

Development and Evaluation of a New Questionnaire for Rating Patient Satisfaction in a Balneotherapy and Physical Therapy Outpatient Clinic

Ayaktan Fizik Tedavi ve Balneoterapi Kliniğinde Hasta Memnuniyetinin Değerlendirilmesi İçin Yeni Bir Anket Geliştirilmesi ve Değerlendirilmesi

Ümit BİNGÖL, MD,^a
Lale ALTAN, MD,^a
M. Mustafa ERTÜRK, MD,^a
Merih YURTKURAN, MD^a

^aRheumatic Disease and Hydrotherapy Section, Uludağ University Faculty of Medicine Atatürk Rehabilitation Center, Bursa

Geliş Tarihi/Received: 25.06.2008
Kabul Tarihi/Accepted: 31.12.2008

Yazışma Adresi/Correspondence:
Ümit BİNGÖL, MD
Uludağ University Faculty of Medicine Atatürk Rehabilitation Center, Rheumatic Disease and Hydrotherapy Section, Bursa, TÜRKİYE/TURKEY
ubingol@uludag.edu.tr

ABSTRACT Objective: Patients who are the natural consumers of healthcare services play a critical part in the healthcare system because of their previous experiences in this field. Defining patient satisfaction is a very important factor to rate the health system and healthcare worker performance and to improve of quality. Up to date, many questionnaire models have been used for this purpose. This study was designed to create a questionnaire to rate the patient satisfaction level and to test the reliability and validity of the questionnaire. **Material and Methods:** A 7-item scale designed to measure the domains of patient satisfaction among patients was developed by the authors in preparation for this study and was field-tested on patients who were given physical therapy and/or balneotherapy for 2 weeks. The study was carried out between 2002 and 2003 for 12 months and after the therapy course was over. Descriptive statistics and estimates of reliability of measurements obtained with the instrument were computed. Reliability and validity were assessed. A total of 304 individuals completed the questionnaire. **Results:** Questionnaires were distributed to 250 female and 133 male (total 383) patients aged 16-83 years. 304 of 383 patients (%79.4) completed the 7 items of the scale, while 79 patients gave no answer. Reliability of the scale was identified by the Cronbach α coefficient. Analysis of the scale revealed that it was highly reliable (Cronbach α = 0.9390) and structural type of validity was established as well. **Conclusion:** This scale was designed to rate the satisfaction of those patients who attended half day balneotherapy and/or physical therapy and the results proved that it was highly reliable and structurally valid.

Key Words: Patient satisfaction; reproducibility of results

ÖZET Amaç: Sağlık hizmetlerinin doğal müşterileri konumunda olan hastalar, bu alanda önceki deneyimleri nedeni ile çok önemli bir role sahiptirler. Hasta memnuniyetinin tanımlanması, sağlık sisteminin ve kişisel performansın değerlendirilmesi ve kalitenin iyileştirilmesi için çok önemli bir faktördür. Bu amaçla günümüze kadar birçok anket modeli kullanılmıştır. Bu çalışma, hasta memnuniyeti düzeyini saptamak için anket oluşturulması ve bu anketin geçerlilik ve güvenilirliğinin test edilmesi için düzenlendi. **Gereç ve Yöntemler:** Çalışmanın hazırlık aşamasında hastalar arasında hasta memnuniyeti alanlarının saptanması için yazarlar tarafından 7 maddeden oluşan bir ölçek tasarlandı ve bu ölçek iki hafta süresince fizik tedavi ve/veya balneoterapi uygulanan hastalar üzerinde denendi. Çalışma 2002-2003 yılları arasında, 12 ay süresince tedavi sonrasında yürütüldü. İstatistiksel analiz ve ölçümlerin güvenilirliği bilgisayar ortamında elde edildi. Anketin güvenilirlik ve geçerliliği değerlendirildi. Anketi toplam 304 kişi tamamladı. **Bulgular:** Anket, yaşları 16 ila 83 arasında değişen 250'si kadın 133'ü erkek toplam 383 hastaya verildi. Toplam 7 maddeden oluşan ölçeğe 383 hastanın 304 (%79.4)'ü yanıt verirken, 79 hasta yanıt vermedi. Ölçeğin güvenilirliğini belirlemek için Cronbach alfa katsayısı hesaplandı. Analiz sonuçlarına göre ölçek hayli yüksek güvenilirliğe (Cronbach α = 0.9390) ve yapısal bakımdan iyi bir geçerliliğe sahipti. **Sonuç:** Bu ölçek ayaktan yarım gün fizik tedavi ve/veya balneoterapi programına katılan hastaların memnuniyetini değerlendirmek için oluşturuldu ve anketin, yüksek düzeyde güvenilir ve yapısal olarak geçerli olduğu kanıtlandı.

