiler korelasyon analizi ile incelenmiştir. Bağımsız değişkenlerin bağımlı değişken üzerindeki etkileri regresyon analizi ile değerlendirilmiştir. Araştırmada kullanılan veri toplama araçlarının geçerli ve güvenilir olduğu belirlenmiştir. Deneyime açıklık ve dışa dönüklük boyutlarının ve KUR'lara yönelik olumlu tutumun, KUR kullanımını anlamlı olarak etkilediği belirlenmiştir. Ayrıca, KUR'lara yönelik olumsuz tutumun ve KUR kullanımının önündeki bireysel engellerin anlamlı ve olumsuz bir etkisinin olduğu tespit edilmiştir. Hekimlerin pozitif kişilik özelliklerinin geliştirilmesinin, KUR'lara yönelik olumlu tutumlarının artırılmasının, olumsuz tutumlarının olumluya çevrilmesinin ve KUR kullanımının önündeki engelleri ortadan kaldıracak gerekli düzenlemelerin yapılmasının KUR kullanımının artırılmasında faydalı olabileceği değerlendirilmektedir.

Anahtar Kelimeler: Klinik Uygulama Rehberleri, Hekim, Kişilik, Tutum, Engeller.

GENİŞLETİLMİŞ ÖZET

Çalışmanın Amacı

Hekimler, çok hızlı bir şekilde büyüyen tıbbi veri tabanlarını takip etmekte zorluk çekmekte, yayınlanmış olan çalışmalara şüphe ile yaklaşmakta ve kalitesi hakkında belirsizlik bulunan kanıtlarla yüz yüze kalmaktadır. Bu nedenlerden dolayı tıbbi uygulamalarla ilgili verilecek kararlarda bilimsel kanıtlardan ziyade hekimlerin tecrübelerine dayalı bilgi ve beceri ön plana çıkmaktadır. Eleştirel bir yaklaşımla ele alınmış ve sentezlenmiş bilimsel kanıtlar ışığında geliştirilen ve Kanıta Dayalı Tıp (KDT) uygulamalarının bir uzantısı olan Klinik Uygulama Rehberleri (KUR) klinik karar verme süreçlerinde oldukça etkili bir araç olarak kullanılmaktadır. KUR'ların istenen hedeflerine ulaşması için kanıta dayalı rehber geliştirmenin yanında, rehberlerin geliştirilmesi için harcanan kaynak, zaman ve emeklerin boşa gitmemesi için rehberlerdeki önerilerinin uygulamaya aktarılması da gerekmektedir. Bunun sağlanmasında da hekimlerin kişilik özellikleri, KUR'lara yönelik tutumları ve KUR kullanımının önündeki algıladıkları engeller de büyük bir önem taşımaktadır. Bu nedenle bu araştırmada hekimlerin kişilik özelliklerinin, KUR'lara yönelik tutumlarının ve KUR kullanım engellerine ilişkin görüşlerinin KUR kullanımı üzerindeki etkisini ortaya koymak amaçlanmıştır.

Araştırma Soruları

Bu araştırmada hekimlerin kişilik özelliklerinin ve KUR'lara yönelik tutumlarının düzeylerinin ne olduğu, KUR kullanımının önündeki algıladıkları engellerin neler olduğu, araştırmanın bağımsız değişkenleri olan bu değişkenler ile KUR kullanımı arasında anlamlı ilişki olup olmadığı ve bağımsız değişkenlerin KUR kullanımı üzerinde etkili olup olmadığı sorularına cevap aranmıştır.

