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alth Care Services." *Medical Care*

Goldberg, E. S. Bloomfield, J. P.  
Hospitals in a Randomized Trial  
*Medicine* 315, no. 20 (13 Novem-

wster, and H. Krakauer. "Using  
ortality." *Medical Care* 29, no. 11

. Rohrenbach, T. Thell, A. Smith,  
ota Project: A Focused Approach  
o. 4 (Winter 1990): 359-67.

onal Comparison." *Journal of the*  
ber 1991): 2268-71.

w York: Oxford University Press,

f U.S. Health Services Reform."  
4 (23-30 June 1993): 3136-9.

ey, C. H. Sox, C. Gaudette, and  
are in Elderly Men: A Random-  
1 252, no. 17 (2 November 1984):

s of Avoidable Hospitalization  
." *Journal of the American Medical*

ry Care, Quality Improvement,  
*Medical Quality* 8, no. 2 (Summer

d M. Mussman. "Poverty, Race,  
*American Journal of Public Health* 78,

CA: Sage, 1991.

## Quality of Care and Patient Satisfaction: A Review of Measuring Instruments

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*Surveying the literature on the assessment of quality of care from the patient's perspective, the concept has often been operationalized as patient satisfaction. Patient satisfaction has been a widely investigated subject in health care research, and dozens of measuring instruments were developed during the past decade. Quality of care from the patient's perspective, however, has been investigated only very recently, and only a few measuring instruments have explicitly been developed for the assessment of quality of care from the patient's perspective. The authors consider patient satisfaction as an indicator of quality of care from the patient's perspective. This review is concerned with the question of whether any reliable and valid instruments have been developed to measure quality of care from the patient's perspective.*

Feedback from the users of health care facilities and institutions is generally considered to be vital for quality assessment and quality assurance. Of all patients, especially the chronically ill are considered as experts in evaluating the quality of health care services. The importance of the patients' expert opinions will increase when more hospital care is substituted by home care

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and patients will receive a range of care services in their homes. Anyone interested in items of quality such as autonomy, continuity, and satisfaction will have to take the patients' knowledge of the home care process into account.

Assessment of quality of care from the patient's perspective (QCPP) presents us with problems such as how to define quality of care and questions such as, what is the content of the patient perspective and how can it be measured? Among the diverging interpretations of quality, consensus has been reached regarding the definition of quality by the International Organization of Standardization (ISO) (1990, 6): "The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs." The consumer's satisfaction with services and, among other things, his or her needs regarding health care are central in the theoretical framework of the ISO standards. In health care research, however, quality assurance is developed mostly from the providers' perspective (e.g., the audits and quality standards by physicians). Given the often observed fact that the patient's perspective differs substantially from the physician's perspective regarding priorities in health services (Bensing 1991; Smith and Armstrong 1989; Potts, Mazucca, and Brandt 1986; Waal, Lako, and Casparie 1993; Batalden and Nelson 1991), scientific research has paid remarkably little attention to the assessment of QCPP.

In the Netherlands, the National Council for Public Health (1986) and the Advisory Council on Health Research (1990) have developed a perspective-specific aspect approach of the quality of care. They differentiated between five perspectives on the quality of care: (1) of patients/consumers, (2) of professionals, (3) of health care institutions, (4) of insurers, and (5) of the government. Each perspective is supposed to have its own standards and perceptions of the quality of care. A highly differentiated package of home care comprising a home help, a community nurse, a general practitioner, and a specialist can be seen as very appropriate in the perspective of the health professionals, but it can be seen by the patient as an invasion of his or her privacy and autonomy. The Advisory Council on Health Research (1990) lists twenty-six quality aspects of care from the patient's perspective such as patient satisfaction, autonomy, continuity, and so on (see Appendix A; cf. Wensing, Grol, and Smits 1994).

Surveying the literature on the assessment of QCPP, the concept has often been operationalized as patient satisfaction. Patient satisfaction has been a widely investigated subject in health care research: more than 3,000 articles were published and dozens of measuring instruments were developed during the past decade. QCPP, however, has been investigated only very recently, and only a few measuring instruments have been developed explicitly for the assessment of QCPP (e.g., Nelson et al. 1989; Meterko et al. 1990). As patient

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satisfaction is an important element of QCPP, it is highly advisable to review the literature on patient satisfaction measuring instruments before developing a new QCPP measuring instrument.

