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THE VALIDITY AND RELIABILITY OF THE PATIENT-PHYSICIAN INTERVIEW SKILL EVALUATION FORM IN FIVE STEPS

BEŞ ADIMDA "HASTA HEKİM GÖRÜŞME BECERİSİ DEĞERLENDİRME FORMU" GEÇERLİK GÜVENİRLİĞİ

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Abstract

Objective: Developing basic and clinical communication and clinical reasoning skills is crucial in facilitating medical school students' future medical practice. The path to these skills` development goes through conducting patient-physician interviews. This research aims to conducted to determine the validity and reliability of the Patient-Physician Interview Skill Evaluation Form(P-PISEF) to be used in performance-based tests in the evaluation of patient-physician interview skills.
Methods: This study has a descriptive and methodological design and was carried out in June-December 2021. The data were collected from the performance of 197 students with the evaluation of 18 faculty members using the developed form. Explanatory and confirmatory factor analyses, Cronbach's alpha and item the total score was analyzed.
Results: The distribution of the eighteen lecturers (38.88%) was associate professors. P-PISEF, comprising 46 articles, five main sections, and seven components. Lecturers were evaluated in a certain order with over 70% compliance. Over 90% of evaluators evaluated P-PISEF similarly. The Cronbach's Alpha (α) was found at 0.793. The KMO value in this study is 0.733, and the data is moderately adequate for analysis. The result of the Bartlett's test was 5983.586 (p<0.05). This measurement shows that the variable we are measuring is multivariate in the sample parameter (specialty, career step, etc.). The total variance explained in this study was 57.577.
Conclusion: P-PISEF is an evaluation tool that can be used in patient-physician interview simulations of medical students. The results help curriculum planners to arrange programs that address the development of medical interview skills more effectively.

Keywords: *Patient-physician interview skill, validity, reliability, skill evaluation form.*

Öz

Amaç: Tıp Fakültesi öğrencilerinin gelecekteki tıp uygulamalarını kolaylaştırmak için temel ve klinik iletişim ve klinik akıl yürütme becerilerini geliştirmek çok önemlidir. Bu becerilerin gelişiminin yolu hasta-hekim görüşmelerinden geçer. Bu araştırma, hasta-hekim görüşme becerilerinin değerlendirilmesinde performansa dayalı testlerde kullanılacak Hasta-Hekim Görüşme Becerisi Değerlendirme Formu'nun (P-PISEF) geçerlik ve güvenirliğinin belirlenmesi amacıyla yapılmıştır.
Yöntem: Betimsel ve metodolojik bir desene sahip olan bu çalışma, Haziran-Aralık 2021 tarihlerinde gerçekleştirilmiştir. Veriler, geliştirilen form kullanılarak 18 öğretim üyesinin değerlendirmesi ile 197 öğrencinin performansından toplanmıştır. Açıklayıcı ve doğrulayıcı faktör analizleri, Cronbach's alpha ve madde toplam puanları analiz edilmiştir.
Bulgular: Değerlendirme yapan öğretim üyelerinin %38,88 doçent öğretim üyesi idi. Değerlendirme formu (P-PISEF) 46 madde, beş ana bölüm ve yedi bileşenden oluşmaktadır. Öğretim üyeleri, %70'in üzerinde uyum ile öğrencilerin becerilerini belirli bir sırayla değerlendirmiştir. Değerlendiricilerin %90'ından fazlası P-PISEF'i benzer şekilde kullanarak değerlendirmiştir. Cronbach's Alpha (α) 0,793 olarak bulunmuştur. Bu çalışmadaki KMO değeri 0,733 olup, veriler analiz için orta düzeyde yeterlidir. Bartlett testinin sonucu 5983,586 (p<0,05) idi. Bu ölçüm, ölçmekte olduğumuz değişkenin örnek parametrede (uzmanlık, kariyer adımı vb.) çok değişkenli olduğunu göstermektedir. Bu çalışmada açıklanan toplam varyans 57,577'dir.
Sonuç: P-PISEF tıp öğrencilerinin hasta-hekim görüşme simülasyonlarında kullanılabilecek bir değerlendirme aracıdır. Sonuçlar, müfredat planlayıcılarının tıbbi görüşme becerilerinin gelişimini daha etkin bir şekilde ele alan programlar düzenlemesine yardımcı olur.