Anahtar Kelimeler: Hasta memnuniyeti; güvenilirlik, geçerlilik

Türkiye Klinikleri J Med Sci 2009;29(4):837-44

Patient satisfaction can be defined as subjective evaluation of patients' cognitive and emotional reaction as a result of the interaction between their expectations regarding ideal health care and their perceptions of the actual health care.^{1,2}

Satisfaction surveys can be used both as the sign of healthcare quality and also the outcome measurement.³⁻⁹ In addition to produced healthcare service, hospitals and outpatient clinics must improve their service quality and the rate between cost and utility, like commercial business. Patients, who are the natural consumers of healthcare services, play a critical part in the healthcare system because of their previous experiences in this field.¹⁰

Customer satisfaction is an important factor that affects the success of business.^{11,12} Thus, administrators of the health system have recently started to appreciate patient centered evaluation. Satisfaction is a significant factor in terms of survey results, improvement of quality and performance evaluation of the hospital staff.^{13,14} Reactions of the patients may help the physician or the administrators of the hospital to identify and solve problems consequently leading to an improvement in quality as well.¹⁵⁻²¹

Up to date, many questionnaire models have been used. These questionnaires mainly aim to evaluate structural sources that belong to care organization and preferences of the patient. For this purpose, multi-dimensional questionnaire models are recommended. They include medical-technical adequacy, physical-technical conditions, person-centered approaches and socio-cultural evaluations.²²⁻²⁴

This study was designed to develop a questionnaire to rate the patient satisfaction level and to test the reliability and validity of the questionnaire.

MATERIAL AND METHODS

DEVELOPMENT OF THE QUESTIONNAIRE

Among patients who attended to our hospital for a half-day physical therapy and balneotherapy, those who had received physical therapy and bal-

neotherapy previously were recruited (n= 50) and were asked to list factors that may have influenced their satisfaction in the order of significance. Responses of the patients to this pre-test were first classified and were scored. The results of the evaluation revealed that the relation between the patient and the hospital staff and cleanliness were the most common factors affecting patient satisfaction. These factors rated high in the pre-evaluation process. Based on these results, a new questionnaire was developed. It consisted of 7 items on two different fields; the first field was the relation between the patient and the hospital staff (doctor, nurse, physiotherapist and assistant workers) and the second field was the cleanliness (cleaning of the rooms, building and general cleaning). Review of the related literature revealed that theoretically questions of this questionnaire could be used to measure patient satisfaction. Other clinical and demographic factors that might affect patient satisfaction such as age, sex, diagnosis, outcome of treatment and problems encountered were also included in the questionnaire.

GRADING OF THE QUESTIONNAIRE

Answers to the items on the relation between patient and hospital staff and on cleanliness were graded from best to worst. (1: very good, 2: good, 3: average, 4: poor). In terms of benefit from therapy, there were four answers (1: I recovered completely. 2: I recovered partially. 3: I did not benefit. 4: I deteriorated.). Questions on the problems during the therapy were graded between 1 and 2. (1: occurred, 2: not occurred).

APPLICATION PLACE OF THE QUESTIONNAIRE

The questionnaire was administered in the Hospital of Kükürtlü Spa, which is a branch of the Atatürk Application and Research Centre for Rehabilitation, a unit of the Physical Medicine and Rehabilitation Clinic of the Uludağ University, Faculty of Medicine. Patients who were examined in the abovementioned hospital and were recommended a half-day physical therapy and/or balneotherapy for 5 days a week for 2 weeks were asked to complete the questionnaire. The study lasted for 12 months in 2002-2003 and the questionnaire was

given to patients after their therapy sessions were over.

Kükürtlü Spa is a centre established in a green field that covers 23.173 square meters. Each year an average of 13.000 patients are evaluated in this centre; diagnosis, physical rehabilitation practices and treatment of rheumatologic diseases are carried out and scientific spa applications are performed as well in the center. The majority of patients who apply to the centre have health insurance so they do not pay additional charge for health services.

