

## A preliminary study for the development of a scale to assess perceptions about physicians

Tacettin Inandi MD,<sup>1</sup> Nalan Sahin MD<sup>2</sup> and Asuman Guraksin MD<sup>1</sup>

<sup>1</sup>Public Health Department, Medical Faculty, Ataturk University, Turkey

<sup>2</sup>Public Health Department, Medical Faculty, Hacettepe University, Turkey

### Correspondence

Dr Tacettin Inandi  
Ataturk Universitesi Tip Fakultesi  
Halk Sagligi Anabilim Dalı  
25240-Erzurum  
Turkey  
E-mail: tinandi@atauni.edu.tr

**Keywords:** Likert, medical practice, perception, physicians, scale

### Accepted for publication:

19 December 2001

### Abstract

**Rationale, aims and objectives** This study aimed to develop a scale that can be used to assess the perceptions of the community about physicians and their medical practice. **Methods** A Likert-type scale was developed and applied to 220 subjects twice within a 7–10 day interval. Internal consistency reliability and test–retest reliability were used as indicators of the reliability of the scale. **Results** Chronbach's alpha values obtained from two reliability tests were 0.82 and 0.83, respectively, and correlation coefficient between the two tests was 0.61. The mean value of items indicated that perceptions about physicians were between 'negative' and 'neutral'. **Conclusions** The reliability of this scale was found to be at acceptable levels and therefore it can be used to assess the perceptions of people from different social classes about physicians.

### Introduction

It is known that healers are almost as old as human history and that in the past, communities had great respect for physicians or healers, for whom they attributed extraordinary roles (Eren 1996; Dirican 1990). It is indicated that people placed physicians/healers halfway between God and humans. In early times, religious men, magicians and the like took this role (Dirican 1990). Several reasons can be cited for the great respect for physicians/healers: the aim to heal the patient, the distinct behaviours of physicians/healers and lack of knowledge about health and disease (Engelhart 2000).

Today, we are witnessing that social values and physician and patient roles are changing very fast (Dirican 1990). While some of these changes have positive impacts on humanity, others emphasize social solidarity, peace, fairness and equity. Although some organizations, including the World Health Organization (WHO) and the United Nations Children Fund, have been making efforts to reduce inequity in health since the 1970s, worldwide dis-

parities are larger than ever before (WHO 1998a; Feacham 2000).

Other changes relate to technological developments that provide diagnostic and treatment facilities. Physicians give more attention to technological tools, and may neglect the social and physiological characteristics of their patients (Gordon & Edwards 1995; Tate 1997).

Capitalist values are spreading, erasing older values. In a materialistic culture, money can become the most important value for many people, physicians included. A direct economic relationship between patients and doctors was found to be more common in developed countries than in developing and underdeveloped countries (WHO 1998b). Under these circumstances, poorer people have difficulties related to access and use of health care. Sometimes, those people who do not have access to health care can show their response through aggression and violence: in Turkey, one hears of a conflict between a patient and/or their relatives and health personnel or scandalous news related to the health system almost every day. In one such case, a doctor had removed

the suture of a patient in whom he had intervened a few minutes previously, because the patient could not pay the doctor for his service. These cases can also be interpreted as indications of negative feelings about physicians, pharmacists and health care systems in general. A verse cited by several Turkish people is an example of the distrust towards doctors and pharmacists: 'Go to the doctor, to make his day. Buy the medication, to make the pharmacist's day. Do not take the medication, to make your own day'.

Problems originating from the health care system have also been affecting physicians and other health personnel. Patients with low socio-economic status and their relatives cannot usually appreciate the underlying causes of the problems.

The knowledge of lay people about health and disease has been increasing; as a consequence, people demand more and more information from their physicians. Therefore, patients in the 21<sup>st</sup> century are more realistic than they were in the past and the extraordinary role of the physician does not hold true any longer. Patients demand more initiatives about treatment and intervention options (WHO 1998b).

There are some studies to assess patients' trust and satisfaction, but these can provide only limited information about communities' perceptions of the physician (Anderson & Dedrick 1990; Kao *et al.* 1999; Thom 2000). As mentioned earlier, there are many possible determinants of the perception of physicians. Therefore, we believe it is necessary to develop a tool that can be used to assess communities' perceptions of the physician. Problems between physicians and communities and the distance between them can be determined and measured in any place or time by using this scale.

How do the people in a community perceive all these changes? What are the effects of these changes on the perceptions about physicians? Our aim was to develop a tool quantitatively to measure the effects of these social changes on perceptions about physicians.