Anahtar Kelimeler: *Hasta hekim görüşme becerisi, geçerlik, güvenirlik, beceri değerlendirme formu.*

Introduction

Developing basic and clinical communication and clinical reasoning skills is crucial in facilitating medical school students' future medical practice. Students need to gain experience in real-like environments to obtain optimal application areas for practicing their professional skills. The path to these skills` development goes through conducting patient-physician interviews.[1] In the past 30 years, the courses on anamnesis and communication skills have become the corner stones of medical education.[2] Communication skill courses are mainly conceived in small group activities involving role-playing and simulation.[3] Examination methods used in education, such as tests with multiple-choice, short-answer, true/false, matching, or gap-filling questions, are inadequate to test problem-solving, critical thinking, analytical thinking, decision making, communication, and clinical reasoning skills. Concerning the evaluation of ability to apply, specifically in training patient-physician interview skills, there are recommendations pointing towards performance-based evaluation methods.[4] Students` evaluation in real-like environments is carried out objectively based on the performance during the portrayal of the skills` application. Valid, reliable, cost-effective, practical, fair and sustainable evaluation forms should be used in these evaluatios.[5] Evaluation forms are standard checklists, in which the activities comprising the task required from the student are expanded in steps. The evaluator can score the student's performance through these activity steps.[6]

The importance of evaluating students is emphasized in the accreditation standards documents of the World Federation for Medical Education (WFME), Global Standards for Quality Improvement: Basic Medical Education (BME), the Association of Medical Schools in Europe (AMSE), the Accreditation Council for Graduate Medical Education (ACGME), National Medical Education Accreditation Board (UTEAK). According to these institutions, in addition to the theoretical knowledge of the students, their professional skills, attitudes and behaviours should be tested with multiple assessment methods.[7-9]

Different evaluation tools are used to evaluate the patient-physician interview skills of students.[10] Some of these evaluation tools are Calgary–Cambridge Guides,[11] Interview Rating Scale,[12] Maastricht History-Taking and Advice Checklist (MAAS),[13] Brown Interview Checklist (BIC)[14] and Communication and Interpersonal Skills Questionnaire (ComCare).[15]

This research aims to conducted to determine the validity and reliability of the Patient-Physician Interview Skill Evaluation Form (P-PISEF) to be used in performance-based tests in the evaluation of patient-physician interview skills.

Methods

Study Design and Participants

This study has a descriptive and methodological design. This research was carried out in June-December 2021. In this research, an evaluation form has been developed to be used in the evaluation of performance.

Development Process of the Patient Physician Interview Skill Evaluation Form

Patient-Physician Interview Skills Evaluation Form (P-PISEF)

In this study, the development stages of the measuring tool were carried out as follows.[16]

1. Item Pool Stage
2. Expert Opinion Stage
3. Pilot Trial Stage
4. Factor Analysis Stage
5. Reliability Calculation Stage

1. Item Pool Stage:

Firstly, the researchers reviewed the literature to develop forms and examined measurement tools used in previous studies. First, the literature was reviewed to develop the forms and the measurement tools used in previous studies were examined. Using the literature, the researchers identified observational topics related to patient-physician interview skills.[1-3, 17, 18] Seventy items were determined as the subject of observation. Four consecutive meetings among researchers led to a consensus on the items, which were soon to be grouped in line with their conceptual similarities and form the P-PISEF. The form comprises four sections and 54 items that evaluate verbal communication, non-verbal communication, information collection, the self-assessment form.

2. Expert Opinion Stage:

Experts can decide to what extent a measuring tool can measure its measurand and what characteristics it measures.[16] First and foremost, in this study, we consulted the experts in this field and content validity and face validity are based on their opinion.