Literatür Araştırması

20. yüzyılın son yıllarına kadar klinik kararlar büyük ölçüde hekimlerin deneyim ve becerilerine dayalı olarak alınmış, tıp eğitimi ve uygulamalarında tıp liderleri hâkim olmuş, tıbbi uygulamalarda varyasyonların fazla olduğu, uygunsuz ve gereksiz kullanımların olduğu görülmüş ve KDT konusu gündeme gelmeye başlamıştır (Davidoff, 1999; Eddy, 2005; Guyatt et al., 1992; Institute of Medicine [IOM], 2011). KDT uygulamalarının bir uzantısı olan KUR'lar yalnızca hekimler için değil aynı zamanda diğer sağlık çalışanları, hizmet alanlar ve sağlık hizmeti yöneticileri içinde faydalı bir enstrümandır. KUR'lar, bilimsel kanıtların yanı sıra yapılması düşünülen uygulamanın olası fayda ve zararlarını ortaya koyarak hekim ve hastanın karar verme süreçlerine yardımcı olmakta, hastaların daha iyi sonuçlar elde edebilmesini sağlamakta, sağlık kaynaklarının daha etkin kullanımını desteklemekte, sağlık çalışanlarının eğitiminde önemli rol oynamakta, hasta ile sağlık profesyonelleri arasındaki iletişimin kalitesini artırmakta, uygulamalardaki varyasyonları azaltmakta ve sağlık hizmetlerinin kalitesini artırabilmektedir (Akyüz, Uğrak, Çelik, 2021; IOM, 2011; National Institute for Clinical Excellence, 2012; Royal College of Pediatrics and Child Health, 2016). Bu hususlar dikkate alındığında KUR'ların uygulamaya aktarılmasının gerekliliği ortaya çıkmaktadır.

Yöntem

Araştırma bir kamu hastanesinde görev yapan hekimlerle gerçekleştirilmiş olup minimum örneklem sayısının 229 olması gerektiği hesaplanmıştır. Veri toplama sürecinde hastanedeki tüm bölümlere ulaşılmış ve 245 geçerli anket elde edilmiştir. Araştırmada kullanılan anket formunun birinci bölümünde hekimlerin bireysel özelliklerine ilişkin sorular yer almış, ikinci bölümünde hekimlerin kişilik özelliklerini değerlendirmek için Beş Faktör Kişilik Ölçeği kullanılmış, üçüncü bölümünde hekimlerin KUR'lara yönelik tutumlarını ölçmek için bu araştırma kapsamında geliştirilmiş olan KUR Tutum Ölçeği yer almış, dördüncü bölümde hekimlerin KUR'ları kullanmalarının önündeki engelleri belirlemek için bu araştırma kapsamında geliştirilmiş olan KUR Engel Ölçeği yer almış, son bölümde hekimlerin KUR kullanım düzeylerini belirlemeye yönelik Likert ölçeğinde bir soru kullanılmıştır. Araştırmada analizler SPSS ve AMOS programları ile yapılmıştır. Ölçeklerin yapı geçerliliği için Açıklayıcı Faktör Analizi (AFA) ve Doğrulayıcı Faktör Analizi (DFA); değişkenler arası ilişkilerin belirlenmesinde Pearson Korelasyon Analizi; bağımsız değişkenlerin bağımlı değişkenler üzerindeki etkisini belirlemek için hiyerarşik regresyon analizi kullanılmıştır. Verilerin normallik varsayımını karşılayıp karşılamadığına çarpıklık ve basıklık değerlerine göre karar verilmiştir. İstatistiksel olarak $p<0,05$ değeri anlamlı olarak kabul edilmiştir. Ölçeklerin güvenilirliği Cronbach alfa ve kompozit güvenilirlik katsayıları ile değerlendirilmiştir.

Sonuç ve Değerlendirme

Araştırma sonucunda, bu çalışma kapsamında geliştirilen KUR Tutum Ölçeği ve KUR Engel Ölçeğinin geçerli ve güvenilir bir ölçek olduğu belirlenmiştir. KUR kullanım sıklığı ile uyumluluk, öz disiplin, gelişime açıklık, dışa dönüklük kişilik özellikleri ve olumlu tutum arasında pozitif yönlü anlamlı ilişkilerin olduğu, nörotiklik kişilik özelliği, olumsuz tutum, rehber engelleri, bireysel engeller, organizasyonel engeller ve hasta engelleri arasında negatif yönlü anlamlı ilişkilerin olduğu görülmüştür. KUR kullanım sıklığının belirleyicilerini ortaya koymak amacıyla yapılan regresyon analizleri sonucunda, KUR kullanım sıklığının gelişime açıklık ve dışa dönüklük kişilik özelliklerinden, KUR'lara yönelik olumlu ve olumsuz tutumdan, KUR kullanımına ilişkin bireysel engellerden etkilendiği belirlenmiştir. KUR kullanımının artırılması için hekimlerin olumlu kişilik özellikleri kazanmaları yönünde gelişimlerini sağlamanın, KUR'lara yönelik olumlu tutumlarını geliştirmenin, olumsuz tutumlarını olumlu hale dönüştürmenin, KUR kullanımının önündeki engelleri azaltmak veya ortadan kaldırmak için gerekli düzenlemelerin yapılmasının faydalı olabileceği değerlendirilmiştir.