## Method

In order to develop a preliminary scale of perceptions about physicians, an item pool was prepared. Most of the items were positive, and the others negative. Each item was scored in a five-point scale from

'absolutely false' to 'absolutely true'. In the positive items, a score of 1 indicated 'absolutely false' and 5 'absolutely true'; in the negative items, 1 indicated 'absolutely true' and 5 'absolutely false' (see Figure 1).

Initially, the preliminary scale was applied to 20 people in December 2000. According to the results, the items were revised and the scale re-constructed. The revised form of the scale was then applied to 220 people on two occasions within an interval of 7–10 days during January 2001. These people were selected from 11 different occupations and professions in order to represent various socio-economic levels. The groups represented were academics, physicians, teachers, students, housewives, policemen, workers, nurses, small-scale retailers, government officers and unemployed people.

In this study, internal consistency reliability and test–retest reliability were used as indicators of the reliability of the scale. Chronbach's alpha values and Pearson correlations were calculated to indicate reliability (Tezbasaran 1997; Ozguven 1999; DeVellis 1991; Tekin 2000; Sumbuloglu & Sumbuloglu 1998).

## Results

The mean scores and standard deviations for the scale are presented in Table 1. The total mean score was found to be 35.0 in the first test and 34.3 in the retest; item mean value was calculated as 2.68 in the test and 2.64 in the retest. The differences were not found to be statistically significant ( $P=0.204$ , Table 1).

Findings related to internal consistency reliability showed that Chronbach's alpha values were 0.82 in the first test and 0.83 in the retest (Table 2). The alpha value if an item was deleted varied from 0.79 to 0.82.

**Table 1 Mean scores of the body image scale in test–retest**

<i>Mean values</i>	<i>First test</i>	<i>Retest</i>	<i>P value</i>
Total mean score	35.0 ± 7.5	34.3 ± 10.3	0.204
Item mean score	2.68 ± 0.6	2.64 ± 0.6	0.204

Items	False		True		
	Absolutely False	False	Neutral	True	Absolutely True
Doctors usually respect their patients and treat them humanely	1	2	3	4	5
Doctors are usually honest when they are making money	1	2	3	4	5
Doctors have sufficient education and knowledge to attend their patients	1	2	3	4	5
Doctors usually make unjust profit during their medical practice	5	4	3	2	1
Doctors usually observe their patients' benefits	1	2	3	4	5
Doctors usually treat poor patients reluctantly	5	4	3	2	1
Most of what doctors say is reliable	1	2	3	4	5
Doctors usually give sufficient information about their patients' diseases	1	2	3	4	5
Doctors usually welcome patients with sympathy	1	2	3	4	5
Doctor's diagnoses are usually right	1	2	3	4	5
Doctors spend sufficient time on their patients	1	2	3	4	5
Doctors treat every patient equally irrespective of the patients' income level	1	2	3	4	5
Doctors show all kinds of efforts in order to provide correct diagnoses and appropriate treatment	1	2	3	4	5

Figure 1 The scale of perceptions about physicians: item list.

Table 2 Reliability analysis: scale (alpha) and item-total statistics

	<i>Scale mean if item deleted</i>	<i>Scale variance if item deleted</i>	<i>Corrected item-total correlation</i>	<i>Alpha if item deleted</i>
ITEM 1	31.3886	53.9054	0.5141	0.8048
ITEM 2	31.5687	54.8274	0.4506	0.8098
ITEM 4	31.5687	56.8845	0.3713	0.8154
ITEM 7	31.2749	570.2860	0.2562	0.8263
ITEM 8	31.5118	530.5272	0.5462	0.8024
ITEM 10	31.8104	580.1829	0.2308	0.8269
ITEM 11	31.2227	540.3263	0.5435	0.8032
ITEM 12	31.7346	540.8340	0.4498	0.8099
ITEM 13	31.7109	540.5017	0.4844	0.8072
ITEM 16	31.3839	540.3995	0.5727	0.8016
ITEM 17	32.0427	550.3077	0.4270	0.8116
ITEM 18	32.1185	520.9526	0.5506	0.8017
ITEM 19	31.5640	510.6280	0.6395	0.7942

n of cases = 220; n of Items = 13; alpha = 0.8212.

**Table 3 Results of Pearson correlation in test–retest**

Variable		Variables	
		Total 1	Total 2
Total 1	Pearson correlation	1.000	0.609
	Significance (two-tailed)	–	0.000
	Number	220	220

The correlation between total scores in test–retest was calculated as 0.61, which was statistically significant ( $P < 0.001$ , Table 3).

## Discussion

A good scale must be both reliable and valid. Reliability is required but is not sufficient for validity (DeVellis 1991). Reliability refers to the consistency of data derived from a measurement procedure. In other words, how accurate, stable, repeatable and ‘trustworthy’ are the numbers generated by an item, scale or questionnaire? (DeVellis 1991; Nunnally 1978; Reynaldo 1999.)