After implementing the first stage, we arranged and re-phrased the statements from the item pool to encompass the patient-physician interview according to the item writing rules. We did a pre-selection on the items in line with the opinions of seven lecturers who are experts in their fields. We evaluated the revised items under the topics of five sections and seven separate components. During these procedures, the experts supervised the evaluator's proper comprehension of every single item.

As a result of the experts` feedback, we reduced the 54 items comprising the form to 46. Thus, the draft form was ready for the trial application phase (Appendix 1).

We prepared the "Patient-Physician Interview Skill Evaluation Form Procedure Directive" to use in the pilot trial and real trial and shared it with lecturers before evaluation.

3. Pilot Trial Stage:

We collected research data via the patient-physician interview skill evaluation form. The patient-physician interview skills evaluation form was pilot trialed by watching the patient-physician interview video of 10 volunteer students. After the students finished their interviews, they watched the video and filled out a self-assessment form. We shared the self-assessment forms with the lecturers who made the evaluation parallelly with the video recording.

After the pilot application, the "patient-physician interview skills evaluation form" was completed and consisted of 46 items, five sections, and seven components.

Evaluation of the Data Collection Form

The P-PISEF was used to evaluate videos and self-assessment forms uploaded to the online Learning Management System of students attending a Faculty of Medicine and taking the patient-physician interview skills course.

The course takes place 4 hours a week for 10 weeks. Second-year students who participated in basic communication skills, clinical communication skills, and professional skills courses had a patient-physician interview at the student outpatient clinic during appointment hours. The interviews were conducted simultaneously in five outpatient clinics by teams of five students. In these teams, one of the students played the physician's role, one played peer-simulated patient's role, and three participated in interviews as observers. In subsequent interviews, the students exchanged their roles: each student was allowed to play the physician's and peer simulated patient roles once, and the observer roles three times. The student playing the physician's role was required to prepare the outpatient clinic, initiate video recording, meet the patient, take anamnesis, and make general situation assessment. The student playing the peer-simulated patient's role was informed that they could improvise if the answer to the question was not specified in the scenario. The observation of students were required to monitor the interview and give feedback to the interviewing physician at the end. Once the interview was over, the student playing the physician's role took the video recording, wrote the self-evaluation report, and participated in the feedback session held the following week. In the feedback session, the patient-physician interview experience was evaluated using discussion, reflection, and feedback techniques. At the end of the course, the student uploaded the patient-physician interview video and self-assessment form to the system for evaluation as homework.

The P-PISEF comprises 46 items that describe the medical interview skill content and process, expressed in behavioural terms and independent of the complaints presented by the patient. Each step is evaluated based on whether it was completed by the expressions "did" or "did not".

The sections are grouped into "information collection", "ending the interview", "self-assessment form evaluation", "verbal communication skills", "non-verbal communication skills", each representing theoretically defined medical interview skills.

The "information collection" section consists of two subsection (15 items). It measures students' ability to clarify the patients' complaints and discover the background perspective of the patient visiting the doctor. This type of inquiry provides that the physician hypothesizes about the patients' complaints, tests these hypotheses, and identifies the complaints in medical terms. This is the patient-centred part of the medical interview.

There are three items in the "Ending the conversation" section, in which we tested the students' ability to inform the patient about the next steps to take, to question and perceive the patient's expectations from the physician, and to send off the patient gently by finishing the interview.

There are four items in the "Self-assessment form evaluation" section, in which we evaluated the student's reflection on "objectively evaluating the interview, noticing its shortcomings and strengths, and whether they created learning goals for themselves."

The "Non-verbal communication skills" section (14 items) comprises patient welcomeness and body language subsections, specifically evaluating skills (eye contact, smile, sitting position facing the patient, etc.) exhibited by the student while interviewing the patient.

In the "Verbal communication skills" section, there are ten items that evaluate the student's questioning skills and question diversity from the moment of welcoming the patient to the end of the interview.

The maximum score of the evaluation of the form is 46 points.

