J Rehabil Med 2002; 34: 105–108

Taylor&Francis healthsciences

SATISFACTION WITH HOSPITAL REHABILITATION: IS IT RELATED TO LIFE SATISFACTION, FUNCTIONAL STATUS, AGE OR EDUCATION?

Franco Franchignoni,[1] Marcella Ottonello,[2] Emilio Benevolo[2] and Luigi Tesio[3]

From the [1]Unit of Occupational Rehabilitation and Ergonomics, Rehabilitation Institute of Veruno, [2]Rehabilitation Institute of Genoa-Nervi, [3]Department of Rehabilitation Medicine and the Unit of Research, Functional Assessment and Quality Assurance in Rehabilitation, Rehabilitation Institute of Pavia, "Salvatore Maugeri" Foundation, Clinica del Lavoro e della Riabilitazione, IRCCS, Italy

Satisfaction with care, functional and cognitive status, life satisfaction, anxiety, and sociodemographic variables were correlated in 55 in-patients admitted to a rehabilitation unit after hip or knee surgery. The study aimed at investigating whether, as an index of care quality, patient satisfaction can be considered as a distinct domain or instead is subsidiary to other patient characteristics. Patient satisfaction with rehabilitation care was measured through a questionnaire, SAT-16. The SAT-16 scores were moderately correlated with a short form of the Life Satisfaction Index (LSI-11: $r_s = 0.41$, $p = 0.001$), but did not correlate with either the Functional Independence Measure (FIM), the STAI form X (the Spielberger State-Trait Anxiety Inventory), age or educational level. According to the "discrepancy model", the fair degree of correlation between SAT-16 and LSI-11 could be explained by connecting both expressions of satisfaction with personal background expectations and their perceived degree of fulfilment. The results confirm, also for rehabilitation care, that patient satisfaction should be considered as a valuable specific outcome, independent of most of the patient characteristics investigated (functional and cognitive status, anxiety, age, and education).

Key words: satisfaction, measure, disability assessment, outcome, rehabilitation.

J Rehabil Med 2002; 34: 105–108

Correspondence address: Franco Franchignoni, MD, Fondazione Salvatore Maugeri, Clinica del Lavoro e della Riabilitazione, IRCCS, Via Revislate 13, IT-28010 Veruno (NO), Italy. E-mail: ffranchignoni@fsm.it

Accepted October 25, 2001, submitted May 2, 2001

INTRODUCTION

The importance of including patients' opinions in health service assessment has been increasingly acknowledged over the past decade and patient satisfaction is now widely considered a meaningful index of quality of care (1, 2).

Satisfaction ratings represent health care client reactions to salient aspects of their experience of the service received, but it is not clear how much they reflect other respondents' variables (patients' preferences, expectations, clinical conditions, etc.) rather than the realities of the care received (type, quality, intensity, etc.) (3). This potential ambiguity explains why the satisfaction with health care services has been investigated with regard not only to structure, process and outcome of care, but also to physical, psychological and sociodemographic characteristics of the patients (4). The question is whether, in the management of health care, this variable represents a valuable distinct outcome or by contrast strongly reflects patients' features.

A few published studies have covered this issue, often with inconsistent results (3–5). Furthermore, the answers may be specific for different care settings (3, 4). Distinctive features of rehabilitation facilities include, for instance, a sharp focus on patients' functions and performances, their level of active engagement in exercise therapy, and their interaction with a variety of professionals working in interdisciplinary teams (5).

This study aims to investigate the associations between patients' overall satisfaction with an episode of care in a rehabilitation hospital, and their functional and cognitive status, life satisfaction, anxiety, age, and education. The leading hypothesis was that satisfaction with rehabilitation care is a distinct domain, minimally biased by the patient's background conditions.

METHODS

Patients

Fifty-five patients (10 males and 45 females; mean age 72 years, S.D. 6.3, range 63–85) took part in this study. They were consecutively admitted to a free standing Rehabilitation Centre, from May 1999 to February 2000, 14–65 days (mean 28) after surgery for hip ($n = 30$) or knee ($n = 20$) replacement or femoral fracture ($n = 5$). Mean education was 7 years (S.D. 3.1, range 4–17). The only exclusion criterion was score <24/30 on the Mini Mental State Examination (6). All subjects were eligible. They gave written informed consent to take part in the study.

The protocol was approved by the local ethical committee.