FILLING OUT THE QUESTIONNAIRE

Before treatment sessions, a specialist doctor met with those patients who visited the therapy unit on the date of appointment. During these meetings patients were informed in detail on the duties and the responsibilities of the doctor, nurse, physiotherapist, and assistant healthcare workers and on the cleanliness of the rooms, bathes and the building in general. The abovementioned issues were described as follows.

Responsibilities and Duties of the Doctor

Except for emergency conditions, the doctor made rounds two days a week. The first round was performed in order to evaluate additional complaints of the patient, listen to his/her history, examine the locomotor system and evaluate responses to therapy. In the second round, doctors informed the specialist on patients, and if necessary, they changed the physical therapy applications and medical treatments, transferred necessary information to the patients on their findings, made the rounds timely, and had a good rapport with patients smiling at all times.

Responsibilities and Duties of the Nurse

The nurses measured the fever, pulse and blood pressure of patients both before and after physical therapy and balneotherapy. In case of an abnormal medical finding, they informed the doctor about the condition; prepared the patients for balneotherapy, guided and supervised them during balneotherapy, controlled the order and cleanliness of the beds and bed sheets in the resting rooms after balneotherapy and/or physical therapy;

distributed information about physical therapy and balneotherapy and about its rules and made sure that patients followed the rules. They tried to have a good rapport with patients smiling at all times.

Duties and Responsibilities of the Physiotherapist

They applied the therapy that was recommended by the doctor, which was written in the treatment order form, performed the therapy of patients regularly and timely. If any therapy related complication happened during application, they informed the doctor about the situation. They instructed the patients about the exercises supervised them, having a good rapport with patients smiling at all times.

Duties and Responsibilities of the Assistant Workers

They provided a suitable place for the patients when they arrived to the therapy unit helped them carry their personal belongings. They cleaned the patient rooms, changed bed sheets, cleaned the bathroom and the building in general, moved physically handicapped patients into the unit and to their rooms, helped them perform their bureaucratic processes, and established a good communication with the patients.

Cleanliness of the Room, the Building and the Baths

Cleaning of the room, building and baths were carried out in accordance with hygiene rules and detailed information was given to patients particularly about control and cleanliness of the baths.

Patients filled in the questionnaire on the last day of their therapy considering the abovementioned aspects globally. While he/she was answering the questions in the questionnaire there was no hospital staff in the room. A responsible hospital worker collected the completed questionnaires after the patient left the treatment room completely.

STATISTICAL ANALYSIS

Searching Reliability of Scale

All analyses were carried out by the Department of Biostatistics, Uludağ University using SPSS 11.0 version on the computer. $p < 0.05$ was considered significant, $p < 0.01$ very significant, and $p < 0.001$ highly significant.

It was logically assumed that the items in the scale formed an extension validity. Thus, item-total correlations of the items in scale were computed later by a covariance matrix analysis and items were investigated with regard to their consistency with the scale in general. Those items for which the item-total correlation values were higher than 0.25 were considered to provide item-total correlation.

Additive character of the items of the scale was measured by Tukey test of additivity, while reliability of the scale was measured by the Cronbach's α coefficient.

Searching Validity of the Scale

Validity of the scale was analyzed structurally. For this, factors that may affect the satisfaction of the patients and that are concordant with the literature, such as age, sex, seasonal changes as well as problems in the unit, variables of the benefit from therapy, and relation between scale scores were investigated. In structural investigation, Pearson's correlation coefficient was used for the analysis of correlation. Mann-Whitney U test and Kruskal-Wallis test were performed for comparisons. The scale was considered structurally valid after connections were found.

RESULTS

Questionnaires were distributed to 250 female and 133 male (total 383) patients aged 16-83 years. Two hundred and fifty three patients suffered from non-

inflammatory diseases, 26 patients had inflammatory diseases and 4 were in both groups. The 7-item questionnaire was completed by 304 of 383 patients (79.4%), while 79 patients did not complete the questionnaire. Fifty-three patients who completed questionnaire stated that he/she encountered some problems during the therapy, whereas 251 patients had encountered no problem. Thirteen patients recovered completely; 265 patients benefited partly; 21 patients stated that they did not have any benefit and 5 patients reported that they deteriorated after therapy. Table 1 shows demographic and clinical features of the patients.