4. Factor Analysis Stage:

We used the IBM SPSS Statistics for Windows (Version 25.0) and Amos (Version 24.0) statistical package program to evaluate the data. Data were analyzed by using Statistical Package for Social Sciences version 25.0 (SPSS 25.0) program and Amos (Version 24.0) statistical package program. The researchers examined the sample adequacy via the Kaiser-Meyer Olkin (KMO) and Bartlett tests before the analysis of the scale's construct validity. Before analyzing the construct validity of the scale, Kaiser-Meyer Olkin (KMO) and Bartlett tests were conducted to examine sample adequacy. We determined the scale's factor structure via the Principal Components Analysis (PCA) from Exploratory Factor Analysis (EFA) methods. The factor structure of the scale was determined by principal component analysis (PCA), one of the exploratory factor analysis (EFA) methods. Finally, we created the appropriate Structural Equation Model (SEM) for Confirmatory Factor Analysis (CFA), checked the accuracy of this model using the fit index values, and determined the relationships between the concepts of the scale.

Finally, an appropriate Structural Equation Model (SEM) was created for Confirmatory Factor Analysis (CFA), and the accuracy of this model was checked with fit index values, and the relationships between the concepts of the scale were determined.

5. Reliability Calculation Stage:

Regarding the psychometric properties of our form, we calculated the internal consistency items the internal consistency (reliability) between the items was calculated by Cronbach's Alpha coefficient, Tukey`s Test of Additivity, and sample size adequacy. There are several statistical reliability analyses in the literature to determine the internal consistency. The most commonly used of these analyses is the Cronbach's Alpha coefficient.[19] Generally, the sufficient value of Cronbach's Alpha coefficient should be over 0.60.[20] In some studies, over 0.50 is considered an acceptable value.[20]

The research was carried out during the 2020-2021 academic year with the participation of second-year students at the Faculty of Medicine. The population of the study consists of the students of the faculty of medicine. However, when the sample calculation of the study is made;

$$n_0 = \frac{Nt^2pq}{d^2(N-1)+t^2pq} = \frac{1125(1{,}96)^2 0{,}6 * 0{,}4}{(0{,}05)^2(1125-1)+(1{,}96)^2 * 0{,}6 * 0{,}4} \cong 284$$

It has been determined that 284 people will be reached with 95% confidence from 1125 people. Since the study was on a voluntary basis, 197 people who participated in our study in total formed the sample of the study. The students attending the patient-physician interview skills course, 197 of the second-year students were involved in the study. Patient-physician interviews include students in the role of patient and physician creating video recordings by acting according to the simulated patient scenario and filling out the self-assessment form after watching the video. Eighteen lecturers made the evaluation.

Results

The distribution of the eighteen lecturers who evaluated the students is 5.55% professors (n=1), 38.88% associate professors (n=7), and 55.55% lecturers (n=10). 50% of them were male (n=9). The distribution of the lecturers' medical specialties was 4 in surgical medicine, 9 in internal medicine and 5 in pre-clinical medicine. The evaluation results of the lecturers are presented in Table 1. Lecturers were evaluated in a certain order with over 70% compliance. Over 90% of evaluators evaluated P-PISEF similarly.

Factor variances and factor loadings related to the P-PISEF are presented in Table 2. The KMO test examines whether the distribution suffices for factor analysis and the range of 0.70–0.80 is considered moderate.[22] The KMO value in this study is 0.733, and the data is moderately adequate for analysis. The Bartlett's Test of Sphericity is used to assess whether the correlation matrix is suitable for factor analysis. If the values obtained as a result of the Bartlett's test are statistically significant, the data are considered suitable for factor analysis.[23] The result of the Bartlett's test was 5983.586 ($p<0.05$). This measurement shows that the variable we are measuring is multivariate in the sample parameter (specialty, career step, etc.). According to these results, this is a scale with structure validity of a normal distribution, sufficient correlation between items and sufficient sample to perform factor analysis.

In this study, we did not limit the number of factors, therefore we measured factors with an eigenvalue greater than 1.50. Factors with an eigenvalue greater than or equal to 1 are considered important factors in factor analysis.[24]

The total variance explained in this study was 57,577. Variance rates ranging from 40% to 60% are considered ideal in factor analysis.[25] The amount of variance obtained in this research is sufficient.

