Original Article

Evaluation of a scale for assessing medical students' attitudes to the social dimensions of health and preventive services

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Abstract

Objective: The purpose of this study was an evaluation of the reliability and validity of a scale for medical students' attitudes towards the social dimensions of health and preventive services. **Method**: 255 (72.9%) out of 350 fourth-year and 304 (83.9%) out of 83.9% of 362 sixth-year students in Ege University Medical Faculty participated the study at the beginning of the 2005-2006 academic-year. The reliability and validity of the scale, which was developed by the researchers, were assessed by Cronbach-alpha coefficients and factor-analysis. **Results:** Three factors emerged (the importance of preventive services; the importance of the social dimensions of health; responsibilities in preventive services) from the factor analysis. These factors explained 48.4% of the total variance. Cronbach alpha value was 0.77. **Conclusion:** The scale developed and evaluated in this study is a reliable, valid and practicable tool which can be used in the assessment of medical students' attitudes.

Key Words: Undergraduate medical education, attitude of medical students, preventive health services, social dimension of health, validity

Öğrencilerin sağlığın sosyal boyutu ve koruyucu hizmetler ile ilgili tutumlarını belirleyen bir ölçeğin değerlendirilmesi

Özet

Amaç: Bu çalışmanın amacı tıp öğrencilerinin sağlığın sosyal boyutu ve koruyucu hizmetler ile ilgili tutumlarını belirlemeye yönelik bir ölçeğin güvenilirlik ve geçerliliğinin belirlenmesidir. **Yöntem:** Çalışmaya 2005-2006 öğrenim yılının başında dördüncü sınıfta olan 350 öğrencinin 255'i (% 72.9) ve altıncı sınıf olan 362 öğrencinin 304'ü (% 83.9) katılmıştır. Araştırıcılar tarafından geliştirilmiş olan ölçeğin güvenilirlik ve geçerliği Cronbach-alpha değeri ve faktör analizi aracılığı ile değerlendirilmiştir.

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Bulgular: Faktör analizi sonucunda üç tema belirlenmiştir (koruyucu hizmetlerin önemi, sağlığın sosyal boyutunun önemi, koruyucu hizmetlerde sorumluluklar). Faktörler toplam varyansın % 48.4'ünü açıklamış, Cronbach-alpha değeri 0.77 olarak bulunmuştur. **Sonuç:** Bu çalışmada geliştirilen ve değerlendirilen ölçek tıp öğrencilerinin tutumlarının ölçülmesi amacıyla kullanılabilecek, güvenilir, geçerli ve pratik bir araçtır.

Anahtar Kelimeler: Mezuniyet öncesi tıp eğitimi, tıp öğrencilerinin tutumları, koruyucu sağlık hizmetleri, sağlığın sosyal boyutu, geçerlilik

Introduction

The "Integrated Approach to Health" defined by the World Health Organization at the Alma Ata conference in 1978 has increasingly been adopted by medical faculties in recent years and the need to educate doctors who can evaluate health in terms of social dimensions is frequently questioned[1,2] Education programmes that approach health biomedically are criticised and it is stated that these programmes cannot make medical students gain appropriate attitudes to responsibilities that they are going to undertake.[3,4] Since the attitudes to the social dimensions of health and preventive methods that students acquire during their education establish their future professional lives, it is of great importance to study how the attitudes flourish in the course of the education.[5-7] Assessing attitudes is difficult since fundamental attitudes within the medical profession are heavily influenced by a number of factors, such as the perception of social issues prior to period of the education, the experiences they go through and role models they come across throughout their education and are also influenced by the health care system of the country. [6-10]

Leinster[10] suggested that social accountability as an outcome of medical schools must be measured at institutional and individual levels. According to Leinster[10] attempts to measure outcomes at a school level can be referred to as evaluation, while the attempts to measure at an individual level can be called assessment. Ege University Medical Faculty (EUMF) introduced a community-oriented curriculum in 2001 as a shift away from a traditional discipline-based curriculum. We have reported an evaluation of the new curriculum according to the level of achievement for learning objectives related to community medicine and to the social dimension of health.[11] Considering the framework of Leinster[10], our attempt can be called an assessment. However in our assessment the question "has this curriculum achieved the desired effect on the attitudes of our students?" is still not answered. In order to be able to assess the attitudes of our students with regard to the social dimensions of health and preventive services we developed a new scale. The purpose of this study was to evaluate the reliability and validity of this scale.

Method

Research group

All fourth- and sixth-year medical students in EUMF were invited to participate the study at the beginning of 2005-2006 academic year. The questionnaires, which were self-administered, did not include the names of the students for the sake of confidentiality. Since students were told that participation was voluntary, we reached 255 (72.9%) out of 350 fourth-year and 304 (83.9%) out of 362 sixth-year students.

Scale Development

The scale was developed in three-phases.