For 4 of 7 items of the scale, patients rated their global satisfaction levels for the doctor, nurse, physiotherapist and assistant workers that they met in the therapy centre ranging between 1 and 4 points (very good to poor) interval. For the remaining 3 items, they rated their global satisfaction with the general cleaning, cleanliness of rooms and baths ranging between 1 and 4 points (very good to poor). Table 2 shows numbers and percentages of the patients who completed the questionnaire in terms of the field and rate of the satisfaction. Almost all the items in the scale were scored between very good and good (1-2). When patients were rating their satisfaction with the nurse and the doctor, none of them rated 4 points (poor) Only 1 patient rated his satisfaction with the physical therapy specialist as poor. Three patients rated room cleanliness poor. Only 1 patient rated building cleanliness poor and

TABLE 1: Demographic and clinical features of the patients who completed the questionnaire.

	Participants	%	Respondents	%
Patient (n)	383	100	304	79.4
Age range (mean)	16-87 (52.55)	-	16-87 (52.89)	-
Female/male	250/133	65.3/34.7	222/82	73/27
Inflammatory	26	6.8	21	6.9
Non-inflammatory	353	92.2	282	92.8
Inf + noninf [†]	4	1	1	0.3
Problem absent/present	251/53	65.5/13.8	251/53	82.6/17.4
(missing)	(79)	(20.6)	(0)	(0)
*Benefit (1/2/3/4)	13/265/21/ 5	3.4/69.2/5.5/1.3	13/265/21/ 5	4.3/87.2/6.9/1.6
(missing)	(79)	(20.6)	(0)	(0)

[†]: inflammatory + noninflammatory, *1: Cured completely; 2: Cured partially; 3: Did not benefit; 4: Deteriorated.

TABLE 2: Number and percent of patients according to satisfaction fields and scores.

Satisfaction Fields	Satisfaction scores (1-4)							
	1		2		3		4	
	n	%	n	%	n	%	n	%
Doctor	230	75.7	73	24	1	0.3	0	0
Nurse	236	77.6	66	21.7	2	0.7	0	0
Physiotherapist	190	62.5	108	35.5	5	1.6	1	0.3
Assistant worker	163	53.6	127	41.8	14	4.6	0	0
Room cleaning	123	40.5	152	50.0	26	8.6	3	1
Building cleaning	118	38.8	151	49.7	34	11.2	1	0.3
General cleaning	97	31.9	160	52.6	44	14.5	3	1

Satisfaction scores: 1: Very good, 2: Good, 3: Average, 4: Poor.

n: number of patients, (%): Percent of patients.

three patients rated general cleanliness as poor. Table 3 shows the average satisfaction scores, minimum and maximum scores, median value, standard deviation coefficients of item-total correlation and total values of 7 items included in the scale. Since item-

total correlation values in our scale changed between $r = 0.74-0.87$, all items were considered to meet the item-total correlation ($r > 0.25$) and no item was excluded from the scale.

Additive character of the scale's items was measured by the Tukey test of additivity and the results of the analysis revealed that the scale had an additive character ($p < 0.001$).

Reliability of the scale was identified by the Cronbach α coefficient, which revealed that the scale was highly reliable (Cronbach $\alpha = 0.9390$).

The correlation between benefit from the therapy and age and items of the scale was measured by Pearson's correlation coefficient and their relation with season was examined by the Kruskal Wallis test. Correlation with sex, diagnosis and problem was examined by the Mann-Whitney U test. There was a significant correlation between age and nurse satisfaction; between sex and room,

TABLE 3: Average, minimum-maximum, median values for satisfaction scores of the items in the scale and their standard deviations, item-total correlations.

	Mean score	Min-Max	Median	Std Dev	r
Doctor	1.24	1-3	1	0.43	0.74
Nurse	1.23	1-3	1	0.43	0.74
Physiotherapist	1.39	1-4	1	0.54	0.78
Assistant worker	1.50	1-3	1	0.58	0.82
Room cleaning	1.70	1-4	2	0.66	0.87
Building cleaning	1.73	1-4	2	0.66	0.86
General cleaning	1.84	1-4	2	0.69	0.84
Total score	10.66	7-20	10	3.49	5.65

Note: Numbers in the table were given as two digits after decimal point (percent age fraction) without rounding off. (abbreviations: Min-max: Minimum-maximum, Std Dev: standard deviation r: item-total correlations coefficient.

TABLE 4: Correlation between scale items, various variables and their levels of significance.