As shown in Table 2, the factor loadings of the questions in the first component ranged from 0.482 to 0.930, in the second component ranged from 0.412 to 0.916, in the third component ranged from 0.525 to 0.884, in the fourth component ranged from 0.505 to 0.873, in the fifth component ranged from 0.769 to 0.887, in the sixth component ranged from 0.521 to 0.795, and in the seventh component ranged from 0.720 to 0.782.

The Cronbach's Alpha (α) was found at 0.793 and was deemed sufficient because it was over 0.70. Therefore, it can be said that the seven components of the Patient-Physician Interview Skill Evaluation Form measure separate characteristics. The form we create according to these results is a reliable measurement tool.

The model obtained for the Patient-Physician Interview Skills Evaluation Form (ε2= 1897,909, df= 967) consists of seven components. The fit indices for this model have shown that the model is compatible (Table 3).

Judging from the fit indices in Table 3, we can say that the model is acceptable and had good fit index values.[19,20] The tested model is presented in Fig. 1. According to Fig.1 Skill Evaluation Form has the components F1, F2, F3, F4, F5, F6, and F7. The relationships that emerged as a result of the analysis after the corrections were made are given in Table 3. The relationships between the components of the P-PISEF were examined and presented in Table 4.

According to Table 4, latent variables account significantly and efficiently for the "Ending the Conversation" (F3) component of P-PISEF ($p<0.05$). Latent variables account significantly and efficiently for the structural evaluation of the "Nonverbal communication skills" (F6) component with P-PISEF ($p<0.05$).

IFI, CFI, GFI, and TLI values were low due to incompatibilities between P-PISEF and components in this table. The reason the RMSEA value is compatible is that the components are compatible among themselves.

In general, when these results are examined, P-PISEF is a reliable and valid evaluation tool.

Discussion

The validity and reliability of the Patient-Physician Interview Skills Evaluation Form (P-PISEF) are important in objectively evaluating and demonstrating the development of the students' skills such as communication, medical history taking, clinical reasoning and critical thinking. This form meets validity and reliability standards and is ready for future studies to evaluate the patient-physician interviewing skills of medical school students.

Different evaluation tools in the literature measure the patient-physician interview skills of students.[10, 26] For example, Calgary–Cambridge Guides,[11] Interview Rating Scale,[12] Maastricht History-Taking and Advice Checklist (MAAS),[13] Brown Interview Checklist (BIC)[14] and Communication and Interpersonal Skills Questionnaire (ComCare)[15] are some of them.

Calgary–Cambridge Guides was developed to describe effective patient-physician communication skills and provide an evidence-based structure for analyzing and teaching these skills in medical interview.[11] Calgary-Cambridge Guides provides an algorithm for patient-physician communication skills. The P-PISEF, on the other hand, is a tool by which medical interview skills can be evaluated.

The Interview Rating Scale consists of 16 variables titled "Commencement, Seating, Posture, Eye contact, Interruptions, Facilitation, Relevance, Psychosocial, Empathy, Silence, Personal, Leads, Warmth, Questioning, Clarity, Conclusion".[12] The Patient-Physician Interview Skills Evaluation Form consists of five sections and seven components. The article "Personal and social issues" in the Interview Rating Scale evaluates the student's willingness to discuss the emotional or personal problems raised by the patient. It can be said that P-PISEF, which we have developed, has a similar evaluation item under "establishing a relationship compatible with the nature of the patient's complaints and the patient's mood". All other items are evaluated comprehensively and understandably in P-PISEF.

The Maastricht History-Taking and Advice Checklist (MAAS) comprises 64 behavioural expressions and five categories used to evaluate students' interview skills. These categories are called the ability to investigate the causes of the application to the physician, the ability to take a medical history, problem-solving skills, the ability to structure the interview and basic interview skills.[13] These five categories coincide with the P-PISEF's information collection, ending the conversation, verbal communication, and non-verbal communication skills.