In this article, we consider patient satisfaction as one of the twenty-six indicators of QCPP. We define QCPP as a set of individual, expectation-related judgments of aspects of health services regarded as important by the patient. It means that, from the patient's perspective, quality standards are determined by the patient's expectations of care and that quality judgments are related to the patient's expectations. Dissatisfaction with health services is the outcome of the perception of a quality aspect that is not up to the expected quality. In brief, quality judgment (QJ) is equal to perception (P) minus expectation (E):  $QJ = P - E$ . Patient satisfaction is a quality judgment concerning the general valuation of health services by a patient.

Looking at the number of publications on QCPP assessment and the problems that were discussed, 1983 seems to be an important year (see Figure 1). Figures for 1983 show not only an increased number of publications on the subjects mentioned but also the publication of several "state of affairs" review articles. In all reviews, QCPP is operationalized as patient satisfaction. Pascoe (1983) reviewed patient satisfaction with primary care services, Lebow (1982a,b, 1983a,b,c) and El-Guebaly et al. (1983) looked at satisfaction with mental health care services, and Lochman (1983) described satisfaction with medical consults. Covering a wide field of interest, these review articles had one thing in common: a very critical attitude toward the existing research into the assessment of quality of care and patient satisfaction. Pascoe (1983) observed many lacunas in the assessment of patient satisfaction with primary care services: little theory or model development, little standardization of measuring instruments, low reliability of instruments on the micro level, and uncertainty about the validity of instruments. Test scores offered little insight into patient satisfaction because of the skewness of scores—ambiguity concerning the relations between satisfaction scores and sociodemographical variables and between patient satisfaction and outcome scores such as clinical outcome, medical consumption, and compliance. Moreover, measuring instruments did not go into individual differences regarding expectations, perceptions, and attitudes: "The quality of patient ratings may depend not only on the rigor of evaluators and researchers, but partially on how patients believe their responses are treated by investigators, administrators, and health care providers" (Pascoe 1983, 204).

In his analyses of instruments measuring patient satisfaction with mental health care services, Lebow (1982a,b, 1983a,b,c) confirmed the problems observed by Pascoe. Despite these problems, Lebow (1983a) saw light at the end of the tunnel:

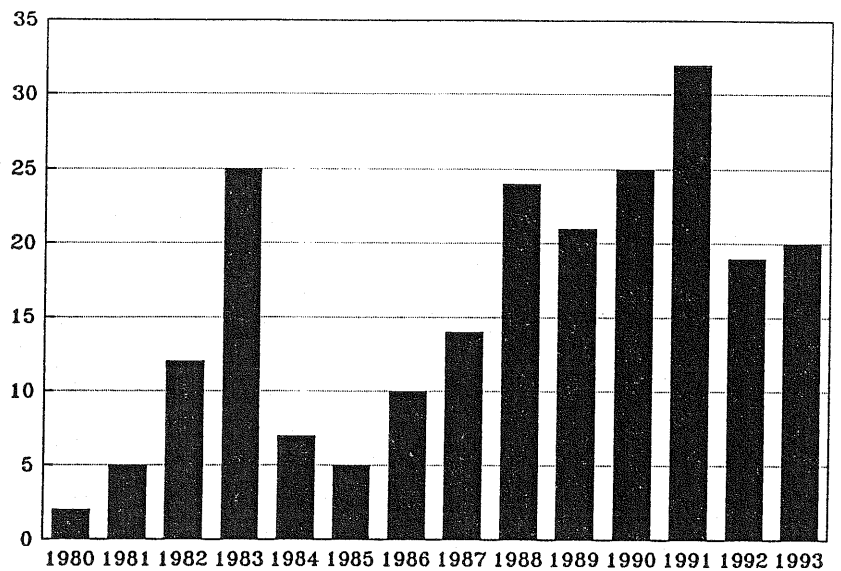


FIGURE 1 Number of Selected Publications on the Measurement of Quality of (Home) Care from the Patient's Perspective Published between 1980 and 1993