	Age	Sex	Diagnosis	Season	Problem	Benefit
Doctor	0.104	0.071	0.939	0.049*	0.013*	0.001***
Nurse	0.036*	0.320	0.689	0.429	0.011*	0.001***
Physiotherapist	0.507	0.630	0.884	0.001***	0.058	0.012*
Assistant worker	0.325	0.221	0.917	0.042*	0.739	0.001***
Room cleaning	0.756	0.003**	0.834	0.115	0.502	0.001***
Building cleaning	0.719	0.027*	0.758	0.164	0.430	0.001***
General cleaning	0.573	0.001***	0.511	0.386	0.430	0.001***
Total satisfaction score	0.331	0.093	0.700	0.109	0.934	0.001***

*: $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

building, and general cleanliness; between season and doctor, physical therapy specialist and assistant workers; between problem and doctor and nurse; and between benefit from therapy and all items of the scale. There was no significant relation between diagnosis and items (Table 4).

DISCUSSION

Satisfaction of the patient is an important aspect of the service quality.⁵⁻⁷ Defining patient satisfaction level, improving service quality and providing high quality of service in accordance with the expectation of patients are important issues.^{17,25} When a person is satisfied by previous services, he/she will certainly return to the same institution when needed later.

Level of satisfaction is an abstract concept and measuring such an abstract concept is considerably difficult than measuring a concrete one. Hence, reliability and validity of the scales designed to measure satisfaction must be demonstrated. This study demonstrated both reliability and validity of the "Kükürtlü Questionnaire" which was designed to measure the satisfaction level of patients who applied to the unit for physical therapy and spa practices.

Satisfaction or dissatisfaction of the patients changes depending on socio-demographic and cultural factors¹⁵⁻²¹ as well as age, sex, education, and condition of the disease. In addition, medical-technical adequacy of the hospital, physical-technical conditions, person-centred approach (relations with doctor, nurse, and other workers) are among the factors that may influence patient satisfaction.²²⁻²⁴

Several researchers have hypothesized that patient satisfaction is a multidimensional phenomenon.²⁶⁻²⁹ However, there is no consensus on this point. Other researchers have argued that there is little data regarding the type of information that contributes most to patient satisfaction with the provision of health care.³⁰ Perhaps, patient satisfaction is best described as a unidimensional construct, or as a construct with only one predominant dimension. It is an undeniable fact that physical and technical condition and medical and technical possibilities change from one hospital to another.

Besides, it is apparent that these conditions will change completely in units in which balneotherapy and physical therapy applications are performed. The Kükürtlü Questionnaire was prepared by considering the specific conditions of our unit and after a pre-intervention study, which ended up with a questionnaire including 7 items as the most important factors in terms of two aspects of health services—cleanliness and relations between patient and staff. This questionnaire was applied to the patients throughout a year.

Other questionnaires administered on physical therapy mostly covered physical properties of clinics for physical therapy, appointments and detailed questions about physiotherapists, while our questionnaire was about cleanliness and patient satisfaction with all staff members they interacted with during their treatment.^{26,31,32} Instead of asking specific questions, patients were asked to do a global evaluation after being informed on the job descriptions of all staff members and the cleanliness issue. In this way, detailed questions were avoided to make the form easier to complete and to keep the rate of participation high.

While there has been much academic work done in the field of patient satisfaction with nurses and doctors, very few studies have been published on satisfaction with physiotherapists and assistant staff within the framework of quality and satisfaction studies.^{1-5,8-10,26,31-35} Increasing the number of such studies and considering other factors that possibly affect satisfaction in physical therapy and rehabilitation or balneotherapy, will increase the quality of health services and improve staff performance by monitoring.^{13,14,33}

Analysis for any correlation between the seven areas of satisfaction in our scale plus overall satisfaction and age, gender, diagnosis, seasonal changes, existence of a health problem, and benefit from therapy revealed that all the items in the scale and overall satisfaction score were closely related to benefiting from therapy. Previous studies suggested that patient satisfaction varied according to age, gender, time spent in the hospital, education level and the department of the hospital where the patient was treated.^{15,36-38} Larrson reported that

a short stay in a hospital, female gender, high education level and, younger age were correlated with a low level of satisfaction.³⁷ Many researchers suggested that satisfaction level increased with age, whereas some researchers found no relation between age and satisfaction.^{39,40}