Treatment

Patients underwent an average of 450 minutes a week (6 days per week) of exercise therapy, pain treatment and occupational therapy, according to customized programmes. Median length of stay was 32 days (interquartile range, IQR, 20–35). Ninety-one per cent of the patients ($n = 50$) were discharged home; 9% ($n = 5$) were discharged to a nursing home. None was transferred to an acute care unit or died.

Instruments and administration

(a) The SAT-16 is a questionnaire measuring patient satisfaction with respect to the perceived quality of care during inpatient rehabilitation: it has been demonstrated to have content, concomitant and construct validity, and test-retest reliability (7, 8). The instrument is self-administered and includes 16 four-level items. Typical questions include "What do you think about the

 ISSN 1650–1977

human relations with the nursing staff?", "What do you think about cleanliness of the room and ward?", "What do you think about the quality of the food?". The respondent checks the extent of satisfaction regarding each item on a 4-level scale (from 1—very dissatisfied to 4—very satisfied). Through factor analysis the questionnaire revealed 5 factors relating to different aspects of care: "care, attitudes and communication" from the medical staff (3 items), from nursing staff (3 items), and from therapist staff (3 items); "food and catering" (3 items); and "physical environment and facilities/support services" (4 items; i.e. cleanliness, living conditions, ward time-table, accessory services). The internal consistency (Cronbach's $\alpha = 0.9$) allows for the cumulation of the scores from individual items. The score range is 16–64; the higher the score, the greater the patient's satisfaction. The questionnaire includes also three additional open-ended questions, focusing on positive and negative aspects of care during stay and asking for suggestions for improvement of the service.

(b) The Life Satisfaction Index is also a self-administered questionnaire exploring a series of domains in the area of satisfaction with life in general (9, 10). The Italian validated short-form (LSI-11, 11 items) was adopted (11). Three typical items are "My life could be happier than now", "I've gotten pretty much what I expected out of life", "I expect some interesting and pleasant things to happen to me in the future". Factor analysis detected three sub-domains, i.e. mood tone (4 items), congruence between desired and achieved goals (3 items) and zest for life (4 items). Items are scored on a 0–2 level basis ("disagree", "don't know", and "agree"). Scores are assigned to items in such a way that, regardless of whether items are positively or negatively worded, the score is higher the greater the satisfaction reported.

(c) The Spielberger State-Trait Anxiety Inventory (STAI form X) is a self-administered questionnaire, composed of two scales—the state form (intended to assess transient or situational feelings of fear or worry, X1) and the trait form (designed to assess a relatively stable tendency to respond anxiously to stressful situations, X2). Each scale consists of 20 statements, rated on a 4-point intensity scale, from "not at all" to "very much so" (score 20–80). Typical statements are "I feel upset" (form X1) and "I worry too much over something that really doesn't matter" (form X2). A higher score indicates more severe anxiety (12).

(d) The Functional Independence Measure (FIM℠) is an ordinal scale composed of 18 items (totFIM) describing activities of daily life. Each item can be scored 1 to 7; the higher the score, the greater the patient's independence of external help (total score range 18–126). The FIM can be subdivided into a 13-item motor subscale (motFIM), relating to self-care, continence, mobility and locomotion, and a 5-item cognitive subscale (cognFIM), relating to communication and social cognition. Measures should reflect what the patient usually does, so that information can be collected from either patients, personnel or proxies. The FIM content validity and reliability has been established (13, 14). Raters are credentialed in dedicated courses. A single credentialed rater scored all patients. The Italian validated version was adopted in this study.

The questionnaires were simultaneously collected: LSI-11, STAI, FIM within 3 days from admission and before discharge; the SAT-16 within 3 days before discharge, only. Self-administered questionnaires were anonymous. The authors were blinded to patients' identity during the analysis.

Statistical analysis

Correlations were calculated as Spearman's r_s, corrected for ties. The significance in score changes between admission and discharge was tested through the Wilcoxon ranksum procedure (non-directional, $\alpha = 0.05$).

RESULTS

The median score and the interquartile range of SAT-16, LSI-11, STAI (X1 and X2), motFIM and cognFIM, at admission and discharge, are given in Table I. Significant score changes over the test period were recorded for motFIM ($z = 6.45$, $p = 0.0001$) and LSI-11 ($z = 1.96$, $p = 0.05$). Scores at discharge were correlated with scores at admission (overall, $r_s > 0.62$, $p < 0.0001$).