1. INTRODUCTION

Until the late 20th century, it was observed that clinical decisions were largely based on experience and skill ("art" of medicine), medical leaders were dominant in the teaching and practice of medicine, there were a large number of variations, unnecessary and inappropriate uses in medical practices and progress started to occur in evidence-based medicine practices (Davidoff, 1999; Eddy, 2005; Guyatt et al., 1992; IOM, 2011).

Physicians are unable to keep up with the rapidly expanding medical databases, approach the studies in the literature with suspicion and face with evidence of uncertainty about its quality. This situation emphasizes the knowledge and skills of physicians based on experience rather than scientific evidence in decision-making processes related to medical practices. Clinical Practice Guidelines (CPGs) developed based on critically evaluated and synthesized scientific evidence and seen as an extension of evidence-based medicine practices can be used as an effective tool in clinical decision making processes (IOM, 2011).

CPGs are beneficial for service recipients and healthcare managers as well as physicians (Royal College of Pediatrics and Child Health, 2016). CPGs help physicians and patients make decisions by revealing scientific evidence and possible benefits and harms, improve patient outcomes, ensure effective use of resources, contribute to the training of healthcare professionals, improve the quality of communication between patient-healthcare professionals, reduce variations in practice, and improve healthcare service quality (Akyüz et al., 2021; IOM, 2011; National Institute for Clinical Excellence, 2012).

It is not sufficient to develop evidence-based guidelines for CPGs to achieve their intended goals. Guideline’s suggestions should also be put into practice so that the time and efforts spent on developing the guidelines are not wasted. The attitudes of physicians towards CPGs, the barriers in front of using CPGs and the personality traits of physicians are also very important in increasing the utilization of CPGs in daily practices of physicians. Therefore, in this study, it was aimed to reveal the effect of physician's personality traits and attitudes towards CPGs and physicians' views about clinical practice guidelines usage barriers on the use of CPGs.

2. METHODS

2.1. Sample

The research was conducted in a public hospital. The universe of the research was determined as physicians working in the hospital and it was calculated that the minimum sample number should be 229. In the study, a questionnaire was delivered to all departments in the hospital and the number of valid questionnaires collected was 245.

2.2. Data Collection

A survey questionnaire consisting of five sections was used to collect data. The first section included questions to collect data on demographic characteristics of participants such as age, gender, marital status and experience in years. In the second section, the Big Five Inventory (BFI) was used to evaluate the personality traits of physicians. The 44-item scale developed by Benet-Martinez and John consists of dimensions of extraversion, agreeableness, conscientiousness, openness to experience, and neuroticism (Benet-Martinez & John, 1998). In the third section, the Physician Attitudes Against CPGs Scale (PAACPGs) used to measure the attitudes of physicians towards CPGs is included. The five-point Likert type scale measured physicians' attitudes with a scale arranged as (1) "strongly disagree" and (5) "strongly agree". PAACPGs scale was developed within this research by the researchers based on a comprehensive literature review (Birrenbach et al., 2016; Bochud et al., 2002; Dye et al., 2000; Flores et al., 2000; Formoso et al., 2001; Graham et al., 2000; Heidrich et al., 2005; Hendaus et al., 2014; Heselmans et al., 2009; Heselmans et al., 2010; Kalies et al., 2017; Kim et al., 2010; Kunz, 2005; Larisch et al., 2009; Tunis et al., 1994; Wahabi et al., 2011; Wolff et al., 1998). In the fourth section, the CPGs Use Barriers Scale (CPGsUB) developed for the purposes of this research identified the barriers in front of physicians' use CPGs. CPGsUB was arranged as a five-point Likert type measuring scale. In this scale, (1) indicated "definitely not a barrier" while (5) indicated "definitely a barrier". CPGsUB scale was also developed by the researchers based on a literature review (Birrenbach et al., 2016; Bochud et al., 2002; Boyd et al., 2005; Haagen et al., 2005; Heidrich et al., 2005; Hendaus et al., 2014; Heselmans et al., 2009; 2010; Kalies et al., 2017; Larisch et al., 2009; Reiner et al., 2010; van Dijk et al., 2010). In the final section, the question "How often do you use CPGs?" was included in order to determine how often participant physicians used CPGs in their medical practices. The participants answered this question in a five-point Likert type scale, and this scale was arranged as (1) "never" and (5) "very often".