Chronbach’s alpha values, which refer to internal consistency reliability, were 0.82 in test and 0.83 in retest for this scale. If a scale has an alpha above 0.60, it is usually considered to be internally consistent. Some authors commented that values higher than 0.80 can be considered excellent or very good (Ozguven 1999; DeVellis 1991).

Accordingly, these results indicate that the items in this scale had an excellent internal consistency and content validity. When the six items that had a weak correlation ( $< 2$ ) were excluded, the internal consistency reliability of the scale was found to increase. With the exclusion of these six items, Chronbach’s alpha values were found to increase above 0.82 in both tests.

The other reliability scale used in this study was test–retest reliability. The correlation coefficient between total scores in test and retest was found to be 0.61 ( $P < 0.001$ ). Test–retest reliability, which shows the stability of a scale, is usually lower than the real value because it is difficult to provide exactly the same situations in two application of the same test (Dawson & Trapp 2000; Aydemir & Koroglu 2000). However the stability of the scale can be improved

by modifying, adding or excluding some items. The aim of a further study would be to improve the stability of the scale.

We suggest that the total item mean scores can be useful in order to determine the perceptions of a community about their physicians. The mean of the total item value obtained in this study was calculated as 2.6. This value can be interpreted between scores of 1 (indicating ‘negative perceptions’) and 5 (indicating ‘positive perceptions’). The item mean in this study showed that physicians and their practices were generally perceived to be between neutral and negative for the different items.

In conclusion, the scale of perceptions about physicians had satisfactory internal consistency reliability and test–retest reliability. Perceptions about physicians and their practices were found to be between negative and neutral in this study. The scale can be used to assess perceptions about physicians by different social classes in Turkey; in other populations, the reliability and validity of the scale would have to be retested before its common use.

## References

- Anderson L.A. & Dedrick R.F. (1990) Development of the Trust in Physician scale: a measure to assess interpersonal trust in patient–physician relationships. *Psychological Reports* **67**, 1091–1100.
- Aydemir O. & Koroglu E. (2000) *Clinical Scales Used in Psychiatry*. Physician Press Union, Ankara.
- Dawson B.D. & Trapp R.G. (2000) *Basic and Clinical Biostatistics*. McGraw-Hill Professional Publishing, New York.
- DeVellis R.F. (1991) *Scale Development Theory and Applications*. SAGE Publications, Newbury Park, CA.
- Dirican R. (1990) *Community Medicine*. Hatipoglu Press, Ankara.
- Engelhart V.D. (2000) *Ethik im Alltag der Medizin Spektrum der Disziplinen zwischen Forshung und Therapie* [Ethics in daily practice of medicine]. Birkhauser Press, Berlin.
- Eren N. (1996) *Society, Health and Humans for Ages*. Gelisim Press, Ankara.
- Feacham R.G.A. (2000) Poverty and inequity: a proper focus for the new century. *Bulletin of the World Health Organization* **78**, 1.
- Gordon T. & Edwards W.S. (1995) *Making the Patient Your Partner: Communication Skills for Doctors and Other Caregivers*. Auburn House, London.

- Kao A.C., Green D.C., Zaslavsky A.M., Koplan J.P. & Cleary P.D. (1999) The relationship between method of physician payment and patient trust. *Journal of the American Medical Association* **281**, 1173–1174.
- Nunnally J.C. (1978) *Psychometric Theory* 2nd edn. McGraw-Hill, New York.
- Ozguven I.E. (1999) *Psychological Tests*. PDREM Press, Ankara.
- Reynaldo A.J. (1999) Cronbach's Alpha: a tool for assessing the reliability of scales. *Journal of Extension* **37**, 2.
- Sumbuloglu V. & Sumbuloglu K. (1998) *Research Methods*. Hatipoglu Press, Ankara.
- Tate P. (1997) *The Doctor's Communication Handbook*. Radcliffe Medical Press Ltd, Abingdon.
- Tekin H. (2000) *Scale and Evaluation in Education*. Yargi Press, Ankara.
- Tezbasaran A. (1997) *Guidelines for the Development of a Likert-Type Scale*. The Association of Turkish Psychologists Press, Ankara.
- Thom D.H. (2000) Training physicians to increase patient trust. *Journal of Evaluation in Clinical Practice* **6**, 245–253.
- World Health Organization (WHO) (1998a) *Health Reforms in Europe*. World Health Organization, Geneva.
- World Health Organization (WHO) (1998b) *World Health Report*. World Health Organization, Geneva.