Table I. *Median and interquartile range (in brackets) of the scores of the questionnaires administered to all 55 patients: SAT-16 (patient satisfaction); LSI-11 (satisfaction with life); STAI-X1 and -X2 (state and trait anxiety, respectively); motFIM and cognFIM (functional independence in motor and cognitive domains, respectively)*

Questionnaires	Admission	Discharge
SAT-16	–	56 (50–62)
LSI-11	10 (8–14)	12 (8–16)
STAI-X1	36 (32–44)	35 (32–43)
STAI-X2	41 (35–50)	41 (35–49)
MotFIM	67 (49–82)	81 (66–89)
CognFIM	35 (24–35)	35 (25–35)

The correlations between SAT-16 and the other variables at discharge are given in Table II. The SAT-16 significantly correlated with LSI-11 at discharge ($r_s = 0.41$, $p = 0.001$) and with two out of three of its subscales, "mood tone" ($r_s = 0.49$, $p = 0.0001$) and "zest for life" ($r_s = 0.34$, $p = 0.01$). No correlations were found with either age, education, FIM levels or FIM increments.

The LSI-11 significantly correlated also with the two STAI scales (at admission: $r_s = 0.36$, $p = 0.008$, for X1; $r_s = 0.29$, $p = 0.03$, for X2; at discharge: $r_s = 0.33$, $p = 0.01$, for X1; $r_s = 0.39$, $p = 0.004$, for X2). None of the psychological parameters (LSI-11, STAI scales) correlated with either the FIM scores (motFIM, cognFIM) or their change during the test period. No variable correlated with the educational level. Only FIM scores showed a significant relationship with age (for tot FIM: at admission $r_s = -0.29$, $p = 0.03$; at discharge $r_s = -0.39$, $p = 0.004$).

DISCUSSION

There is no agreement on which domains should be included in a questionnaire investigating patient satisfaction during an episode of hospital stay (4, 5). To the authors' knowledge, SAT-16 was the first published instrument for rehabilitation settings (7, 8). SAT-16 represents a simple, self-administered tool,

Table II. *Spearman's correlation coefficient and significance levels (in brackets) of the correlation between SAT-16 (patient satisfaction) and the psychological and functional parameters investigated at discharge: LSI-11 (satisfaction with life); STAI-X1 and -X2 (state and trait anxiety, respectively); motFIM and cognFIM (functional independence in motor and cognitive domains, respectively)*

	LSI-11	STAI-X1	STAI-X2	MotFIM	CognFIM
SAT-16	0.41 (0.001)	−0.14 (0.30)	−0.12 (0.37)	0.11 (0.43)	0.14 (0.29)

collected before patient discharge (with a high response rate) and made up of 16 closed-end and 3 open-ended questions, providing a comprehensive feed-back on the subjective experience and evidencing any single expression of satisfaction or dissatisfaction. The dimensions of the 16-item section (humaneness, communication skills and perceived competence of the staff, catering service and meal quality, physical surroundings and accessory services) are deemed to cover key areas within the patient's expectations (15, 16). Recently, another questionnaire was published (17), made up of 37-items rated on a 4-point scale (poor, fair, good, excellent). This questionnaire, however, is administered through phone interview, 1 month after discharge. Given the time span after treatment and the non-anonymous administration, it might reflect long-term perceived functioning more than subjective perception of satisfaction. It seems thus complementary, not substitutive, with respect to SAT-16.

Patients in our sample declared a high level of satisfaction with the services received (median value 56 points out of a maximum of 64), similar to what was recorded from 339 inpatients in a previous study (8). This is in line with findings relating to rehabilitation services, from most available studies (5). A long-standing personal relationship with the staff is supposed to favour satisfaction (3). This may be particularly true in small facilities like the one tested in this study (a 50-bed free-standing facility).

The present study also suggests the following observations:

(a) Patient satisfaction might be biased by the level of satisfaction with life in general, as measured with LSI-11, and particularly with its subscales "mood tone" and "zest for life". A fair degree of correlation between the two satisfaction variables is not surprising, given their related constructs: the patient satisfaction questionnaire implies cognitive efforts and emotional reaction to the care received, while the LSI-11 questions are closely related to morale, adjustment, and psychological well-being. The association can be better appreciated in the light of the "discrepancy model" (4), which explains "life satisfaction" as an overall assessment of one's condition reflecting the comparison between aspirations and achievement, and "patient satisfaction" as a concept related also to the extent to which the features of the care received meet the patient's expectations. Thus, the personal background expectations and their perceived degree of fulfilment might be the shared underlying variable. This relationship helps provide better understanding, from a clinical point of view, of the role of some cognitive and emotional variables in colouring patient satisfaction ratings, and seems to support the theory that expectations play a role in many expressions of satisfaction (3, 4). The present finding agrees with the report of Roberts et al. (18), who found that the results for the Patient Satisfaction Questionnaire (PSQ) and the Client Satisfaction Questionnaire (CSQ-18) were correlated with those for the Life Dimensions Questionnaire (LDQ-30), a global measure of life satisfaction. Furthermore, Greenley et al. (19) and Hopton et al. (20) reported that psychologically distressed persons show a lower level of satisfaction in a broad range of health services. Greenley et al. stated that distressed persons (i.e. with "psychological symptoms of which moderate depression and anxiety are the most common") who do not admit emotional or personal problems tend to be markedly more dissatisfied with services (19). Hopton et al. found that patients with psychological distress (as measured by the emotional reaction dimension of the Nottingham Health Profile) were more dissatisfied with GP consultation (20). On the other hand, a low but statistically significant correlation between ratings of satisfaction and more specific indices of depression (Zung Self-Rating Depression scale) was found by Linn & Greenfield among chronically ill patients (21), whereas Roberts et al. (18) failed to find a significant relationship between measures of service satisfaction and a depression checklist (SCL-6). Therefore, further investigations into the relationship between patient satisfaction and depression level are needed, as well as studies aimed at investigating the influence of expectations on patient satisfaction ratings. On the contrary, anxiety (as measured in this study) seems not to influence the level of patient satisfaction.

(b) SAT-16 and functional independence (levels and changes), as measured by motor and cognitive FIM, are uncorrelated. Only a few studies have explored the influence of health status or functional status (and their progress) on patient satisfaction (22). Results were conflicting (5), possibly because of the strong differences in the services provided and populations assessed. As far as rehabilitation is concerned, the present study confirms the finding by Heinemann et al. (17) that patient satisfaction is unrelated, at either admission or discharge, to the severity of motor and cognitive disability (as measured by the FIM), and to the functional improvement during hospital stay. Functional status and outcome, therefore, seems a minor determinant—if any—of patients' satisfaction.

(c) There is no relationship between SAT-16 and age or educational level. A recent meta-analysis comments that patient background variables show inconsistent relationships with satisfaction or, at best, their influence is too weak to be clinically meaningful (23). As for age, some authors have reported that older people tend to show higher levels of satisfaction with health care and to be more satisfied with most aspects of their hospital care than do younger or middle-aged patients (24, 25). On the contrary, Heinemann et al. found that younger patients were more satisfied with the care they received than older patients in rehabilitation (17), and Lee & Kasper described less likelihood of high satisfaction among old-old (80+ years) than in young-old (65–79 years) living in the community (26). We did not find a significant association

between age and life satisfaction, in agreement with Fuhrer et al. (27) and Bach & Tilton (28). Regarding the relationship between patient satisfaction and educational attainment, Hall & Dornan pointed out a trend indicating that greater satisfaction is associated with lower levels of education (23). In our sample an extremely small (statistically non-significant) positive correlation was found.

As a side result, the overall satisfaction with life inversely correlated with both state and trait anxiety levels, and did not correlate with functional independence (as measured by the FIM) This latter finding is consistent with previous reports on persons with spinal cord injury (27–29). In summary, this study suggests that bio-functional, sociodemographic and emotional variables have a rather small, if any, influence on the patient ratings of satisfaction with the rehabiltation services received. Conversely, expectations might have a role in the manifestation of patient satisfaction. This suggests that great attention should be paid also to any report of dissatisfaction contained in the open section of SAT-16, in order to better understand both the patient's perspectives and needs.

Care should be taken in generalising these results, because of the small size and limited age range of this convenience sample. Patients came from a unique facility, and suffered from orthopaedic impairments, only.

Within these limits, the results seem to confirm that patients' satisfaction should be measured "per se", as an important complement to more objective outcome measures. A satisfied patient may be more likely to comply with treatment regimens (5). Therefore, the information collected by the satisfaction questionnaire is of practical relevance for a focused interventions within a framework of continuous quality improvement (3).