2.3. Statistical Analysis

Explanatory factor analysis (EFA) and confirmatory factor analysis (CFA) were used for the construct validity of the scales and Pearson correlation analysis was used to determine the relationships between variables. Hierarchical regression analysis was used to determine the effect of independent variables on dependent variables. Whether the data met the assumption of normality was decided according to skewness and kurtosis values. Statistically, $p<0.05$ value was considered significant. The reliability of the scales was evaluated with Cronbach alpha (CA) and composite reliability (CR) coefficients. SPSS and AMOS programs were used to run mentioned statistical procedures.

In the CFA, multivariate kurtosis and critical ratio value were examined for multivariate normality assumption. The critical ratio value is required to be below 20. Since the data did not meet the assumption of normality, the Unweighted Least Squares method was used in the analyzes. CFA

models were evaluated with fit index values (X^2/df≤5; GFI≥0.90; AGFI≥0.85; NFI≥0.90; RMR≤0.08; SRMR≤ 0.10) (Gürbüz, 2019).

2.4. Ethical Considerations

In order to conduct the study, permissions were obtained from the Ethics Committee of Hacettepe University (Date: 04.04.2017; Decision No: GO 17/310-09) and the institution where the study was conducted (Date: 04.24.2017; No: 70629056-604.01.02). Written consent was obtained from the participants in the study.

3. RESULTS

The results of validity and reliability analyses were provided below for each data collection tool.

3.1. Validity and Reliability of the Big Five Inventory

CFA was performed for the construct validity of the BFI. According to the findings of the first level multi-factor model CFA, as the factor load (r=0.323) of item number 35 regarding the dimension of openness to experience was low, this item was excluded from the analysis. The first level multi-factor model of BFI was re-tested with 5 dimensions and 43 items. The fit indices were estimated as X^2/df=1.314; GFI=0.916; AGFI=0.907; RMR=0.070 and SRMR=0.080, and these values were higher than the acceptable level of compliance. In the BFI, it was determined that the mean of the agreeableness dimension was 3.71±0.55, conscientiousness dimension was 3.98±0.56, the openness to experience was 3.39±0.62, the extroversion dimension was 3.36±0.69 and the neuroticism dimension was 2.40±0.68. The CA coefficients related to scale dimensions were found to be in the range of 0.829-0.883 and CR coefficients were in the range of 0.831-0.885.

3.2. Validity and Reliability of the Physician Attitudes Against CPGs Scale

EFA and CFA were performed to evaluate the construct validity of the scale. In the EFA, Kaiser Meyer Olkin (KMO) sample adequacy was found as 0.889, Bartlett's sphericity test value was 2,226.724 ($p<0.001$) and it was concluded that the scale was sufficient and suitable for factor analysis. For the PAACPGs, the variance value described in the EFA with principal component analysis, varimax methods and two-dimension limitation were used, and EFA produced two factors explaining 52.273% of overall variance. It was observed that factor loads related to the dimensions were between 0.805-0.550. Two factors were named as positive and negative attitudes.

Based on the results of EFA, first-level CFA were run the PAACPGs consisting of 18 items and 2 dimensions. The fit indices were estimated as X^2/df=1.050; GFI=0.976; AGFI=0.969; NFI=0.966; RMR=0.058; SRMR=0.065, and these values were found to be above the acceptable level of compliance. According to findings, it was determined that the factor loadings of the positive attitude dimension were between 0.830 and 0.445 and the average was 3.61±0.66 and the factor loads of the

negative attitude dimension were between 0.822 and 0.507 and the average was 2.58±0.68. According to CA and CR coefficients, the scale was found to be reliable (Table 1).