Brown Interview Checklist (BIC) evaluates 32 basic interview skills or behaviours under the topics "opening", "exploration of problems", "closing", "facilitation skills", "relationship skills". For example, "When investigating the problem, he/she asks "what else" to ascertain all major concerns", "Starts with open-ended questions, ends with specific questions or statements", "Avoids asking more than one question at a time" etc.[14] These question types are also

Table 1. Intraclass correlation coefficient

Evaluator	Intraclass Correlation Coefficient			
	Intraclass Correlation[b]	95% Confidence Interval		
		Lower Bound	Upper Bound	*p*
D1	0.862	0.714	0.956	0.001
D2	0.524	0.038	0.836	0.019
D3	0.752	0.500	0.915	0.001
D4	0.889	0.775	0.962	0.001
D5	0.603	0.198	0.863	0.004
D6	0.862	0.721	0.952	0.001
D7	0.746	0.488	0.912	0.001
D8	0.486	0.338	0.823	0.032
D9	0.724	0.443	0.905	0.001
D10	0.837	0.671	0.944	0.001
D11	0.818	0.166	0.545	0.001
D12	0.745	0.485	0.912	0.000
D13	0.676	0.327	0.895	0.001
D14	0.725	0.446	0.905	0.001
D15	0.937	0.872	0.978	0.000
D16	0.248	-0.561	0.757	0.211
D17	0.878	0.738	0.964	0.001
D18	0.696	0.292	0.927	0.002

included in the verbal communication skills section of P-PISEF. While the second article of BIC makes complaint-oriented assessments, history taking items in P-PISEF evaluate the skills to clarify patient's complaints and to discover the background of the patient's perspective on the disease more comprehensively and clearly. BIC and P-PISEF provide concrete, detailed and behavioural feedback.

Communication and Interpersonal Skills Questionnaire (ComCare), from all patient-physician interview skills, evaluates students' "Communication" and "Interpersonal skills".[15,26] This form consists of 8 items: "using understandable language", "responding to questions and needs satisfactorily", "explaining the next diagnostic or treatment steps in a comprehensible way", "listening attentively", "showing a sincere interest in the patient as a human being", "being caring and showing compassion", "behaving in a way that made the patient feel comfortable around him/her", and "satisfaction with the consultation". All items are evaluated in one component.[15] Although EFA was performed in the development of the ComCare questionnaire, its single-factor structure has not been verified because the CFA has not been performed. This form consists of two parts: ComCare P (simulated patients) and ComCare D (a self-assessment version). One form is filled out by the physician and the other by the patient. The patient-physician interview skill evaluation form meets all eight items and also ensures the evaluation of the student hypothesizing about the patients' complaints, testing these hypotheses, identifying the complaints in medical terms and self-evaluating.

The "Self-assessment Form Evaluation" section is not available on the Interview Rating Scale, MAAS and BIC. ComCare D is a questionnaire in which the student compiles a self-assessment. P-PISEF enables students to perform critical assessments of their performance to achieve learning goals and evaluate patient-physician interview skills. With the "Self-assessment Form Evaluation" section, the lecturer also evaluates the student's ability to self-evaluate.

Conclusion

Patient-physician interviewing skills are some of the most important skills in medical practices that future physicians must have to diagnose and treat the patient as a "person beyond the symptoms". These skills need to be taken into serious account and evaluated thoroughly in order to be taught to the student. This requires valid and reliable evaluation tools. The Patient-Physician Interview Skill Evaluation Form is an evaluation tool that can be used in patient-physician interview simulations of medical students. The evaluation form (P-PISEF), comprising 46 articles, five main sections, and seven components, is a valid, reliable, fair, standardizing tool. It should also be a study topic for future research and applied to different samples to test whether the form is valid and reliable. Especially in other medical schools, in faculties that teach in different languages, or train other health professionals, it is recommended to apply it by conducting matching studies. The results help curriculum planners to arrange programs that address the development of medical interview skills more effectively.