Beattie et al indicated that adequate time spent in patient care and the experience level of the therapist and clinic staff were more important for patient satisfaction than were the location of the facility, the quality of equipment, and the availability of parking.³² Hudak and Wright provided an excellent review of the characteristics and use of a patient satisfaction measure.⁴¹ They noted that it was important to differentiate between patient satisfaction with outcome and patient satisfaction with care. Patient satisfaction with outcome relates to the results of treatment, whereas satisfaction with care reflects the service the patient received during a course of care. Goldstein et al also found a low correlation between cost of service and satisfaction.²⁶

In our study, while partly significant relations were observed between gender and room-building-general cleanliness satisfaction; season and doctor, physiotherapists and assistant staff satisfaction, and health problem and doctor-nurse satisfaction, a highly significant relationship was identified only between benefit from the therapy and scale items. There was no significant correlation between diagnosis and any scale item.

Although studies on patients who received physical therapy were reported previously, this is the first study, which rates satisfaction of patients who received physical therapy or balneotherapy. The scale used in the study has a high reliability

and structural validity, takes 30 seconds to complete, which is a relatively short duration and may be applied to various groups in order to assess cleanliness and relation between patients and staff concurrently. In addition, the results of the scale may be used for monitoring and improving performance of hospital staff.

However, the scale has some limitations, as well. This scale is not a regular evaluation scale for patient satisfaction.

The questionnaire also has some limitations. For example, the scale was rated globally; it was never applied out of our clinic and the number of patients responding to the questionnaire (304) was relatively low. Besides, other factors that may influence satisfaction during the investigation of the validity such as educational level, psychological factors, economic status, and social insurance were disregarded in the scale during the assessment for validity.

Identifying patient satisfaction is a very important factor in terms of both rating the health system and personnel performance and improving service quality. This questionnaire was designed to rate satisfaction of patients who attended half-day balneotherapy and/or physical therapy and it was proven to be highly reliable and structurally valid. It may be used in for similar units and clinics. Applications in other clinics may help eliminate its limitations and may improve it.

Acknowledgement

We thank Assoc. Prof. İlker Ercan (Uludağ University, Faculty of Medicine, Department of Biostatistics) for qualified assistance in the statistical analyses of this study.