The first phase: The students' attitudes to the social dimensions of health and preventive services were defined as forming the conceptual basis of the attitude scale in the first place. The social dimensions of health were defined as the

students' awareness of the importance of social factors in determining whether a person is ill or healthy. Preventive services related to the students' recognition of the role of preventive services in maintaining health and in adopting the methods this implies.A question repository with 41 items was composed by carrying out a literature review.[5,8,12,13] Thereafter, a research team came together and evaluated these items in terms of measuring /assessing "the importance of social factors as determinant of health" and measuring "the awareness regarding the role of preventive medicine in the maintenance of health". In addition, some items in the question repository were unified and the large part of it was expressed again. As a result, the number of the items was reduced to 28.

The second phase: A panel was organized with the participation of four general practitioners, and seven lecturers in the developmental process of public health education programme (two of practitioners taking part in research team at the same time). The participants were asked to choose 20 items which were the most appropriate ones for the established criteria mentioned above. The items which were not put on the list by any participant were excluded from the repository and the inclusion? of the remainder were reviewed. At the end of this phase, the first form of the scale included 20 items, which were to be answered in accordance with the Likert Scale (1: strongly disagree; 2: disagree; 3: neither agree nor disagree; 4: agree; 5: strongly agree), was completed.

The third phase: The scale was applied to 50 students from the 6th year in 2005 and the Cronbach-alpha reliability coefficient was specified as 0.64. The lecturers discussed the scale with groups made up of five students, some of the items were re-expressed in conformity with the students' feedback and six items were excluded from the scale. A scale with 14 items was proposed/ developed, with seven items measuring attitudes about the

social dimensions of health and seven items testing/measuring preventive services. Ultimately, the evaluation of reliability and validity of the attitude scale with 14 items were implemented for 559 questionnaires.

Statistical Analysis

To check the reliability and validity of the instrument's structure and identify separate factors that make up the questionnaire, Cronbach's alpha coefficients were calculated and an exploratory factor analysis using a Varimax (oblique) rotation was carried out. A Bartlett's test of sphericity and a Kaiser-Meyer-Olkin measure of sampling adequacy were used for performing the factor analysis. A factor was considered as important if its eigenvalue exceeded 1.0. All statistical analyses were executed in SPSS 13.0 package programme.

Results

The fourth- and sixth-year students were similarly distributed with regard to sex, the rural or urban background and perceived level of income of their families (Table 1).

The Kaiser-Meyer-Olkin coefficient, which was calculated as 0.837 (p=0.000), showed that a sufficient number of samples was reached to carry out a factor analysis. The Chi-square test statistics obtained from the BarlettSphericity test were found to be significant (chi-square=990.48; p=0.000) and this result indicated that there are discoverable relationships in the data. Two items that loaded on both factors by > 0.40, indicating a limited ability to discriminate between the two factors, were removed.
As a result of the factor analysis, it was determined that the attitude scale regarding preventive services and the social dimension of health did not have a two-factor but a three-factor structure anticipation and the items belonging to preventive services were divided into two separate factors. The factor load of the items was a part of the scale are shown in Table 2.

Table 1. Some descriptive characteristics of the fourth- and sixth-year students

Sex			
Female		47.4	0.36
Male	45.5	52.6	
	54.5		
The place where the student spent the biggest part *of his/her* life			
Metropol	56.6	54.9	0.38
Others	43.4	45.1	
Perceived level of the income of her/his family		29.2	30.6	0.30
Very good - good	68.0	64.1	
Neither good nor bad	2.8	5.3	
Bad - very bad			

The first factor, "the importance of preventive services" is responsible for 19.5 % of the variant. The other factors under the headings of "the importance of social matters in medical applications" and "the responsibilities in preventive services" account for 16.4% and 12.5% of the total variances, respectively. All factors together account for 48.4% of the total variance.The Cronbach-alpha reliability coefficient of the scale was calculated to be 0.77. The corrected item-total correlation- and Cronbach Alpha values of the factors are shown in table 3.

Discussion

Our main findings are; 1) The attitudes of medical faculty students regarding the social dimension of health and preventive services and can be measured by the scale developed in this study 2) Factor analysis shows that the scale was not two dimensional as it had been estimated but three dimensional.

The fact that the three dimensional structure explained less than 50 % of the total variance indicates that the scale does not have a good construct validity. The first two factors of the scale have comparable Cronbach-alpha coefficients with previously published scales measuring the medical students' attitudes towards community medicine and social aspects of health.[5,6,14] The whole scale with 12 items revealed a higher Cronbach-alpha coefficient which was 0.77. However the last factor (the responsibilities in preventive services) has a quite low level which may depend on the limited number of items connected with that factor. Therefore, its limitations should be taken into account when using the scale.

There are some limitations of the study that should be noted. The possibility of social desirability bias may threaten the validity of our data since we measured the self-reported attitudes. The use of different cohorts in this study can also be criticised, since having different experiences may have affected their attitudes. However, this condition may also strengthen the generalizability of the study outcomes to medical students from different grades.