Table 1. Physician Attitudes Against CPGs Scale Findings

Item No	Statement	Factor Load	Mean (Sd)	CA	CR
	Positive Attitude				
1	An appropriate source of suggestion	0.830			
2	May improve the quality of patient care	0.792			
3	A good educational tool	0.765			
4	May reduce malpractice cases	0.746	3.61	0.886	0.916
5	May reduce healthcare costs	0.722	(0.66)		
17	A useful tool in daily medical practice	0.697			
6	Consists of impartial expert opinion	0.609			
15	Can be used in quality audits	0.518			
18	May reduce defensive medical practices	0.445			
	Negative Attitude				
12	Restricts physician's mental freedom too much	0.822			
14	May reduce job satisfaction for the physicians	0.750			
10	A barrier to the autonomy of the physician	0.748			
13	May reduce research activity	0.705	2.58	0.875	0.885
11	Developed by experts with little knowledge of clinical routine practices	0.700	(0.68)		
7	It is an extremely simplified medicine (cookbook medicine)	0.604			
9	It is not practical for patients of specific cases	0.551			
16	Only useful for the beginners in the profession	0.535			
8	It is not flexible for patients of specific cases	0.507			

Sd: Standard deviation; CA: Cronbach Alpha; CR: Composite Reliability

3.3. Validity and Reliability of the Clinical Practice Guidelines Use Barriers Scale

EFA and CFA were performed to evaluate the construct validity of the scale. In the EFA, KMO sampling adequacy was found as 0.882, Bartlett's test of sphericity value was 3,768.610 ($p<0.001$), and it was concluded that the scale was sufficient and suitable for factor analysis. For the CPGsUB, it was observed that item number 17 (the transactions in the guidelines are not covered by the paying institution or insurance companies) was placed under different dimension rather than intended one by EFA with four-dimension limitations, principal component analysis and varimax methods. It was decided to exclude this item. After discarding this item, EFA produced four dimensions and four dimensions explained 57.528% of overall variance. It was observed that factor loads related to the dimensions were between 0.820 and 0.446.

Based on the EFA, first-level CFA were performed for the CPGsUB, consisting of 29 items and 4 dimensions. The fit indices were estimated as $X^2/df=1.714$; GFI=0.940; AGFI=0.930; NFI=0.916; RMR=0.077; SRMR=0.080, and these values were found to be above the acceptable level of compliance. Four dimensions were named as guidelines, individual, organizational, and patient related barriers. The factor loads of the guideline's barriers were found to be between 0.818 and 0.587 and the average was 2.82±0.73; the factor loads of the dimension of the individual barriers were between 0.775 and 0.520 and the average was 3.20±0.68; the factor loads of the dimension of organizational barriers were between 0.756 and 0.499 and the average was 3.54±0.69; and the factor loads of patient barriers

were between 0.727 and 0.497 and the average was found to be 2.80±0.67. According to CA and CR coefficients, the scale was found to be reliable (Table 2).

Table 2. Clinical Practice Guidelines Use Barriers Scale Findings

Item No	Statement	Factor Load	Mean (Sd)	CA	CR
	Guidelines Barriers				
13	Presence of contradictory guidelines	0.818			
5	Lack of agreement regarding content	0.810			
6	Lack of agreement on topicality of guidelines	0.798			
12	Lack of usability	0.767			
22	Confusing	0.754	2.82 (0.73)	0.933	0.932
28	Lack of comprehensible	0.750			
21	Disrupting the nature of a patient-doctor relationship	0.748			
11	Lack of accessibility	0.730			
24	Lack of practical	0.695			
15	Not user friendly	0.672			
29	Extreme theoretical	0.623			
20	Reducing the flexibility of the physician	0.587			
	Individual Barriers				
7	Lack of confidence in guideline developers	0.775			
4	Not believing that they can realize the suggestions in the guidelines	0.719			
27	Not knowing how to access the guidelines	0.697	3.20 (0.68)	0.852	0.846
1	Lack of awareness	0.672			
8	Not believing that the desired results will be obtained for the patient	0.666			
3	Not giving up previous practice habits	0.580			
2	Lack of familiarity	0.520			
	Organizational Barriers				
19	Lack of incentive to use guidelines	0.756			
23	Lack of reminder system to use guidelines	0.703			
26	Not being informed about the guidelines	0.687	3.54 (0.69)	0.824	0.826
30	Lack of consensus on applying guidelines among physicians	0.646			
25	No additional contribution to performance payment	0.593			
14	Lack of time	0.553			
18	Lack of necessary facilities to implement the guidelines	0.499			
	Patient Barriers				
10	Failure to apply to the patient population	0.727	2.80 (0.67)	0.648	0.673
9	Not compatible with patient preferences	0.682			
16	Failure to apply to multimorbid patients	0.497			