REFERENCES

1. Ware JE. How to survey patient satisfaction. Drug Intell Clin Pharm 1981; 15: 892–899.
2. Donabedian A. Criteria, norms and standards of quality: what do they mean? Am J Publ Health 1981; 71: 409–412.
3. Cleary PD, McNeil BJ. Patient satisfaction as an indicator of quality care. Inquiry 1988; 25: 25–36.
4. Sitzia J, Wood N. Patient satisfaction: a review of issues and concepts. Soc Sci Med 1997; 45: 1829–1843.
5. Keith RA. Patient satisfaction and rehabilitation services. Arch Phys Med Rehabil 1998; 79: 1122–1128.
6. Folstein MF, Folstein SE, McHugh PR. "Mini-Mental State": a practical method for grading the cognitive state of patients for the clinician. J Psychiat Res 1975; 12: 189–198.
7. Franchignoni F, Benevolo E, Ottonello M, Tesio L. Assessment of a patient satisfaction scale in rehabilitation [in Italian]. Minerva Med 1997; 88: 237–244.
8. Franchignoni F, Benevolo E, Ottonello M, Tesio L, Battaglia MA. Validity and reliability of a new questionnaire on patient satisfaction in rehabilitative therapy [in Italian]. Minerva Med 1998; 89: 57–64.
9. Mc Dowell I, Newell C. Measuring health: a guide to rating scale and questionnaires. New York, Oxford University Press; 1987. p. 204–223.
10. Neugarten BL, Havingurst RJ, Tobin SS. The measurement of life satisfaction. J Gerontol 1961; 16: 134–143.
11. Franchignoni F, Tesio L, Ottonello M, Benevolo E. Life Satisfaction Index: Italian version and validation of a short form. Am J Phys Med Rehabil 1999; 7: 509–515.
12. Spielberger CD, Gorsuch RL, Lushene RE. State-Trait Anxiety Inventory (STAI) Test Manual for Form X. Palo Alto, CA: Consulting Psychologist Press, 1970.
13. Linacre JW, Heinemann AW, Wright BD, Granger C, Hamilton BB. The structure and stability of the functional independence measure. Arch Phys Med Rehabil 1994; 75: 127–132.
14. Dodds TA, Martin DP, Stotov WC. Deyo RA. A validation of the functional independence measure and its performance among rehabilitation inpatients. Arch Phys Med Rehabil 1993; 74: 531–536.
15. Rubin HR. Can patients evaluate the quality of hospital care? Med Care 1990; 47: 267–326.
16. Abramowitz S, Cote AA, Berry E. Analyzing patient satisfaction: a multianalytic approach. Q Rev Bull 1987; 13: 122–130.
17. Heinemann AW, Bode R, Cichowsski KC, Kan E. Measuring patient satisfaction with medical rehabilitation J Rehabil Outcomes Meas 1997; 1: 52–65.
18. Roberts RE, Pascoe GC, Attkisson CC. Relationship of service satisfaction to life satisfaction and perceived well-being. Eval Prog Plan 1983; 6: 373–383.
19. Greenley JR, Young TB, Schoenherr RA. Psychological distress and patient satisfaction. Med Care 1982; 20: 373–385.
20. Hopton JL, Howie JGR, Porter MD. The need for another look at the patient in General Practice satisfaction surveys. Journal of Family Practice 1993; 10: 82–87.
21. Linn LS, Greenfield S. Patient suffering and patient satisfaction among the chronically ill. Med Care 1982; 20: 425–431.
22. Fuhrer MJ. Subjective well-being: implications for medical rehabilitation outcomes and model of disablement. Am J Phys Med Rehabil 1994; 73: 358–364.
23. Hall J, Dornan M. Patient sociodemographic characteristics as predictors of satisfaction with medical care: a meta-analysis. Soc Sci Med 1990; 30: 811–818.
24. Locker D, Dunt D. Theoretical and methodological issues in sociological studies of consumer satisfaction with medical care. Soc Sci Med 1978; 12: 283–292.
25. Zastowny TR, Roghmann KL, Hengst A. Satisfaction with medical care: Replications and theoretic reevaluation. Med Care 1983; 21: 294–322.
26. Lee Y, Kasper JD. Age differences in ratings of medical care among older adults living in the community. Aging 1999; 11: 12–20.
27. Fuhrer MJ, Rintala DH, Hart KA, Clearman R, Young ME. Relationship of life satisfaction to impairment, disability and handicap among persons with spinal cord injury living in the community. Arch Phys Med Rehabil 1992; 73: 552–557.
28. Bach JR, Tilton MC. Life satisfaction and well-being measures in ventilator assisted individuals with traumatic tetraplegia. Arch Phys Med Rehabil 1994; 75: 626–632.
29. Warren L, Wrigley JM, Yoels WC, Fine PR. Factors associated with life satisfaction among a sample of persons with neurotrauma. J Rehabil Res Dev 1996; 33: 404–408.