In order to assess their students' attitudes, medical schools need scales which are comprehensive and valid for their educational environments. Some studies on professionalism have components which are aligned to social accountability. However, they did not assess the broader societal aspects of the doctor's responsibility.[15] There are also reliable and valid scales used in different studies in order to assess the students' attitudes towards topics such as community medicine, social factors, preventive services and care for the underserved populations . However the majority of these studies have been performed in countries which are socioeconomically more developed and/or have a long tradition on community-

oriented medical education such as USA, Australia and New Zealand.[5,6,8,12,14,15] Turkey has still a specialty- and technology- oriented health care system and approaches to health from a narrow biomedical perspective are common in our medical schools. The scale developed in this study has supplied a valid, reliable and easy applicable instrument to measure attitudes in faculties which have similar conditions.

Table 2. Structure of the Scale Developed for Assessing Medical Students' Attitudes towards Social Dimension of Health and Preventive Services

Items	Factor loadings		
	Factor 1	Factor 2	Factor 3
1. I believe that our society as a whole would benefit if much of the money it now pays for therapeutic medicine were allocated to preventive medicine.	0.677	0.075	0.237
2. I think that support of research on disease prevention should be increased, even if this means a moderate reduction in research on disease treatment.	0.648	0.018	0.227
3. I believe primary care practitioners should spend more time educating their patients about how to stay healthy, even though this would leave doctors a little less time for treating illness.	0.642	0.117	0.001
4. I think the primary care practitioner's major responsibility should be to counsel patients on how to avoid illness and maintain good health.	0.565	0.187	0.076
5. In my opinion, our society would be better off if medical science put more emphasis on the promotion of health and less on the treatment of illness	0.506	0.314	0.042
6. I believe that at least half of all patients in general hospitals have health problems related to social factors.	- 0.054	0.794	0.232
7. In my opinion, the importance of social factors in illness suggests that some form of behavioural science program should be included in each year of the medical school curriculum.	0.448	0.633	- 0.047
8. I believe that physicians can learn a great deal from the social sciences regarding the relationship between social stresses and physical illness	0.357	0.632	- 0.040
9. As compared with time spend on the treatment of illnesses, most of the physicians spend less time on the social issues related to health	0.122	0.553	0.424
10. In my opinion, preventive medicine is hard to practice seriously outside of the public institutions	0.027	0.003	0.754
11.I believe that disease prevention is primarily the responsibility of public sector than the responsibility of private sector	0.159	0.105	0.642
12. I believe that as compared with treating disease, activities concerned with health maintenance are *not* allocated sufficient time by most physicians.	0.314	0.256	0.405
% of variance	**19.48**	**16.39**	**12.49**
Eigenvalue	**2.34**	**1.97**	**1.50**

Table 3. Corrected item-total correlation and Cronbach Alpha values of the factors

Factor	Corrected Item-Total Correlation	Cronbach Alpha if Item Deleted	Cronbach Alpha
Factor 1	0.54	0.54	0.65
Factor 2	0.54	0.54	0.68
Factor 3	0.43	0.68	0.43

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Ek. Koruyucu Hizmetler ve Sağlığın Sosyal Boyutu Tutum Ölçeği

1	2	3	4	5
kesinlikle katılmıyorum	katılmıyorum	ne katılıyorum, ne katılmıyorum	katılıyorum	kesinlikle katılıyorum

Tedavi edici tıbba ayrılan paranın bir bölümünün koruyucu hekimliğe ayrılmasının tüm toplumun yarar görmesini sağlayacağına inanıyorum.	
Tedaviye yönelik araştırmaların azalmasına neden olsa bile, hastalıklardan korunmaya yönelik araştırmalara verilen destek arttırılması gerektiğini düşünüyorum.	
Birinci basamak hekimlerinin tedaviye daha az zaman ayırmalarına neden olsa bile, sağlık eğitimine daha fazla zaman ayırmaları gerektiğine inanıyorum.	
Birinci basamak hekimlerinin temel sorumluluğunun hastalıklardan korunma ve sağlığı geliştirme konusunda eğitim vermek olduğunu düşünüyorum.	
Hastalıkların tedavisine daha az, sağlığın geliştirilmesine daha fazla önem verilirse toplumumuz daha sağlıklı olabilir.	
Hastanelerdeki hastaların en az yarısının sağlık sorunlarının sosyal faktörlerle ilişkili olduğunu düşünüyorum	
Hastalıkların oluşumundaki sosyal faktörler tıp fakültesinin her yılında ele alınmalarını gerektirecek kadar önemlidir	
Sosyal stresin hastalıkların oluşumundaki etkisi nedeniyle hekimler sosyal bilimlerden çok şey öğrenebilirler.	
Hekimlerin çoğu tedavi hizmeti ile karşılaştırıldığında sağlıkla ilgili sosyal konulara yeterince zaman ayırmamaktadır.	
Koruyucu hekimliğin kamu sağlık kurumları dışında etkin biçimde gerçekleştirilmesi çok güçtür.	
Sağlığın korunmasında ve geliştirilmesinde temel sorumluluğun özel sektörden çok kamu hizmetlerine ait olduğunu düşünüyorum.	
Tıbbi tedavide teknolojiye verilen ağırlığın giderek artması,koruyucu sağlık hizmetine yeterince önem verilmemesine neden olmuştur	