Sd: Standard deviation; CA: Cronbach Alpha; CR: Composite Reliability

3.4. Descriptive Findings of Participants

Of participant physicians in the study; 41.2%, which is the majority, between 36-45, 84.1% are male, and 80.8% are married. The majority (42.0%) of physicians stated that they have a work experience of 11 to 20 years while 17.6% of them have been serving 21 years and over.

6.5% of the physicians stated that they never used the CPGs while 2.9% of them stated that they used the CPGs very frequently. CPGs average usage was found to be 2.83±0.90 in this research. This average might be interpreted as low use of CPGs.

3.5. Correlation Findings

According to the Pearson's correlation analysis findings, it was determined that there were positive correlations between the frequency of use of CPGs and agreeableness (r=0.180), conscientiousness (r=0.236), openness to experience (r=0.503), extraversion (r=0.381) personality traits

and positive attitude (r=0.396) and there were significant negative relationships between neuroticism (r=-0.215) personality trait, negative attitude (r=-0.384), guidelines barriers (r=-0.201), individual barriers (r=-0.445), organizational barriers (r=-0.133) and patient barriers (r=-0.190).

3.6. The Determinants of Clinical Practice Guidelines Utilization

The determinants of the use of CPGs of physicians were determined by hierarchical between blocks, intra-block stepwise multiple regression analysis. In the regression model, the variables of "agreeableness", "conscientiousness", "openness to experience", "extroversion" and "neuroticism", which are the BFI dimensions, were included in the first block. In the second block, "positive attitude" and "negative attitude" variables, which are the dimensions of the PAACPGs, are included. In the third block, "guidelines barriers", "individual barriers", "organizational barriers" and "patient barriers" variables, which are the dimensions of the CPGsUB, are included (Table 3).

Table 3. Regression Analysis Findings

Model	Variables	β	R	R^2	R2 Variation	F Variation	F Variation Significance
			Block 1				
1	Openness to Experience	0.503*	0.503	0.253	0.253	82.171	**0.000**
2	Openness to Experience Extroversion	0.416* 0.183*	0.528	0.279	0.026	8.702	**0.003**
			Block 2				
3	Openness to Experience Extroversion Negative Attitude	0.367* 0.147* -0.255*	0.582	0.339	0.060	21.833	**0.000**
4	Openness to Experience Extroversion Negative Attitude Positive Attitude	0.332* 0.142* -0.192* 0.151*	0.596	0.355	0.016	6.032	**0.015**
			Block 3				
5	Openness to Experience Extroversion Negative Attitude Positive Attitude Individual Barriers	0.205* 0.121* -0.185* 0.176* -0.176*	0.607	0.368	0.013	5.098	**0.025**

β: Beta; *: $p<0.05$

In the first block of regression analysis, the analysis was completed in two stages. In the first stage (model 1), it was observed that the variable of "openness to experience" had a significant effect in explaining the variance in the use of the CPGs, and its contribution to the description of the variance (25.3%) was statistically significant ($p<0.001$). In the second stage (model 2), it was observed that the variable of "extraversion" had a significant effect in explaining the variance in the use of the CPGs, and its contribution to the explanation of the variance (02.6%) was statistically significant ($p=0.003$) (Table 3).

In the second block of regression analysis, the analysis was completed in two stages. In the first stage (model 3), it was found that the "negative attitude" variable had a significant effect in explaining the variance in the use of CPGs, and its contribution to the explanation of the variance (06.0%) was statistically significant ($p<0.001$). In the second stage (model 4), it was observed that the variable of "positive attitude" had a significant effect in explaining the variance in the use of CPGs, and its contribution to the explanation of the variance (01.6%) was statistically significant ($p=0.015$) (Table 3).