Table 2. Cumulative factor variances and factor loadings for the patient physician interview skill evaluation form

	Factor Loadings						
	1. Component	2. Component	3. Component	4. Component	5. Component	6. Component	7. Component
23-Greeting the patient (hello, welcome)	0.706						
24-Introduction	0.482						
25-Asking about the patient's name	0.774						
26-Asking about the patient's age / occupation	0.930						
27-Using understandable language	0.926						
28-Using open-ended questions appropriately	0.489						
29-Asking investigative questions	0.595						
30-Using closed-ended questions appropriately	0.512						
31-Speaking in a soft and calm tone	0.704						
32-Speaking in an understandable tone and speed	0.578						
1-Questioning the main complaints of the patient and the characteristics of the complaints		0.591					
2-Questioning the timeline of the complaints		0.916					
3-Questioning the duration of the complaints		0.896					
4-Questioning the frequency of complaints		0.813					
5-Questioning the persistency of the complaints		0.724					
6-Questioning the variability of the complaints under any particular circumstance		0.754					
7-Questioning organ system complaints with appropriate questions		0.426					
8-Taking notes without interrupting the conversation		0.476					
9-Summarizing the collected information		0.412					
10-Allowing the patient to make additional explanations (if any)		0.444					
33-Standing up to greet the patient			0.884				
34-Shaking hands with the patient			0.525				
35-Welcoming the patient and showing a seat			0.747				
36-Appearing suitable for a physician (dressed in a white coat, clean)			0.758				
37-Actively listening to the patient			0.869				
38-Creating a warm and friendly atmosphere			0.857				
39-Establishing a relationship compatible with the nature of the patient's complaints and the patient's mood			0.690				
40-Leaning on the chin or cheek while listening to the patient				0.538			
41-Playing with the hair while listening to the patient				0.506			
42-Crossing arms while listening to the patient				0.505			
43-Smiling				0.530			
44-Sitting in a position facing the patient				0.816			
45-Making eye contact				0.873			
46-Expressing understanding, acknowledging				0.810			
19-Objectively self evaluating the patient-physician interview.					0.887		
20-Recognizing her/his shortcomings					0.769		
21-Recognizing her/his strengths					0.828		
22-Setting improvement goals					0.772		
11-Questioning the personal characteristics of the patient						0.795	
12-Questioning the patient's medical history						0.743	
13-Questioning the medications used by the patient						0.521	
14-Questioning the patient's habits						0.608	
15-Questioning the patient's family history						0.783	
16-Informing the applicant/patient on the next steps of the diagnosing and /treatment							0.766
17-Asking feedback on wether the patient's expectations are met							0.720
18-Concluding the interview and sending the applicant/patient in a courteous manner							0.782
Eigenvalues	7.056	4.907	3.937	3.376	2.712	2.578	1.919
% of Variance Explained	11.203	10.641	10.228	7.388	6.961	6.247	4.910
Croncbachs'Alpha (α)	0.845	0.776	0.887	0.734	0.857	0.741	0.750

Total Variance Explained =57.577
Kaiser Meyer Olkin (KMO) Measure of Sampling Adequacy =0.733
Bartlett`s Test of Sphericity =5983.586 ***p*=0.001****
Croncbachs'Alpha (α)=0.793

Table 3. Statistical values related to the fit indices of structrual equation model

Fit Indices	Good Fit	Acceptable Fit	Fit Index Values of the Model
(χ^2/sd)	≤ 3	≤ 4-5	1,963**
RMSEA	≤ 0.05	0.06-0.08	0,068*
SRMR	≤ 0.05	0.06-0.08	0.044**
IFI	≥ 0.95	0.94-0.90	0,932*
CFI	≥ 0.97	≥ 0.95	0,929*
GFI	≥ 0.90	0.89-0.85	0,866*
TLI	≥ 0.95	0.94-0.90	0,917*