REFERENCES

1. Eriksen LR. Patient satisfaction with nursing care: concept clarification. *J Nurs Meas* 1995;3(1):59-76.
2. Risser NL. Development of an instrument to measure patient satisfaction with nurses and nursing care in primary care settings. *Nurs Res* 1975;24(1):45-52.
3. Avis M, Bond M, Arthur A. Satisfying solutions? A review of some unresolved issues in the measurement of patient satisfaction. *J Adv Nurs* 1995;22(2):316-22.
4. Mahon PY. An analysis of the concept 'patient satisfaction' as it relates to contemporary nursing care. *J Adv Nurs* 1996;24(6):1241-8.
5. Idvall E, Rooke L, Hamrin E. Quality indicators in clinical nursing: a review of the literature. *J Adv Nurs* 1997;25(1):6-17.
6. Cleary PD, McNeil BJ. Patient satisfaction as an indicator of quality care. *Inquiry* 1988; 25(1):25-36.
7. Sixma HJ, Kerstens JJ, Campen CV, Peters L. Quality of care from the patients' perspective: from theoretical concept to a new measuring instrument. *Health Expect* 1998;1(2):82-95.
8. Lin CC. Patient satisfaction with nursing care as an outcome variable: dilemmas for nursing evaluation researchers. *J Prof Nurs* 1996;12(4):207-16.
9. French B. British studies which measure patient outcome, 1990-1994. *J Adv Nurs* 1997;26(2):320-8.
10. Emanuel EJ, Brett AS. Managed competition and the patient-physician relationship. *N Engl J Med* 1993;329(12):879-82.
11. Czepiel JA. Service encounters and service relationships: implications for research. *J Bus Res* 1990;20(1):13-21.
12. Grönroos C. Relationship marketing: the strategy continuum. *JAMS* 1995;23(4):252-4.
13. Rider EA, Longmaid HE. Guidelines for clinical teachers receiving feedback from learners. *JAMA* 1995;274(12):996.
14. Longmaid HE, Rider EA. Feedback and performance improvement in clinical medical education. *JAMA* 1995;274(13):1092.
15. Johansson P, Oléni M, Fridlund B. Patient satisfaction with nursing care in the context of health care: a literature study. *Scand J Caring Sci* 2002;16(4):337-44.
16. Lewis JR. Patient views on quality care in general practice: literature review. *Soc Sci Med* 1994;39(5):655-70.
17. Arnetz JE, Arnetz BB. The development and application of a patient satisfaction measurement system for hospital-wide quality improvement. *Int J Qual Health Care* 1996;8(6): 555-66.
18. Owens DJ, Batchelor C. Patient satisfaction and the elderly. *Soc Sci Med* 1996;42(11): 1483-91.
19. Avis M, Bond M, Arthur A. Questioning patient satisfaction: An empirical investigation in two outpatient clinics. *Soc Sci Med* 1997; 44(1):85-92.
20. Sitzia J, Wood N. Patient satisfaction: a review of issues and concepts. *Soc Sci Med* 1997;45(12):1829-43.
21. Fung D, Cohen MM. Measuring patient satisfaction with anesthesia care: a review of current methodology. *Anesth Analg* 1998;87(5): 1089-98.
22. Wilde B, Starrin B, Larsson G, Larsson M. Quality of care from a patient perspective--a grounded theory study. *Scand J Caring Sci* 1993;7(2):113-20.
23. Wilde B, Larsson G, Larsson M, Starrin B. Quality of care. Development of a patient-centred questionnaire based on a grounded theory model. *Scand J Caring Sci* 1994;8(1):39-48.
24. Larsson G, Larsson BW, Munck IM. Refinement of the questionnaire 'quality of care from the patient's perspective' using structural equation modelling. *Scand J Caring Sci* 1998;12(2):111-8.
25. Harris LE, Swindle RW, Mungai SM, Weinberger M, Tierney WM. Measuring patient satisfaction for quality improvement. *Med Care* 1999;37(12):1207-13.
26. Goldstein MS, Elliott SD, Guccione AA. The development of an instrument to measure satisfaction with physical therapy. *Phys Ther* 2000;80(9):853-63.
27. Şentürk Erenel A, Akkuzu G. [A perspective of the women to the relationship between health professional and patient: the delivery experience]. *Türkiye Klinikleri J Med Ethics* 1999;7(1):22-8.
28. Pinto MB. Outcome measures in assessing physical therapy. *Orthop Clin North Am* 1995;26(4):269-81.
29. Roush SE, Sonstroem RJ. Development of the physical therapy outpatient satisfaction survey (PTOPS). *Phys Ther* 1999;79(2):159-70.
30. Edgman-Levitan S, Cleary PD. What information do consumers want and need? *Health Aff (Millwood)* 1996;15(4):42-56.
31. Monnin D, Perneger TV. Scale to measure patient satisfaction with physical therapy. *Phys Ther* 2002;82(7):682-91.
32. Beattie PF, Pinto MB, Nelson MK, Nelson R. Patient satisfaction with outpatient physical therapy: instrument validation. *Phys Ther* 2002;82(6):557-65.
33. Rider EA, Perrin JM. Performance profiles: the influence of patient satisfaction data on physicians' practice. *Pediatrics* 2002;109(5): 752-7.
34. Perneger TV, Etter JF, Raetzo MA, Schaller P, Stalder H. Comparison of patient satisfaction with ambulatory visits in competing health care delivery settings in Geneva, Switzerland. *J Epidemiol Community Health* 1996;50(4): 463-8.
35. Hofer TP, Hayward RA, Greenfield S, Wagner EH, Kaplan SH, Manning WG. The unreliability of individual physician "report cards" for assessing the costs and quality of care of a chronic disease. *JAMA* 1999;281(22):2098-105.
36. Hiidenhovi H, Nojonen K, Laippala P. Measurement of outpatients' views of service quality in a Finnish university hospital. *J Adv Nurs* 2002;38(1):59-67.
37. Larsson BW. Patients' views on quality of care: age effects and identification of patient profiles. *J Clin Nurs* 1999;8(6):693-700.
38. Salomon L, Gasquet I, Mesbah M, Ravaud P. Construction of a scale measuring inpatients' opinion on quality of care. *Int J Qual Health Care* 1999;11(6):507-16.
39. Nelson-Wernick E, Currey HS, Taylor PW, Woodbury M, Cantor A. Patient perception of medical care. *Health Care Manage Rev* 1981;6(1):65-72.
40. Cleary PD, Keroy L, Karapanos G, McMullen W. Patient assessments of hospital care. *QRB Qual Rev Bull* 1989;15(6):172-9.
41. Hudak PL, Wright JG. The characteristics of patient satisfaction measures. *Spine* 2000; 25(24):3167-77.