In the third block of regression analysis, the analysis was completed in one stage and at this stage (model 5), it was observed that the variable of "individual barriers" had a significant effect in explaining the variance in the use of CPGs, and its contribution to the explanation of the variance (01.3%) was statistically significant ($p=0.025$) (Table 3).

4. DISCUSSION

Use of CPGs may vary according to different characteristics of its main users as well as health system and country characteristics. However, it is important to know CPG utilization variations among countries and health systems to decide whether there is a problem in using and spreading use CPGs. The studies on the level of use of CPGs report good and bad cases. For instance, the study conducted by Bochud et al. (2002) reported that 44% of physicians used CPGs at least once a week, 26% of them used less than once a week, 21% of them used less than once a month, 7% of them never used CPGs and 2% of them had no idea about CPGs. Another study carried out by Graham et al. (2000) also determined that 10% of physicians routinely used CPGs, 31% of them used most of the time, 42% of them used sometimes, 14% of them used very rarely, and 3% of them did not use CPGs at all to decide on patients' clinical problems. In the study conducted by Birrenbach et al. (2016), it was determined that only one-third of physicians used the guidelines very often (7%) or frequently (26%), more than half used them sometimes (56%), others rarely (6%) or none (6%). The study conducted by Hendaus et al. (2014) found that 25.3% of physicians used CPGs very frequently, 60.2% of them used frequently, and 14.5% of them used rarely. In the study carried out by Bhagat and Nyazema (2001), it was determined that 65.9% of the physicians used the CPGs in their daily practice. In the study conducted by Butzlaff et al. (2006), it was determined that 55.3% of the physicians used CPGs in the care of their patients. In the study conducted by Kunz (2005), only 40% of family physicians were reported to have used CPGs in the last six months. In the study conducted by Flores et al. (2000), it was reported that 35% of physicians used CPGs, 44% partially used and 21% did not use. This study showed that physicians who looked after a greater number of patients had lower levels of CPGs use. It was stated that the lack of scientific evidence regarding the CPGs, the complexity and difficulty of using a very detailed CPGs can be effective in low usage of CPGs among intensive physicians. Compared to the results of studies above, it might be discussed that use of CPGs in Turkey might be below since this study showed that only 2.9% of

physicians used CPGs frequently, and more than frequent users (6.5%) never used CPGs. The mean of CPGs usage was found to be 2.83±0.90.

There has been no study investigating the relationship between the personality traits and the use of CPGs in related literature. However, in this study, the relationship between personality traits and use of the CPGs was evaluated in the light of the findings of studies conducted in different fields and with different variables. When a general evaluation of the examined studies is considered, it might be seen that there are positive relationships between the research variables that can be qualified as positive, and agreeableness, conscientiousness, openness to experience and extroversion, but negative relationships between these research variables and neuroticism. In this study, it was determined that there were similar relationships between positive and negative personality traits and use of CPGs.

This study determined that there was a positive relationship between the positive attitude towards CPGs and the use of CPGs, while there was a negative relationship between the negative attitude dimension and the use CPGs. This finding is consistent with some studies reporting that the positive attitudes of physicians towards CPGs were significantly correlated with the use of CPGs, and the positive attitude increased the use of CPGs (Dye et al., 2000; Kim et al., 2010; Wahabi et al., 2011). The study of Heselmans et al. (2010) determined that the physicians with a positive attitude towards the evidence-based medicine and CPGs used the literature results and guidelines more in practice. In the study conducted by Kotzeva et al. (2010), it was stated that more familiarity with CPGs and using more CPGs were associated with higher positive attitudes. In the study conducted by Tinkle et al. (2016), it was determined that those who had a more positive attitude towards CPGs were more in harmony than those who had a negative and neutral attitude. The authors concluded that those who have awareness and familiarity with the guidelines adapted 2-5 times more than those who were “not aware” or “aware but not familiar”. The study of Graham et al. (2000) examined the relationship between the use of guidelines and the attitudes of the physicians towards the guidelines and discussed that the physicians who had a positive attitude towards the guidelines as a whole were significantly more likely to use the guidelines and it was stated that this was not an unexpected result. They also concluded that physicians with a neutral opinion used 3 times more and physicians with a positive attitude used 5 times more guidelines compared to the physicians who have negative attitudes towards the guidelines.