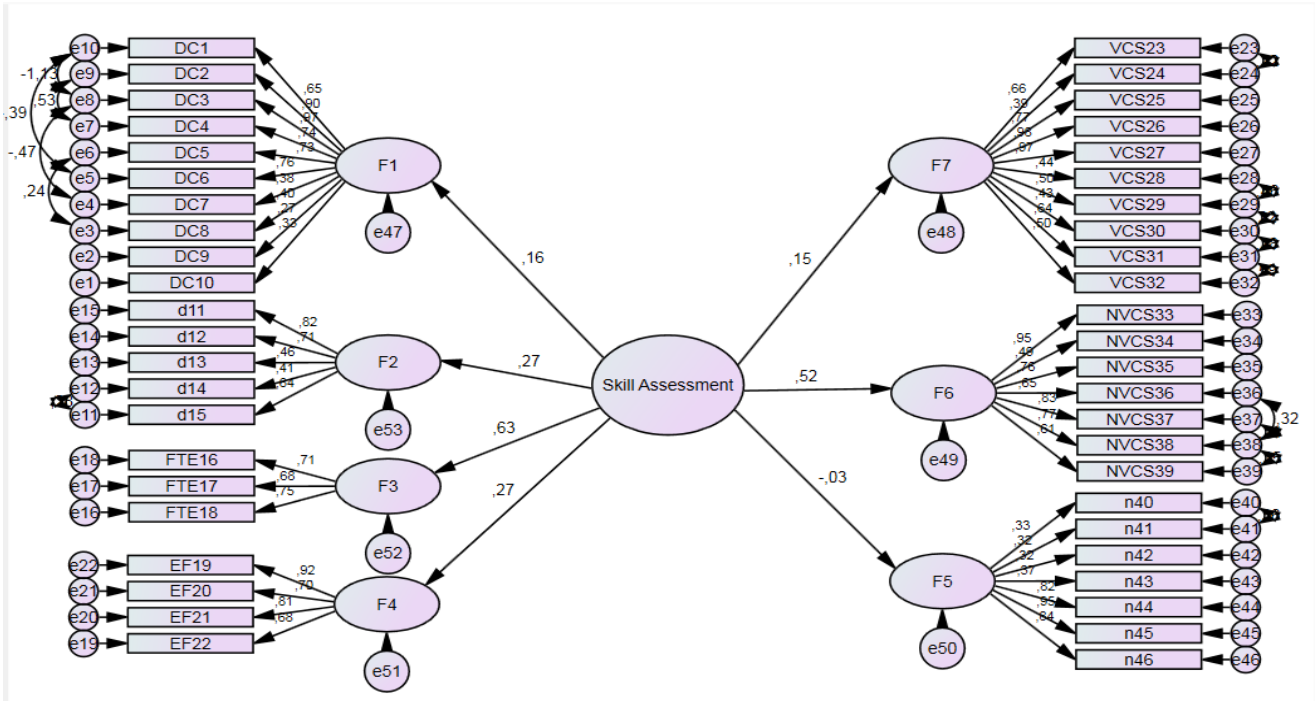
*: Acceptable fit; **Good fit

Table 4. Structural equation model regression weights Formed After Corrections Made According To Modification Indices

Measure			Estimate (β)	Standart Error	Critical Value	p
F1	<-->	Information collection	0.383	0.292	1.312	0.019*
F2	<-->	Information collection	1.000			
F3	<-->	Ending the conversation	3.142	1.594	1.972	0.049*
F4	<-->	Self-assessment form evaluation	2.178	1.276	1.707	0.048*
F5	<-->	Non-verbal communication skills	-0.034	0.122	-0.283	0.017*
F6	<-->	Non-verbal communication skills	1663	0.821	2.026	0.043*
F7	<-->	Verbal communication skills	0.240	0.193	1.243	0.014*

*p<0.05; **p<0.01

Figure 1. SEM Model for the Relationships Between the Seven Components of the Patient-Physician Interview Skill Evaluation Form



Limitations
This research was carried out with a limited number of students of a single faculty.27 It is recommended to repeat the research with different groups of students in different faculties.

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Conflict of Interest
The author(s) declared no conflicts of interest concerning the authorship and/or publication of this article.

Compliance with Ethical Statement
The research was approved by the İzmir Katip Çelebi Ethics committee with the date 24.06.2021 and number 0340.

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Study idea/Hypothesis: FIT, HŞ; Data preparation: FIT, AB, HS; Data analysis: FIT, AB, HS, HŞ, MAT; Manuscript writing: FIT, AB, HS

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