Tinkle et al. (2016) found that those who stated that they did not have the necessary facilities and time to implement the CPGs had lower rates of compliance with the CPGs than those who did not state. This finding is consistent with our research's indicating there is an inverse relationship between organizational barriers and the use of CPGs.

The results of regression analysis conducted to reveal the determinants of the use of CPGs of physicians showed that the frequency of use of CPGs was affected by the openness to experience and extraversion personality traits, the positive and negative attitudes towards CPGs and individual barriers

regarding the use of CPGs. There are studies in the literature that support these research findings. Parallel to findings of this study, Kim et al. (2010) concluded that the degree of awareness and habit of CPGs was the most important predictor of using CPGs. The study conducted by Hsiao and Chen (2015) also found that the most important factor affecting physicians' intention to use CPGs was the attitude of physicians towards CPGs while the perceived benefit was also another important factor. In the study conducted by Formoso et al. (2001), it was reported that the working environment and organizational arrangements had an important role in shaping the attitudes of the physicians towards the CPGs and the implementation of the CPGs.

5. CONCLUSION AND RECOMMENDATIONS

Physicians who provide health services considered to be basic human need to society must constantly improve themselves and have knowledge about the innovations in their field in order to be successful in their professions and to be more beneficial to their patients. CPGs are of great importance in ensuring this. As can be seen from the research findings, the personality traits of physicians have an effect on the use of CPGs. In this context, it is very important that physicians have positive personality traits as well as having official documents such as diplomas. It is considered that it will be beneficial for the candidates of physicians to receive the necessary training to gain personality traits that will enable them to perform their profession in the best during the education processes in medical faculties, which is a suitable period for personality development.

The positive attitudes of physicians towards the CPGs and their positive views on the barriers to use of the CPGs also positively influence the use of the CPGs. It is considered that it would be beneficial for physicians, who have a more positive attitude towards CPGs and have more positive views on the CPGs usage barriers, to share their knowledge, skills and experience with CPGs with other physicians.

It was determined that organizational barriers were perceived by physicians as the most important barriers in the use of CPGs. Therefore, it might be concluded that time planning, providing the necessary infrastructure and materials to implement the guidelines, encouraging physicians to use appropriate strategies for the use of guidelines, being informed about guidelines and providing consensus among physicians regarding the use of CPGs may be effective in order to increase the use of CPGs by physicians.

Considering the relationships between the use of CPGs and the personality traits of physicians, their attitudes towards the CPGs and their views on the barriers to use the CPGs, it is important for physicians to develop positive attitudes towards CPGs and positive perspectives on the CPGs usage barriers. In order to increase the awareness of physicians about the CPGs, it might be recommended to increase physicians' compliance with the CPGs and to ensure that they have a more positive perspective

about the CPGs. It is considered that it would be beneficial to ensure physicians' participation in CPGs development processes, and to approve the developed CPGs by a reputable institution or organization trusted by physicians. It also might be necessary to include medical specialty associations in CPGs development processes, to support physicians for the use of CPGs, to persuade physicians that CPGs will improve health care as well as convincing of physicians on CPGs are feasible and not an obstacle to physician autonomy.

It is appropriate to consider that the barriers to the use of CPGs may differ according to the branches, titles and departments of physicians. For this reason, it is important to determine the barriers on a local basis and to eliminate them. Then, it might be useful to organize the strategies to increase the use of CPGs.

Hospital management should provide more consultancy to the physicians about the benefit of CPGs in order to increase the positive attitudes of physicians towards CPGs. Hospital management should also spend more effort to reduce or eliminate the negative attitudes and barriers to use of CPGs among physicians by planning CPGs training activities and evaluating and showing the positive results of increased utilization of CPGs in the short and long term through feedback.

Developing two new scales, which are PAACPGs and CPGsUB, is considered to be a contribution of this study to the literature on CPGs. Although there are studies studying different aspects of CPGs and the barriers in front CPGs, there has been no study merging different aspects of CPGs into a single measurement tool. Reliability and validity of these developed scales indicated that these scales can be used to evaluate the CPGs and find barriers in front of using CPGs for successful implementation by researchers interested in CPGs.

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