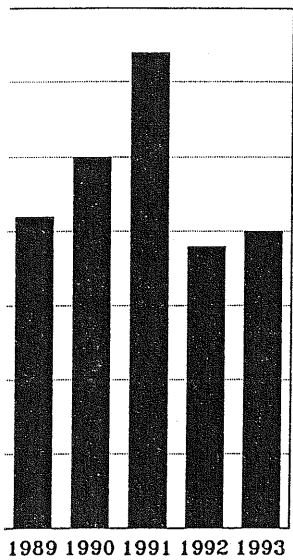
Source: Adjustment of figure in Campen et al. (1992, ix).

Only recently has a body of work which may be said to be "scientific" begun to emerge. . . . This emergence of better controlled work suggests promise for the future of this research; better scales and greater specificity in research are apparent in recent efforts. (p. 732)

Further on in this review, we see whether these problems have indeed been solved by researchers characterized by Lebow as the "second generation." The analyses of El-Guebaly et al. (1983) and Lochman (1983) subscribe to the analyses of Pascoe and Lebow.

Summarizing the conclusions from these review articles, we find that the research into QCPP assessment that was published before 1983 suffered from three main problems: (1) insufficient theoretical foundation; (2) methodological weaknesses of measuring instruments regarding dimensions, validity, and reliability of the (sub)scales; and (3) low specificity of results for adequate application.

Since 1983, more than ten years have passed, and a legitimate question is whether the theoretical and methodological shortcomings that were observed



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by the reviewers for the period prior to 1983 are still prevalent in the publications that appeared after 1983. Our basic research question for this article is as follows:

Have any instruments been developed and/or applied to measure quality of home care<sup>1</sup> from the patient's perspective that do not have the marked theoretical and methodological shortcomings of the instruments that were developed before 1983?

## METHODS

There are several ways to review the literature, and standards for the quality of reviews differ. We adhere to the standards stated by Silagy (1993) concerning search methods, evaluation of the literature, and so on.<sup>2</sup> Our review of the literature published during the period 1983-1993 about measuring the quality of home care from the patient's perspective is primarily based on a preparatory literature study (van Campen, Friele, and Kerssens 1992) and is updated with the most recent publications. This bibliography restricts itself to methods and methodology in assessing QCPP in general and to specific data on patient views of the quality of primary care and relevant domains, including home care. During the last decade, more than 3,000 publications appeared focusing on QCPP, most of them concentrating on patient satisfaction.

Titles were drawn from the databases of MEDLINE, Psychological Abstracts, the Dutch Ministry of Health, and the NIVEL institute.<sup>3</sup> The searches were conducted with a combination of the key words "patient/consumer satisfaction," "quality of care," and "patient perspective" on the one hand and several key words on methodology, measurement, and assessment on the other (see Appendix B for key words used). Besides, we restricted ourselves to publications from 1980 to 1993 inclusive, and so we covered the literature after the 1982 and 1983 reviews mentioned without losing important publications from the early 1980s. A collection of more than 500 publications was the result.

The scope of the study was further limited to (1) methodological articles<sup>4</sup> and (2) research articles that dealt with or were relevant to home care. This procedure resulted in a total of 165 titles that were included in the bibliography and another 49 titles that were published after the searches for the bibliography had been closed. The number of publications that appeared yearly during the period between 1980 and 1993 is shown in Figure 1.

The figure shows two peaks, one in 1983 and one in 1991. These peaks are also found in the tables of a review of patient judgments on the quality of

general practitioners' care in the Netherlands by Wensing, Grol, and Smits (1991; see also Wensing et al. 1994). Judging by numbers only, 1983 seems to close a period. Between 1986 and 1991, the number of publications increased gradually.

Given the fact that we are looking for an instrument to be applied in a series of studies into what would be the best possible way to measure the quality of home care from the patient's perspective, and so as to discriminate between the existing instruments, all articles were carefully studied and evaluated regarding their theoretical and methodological characteristics.

Most instruments used during the last decade to measure QCPP consist of self-developed questionnaires. We found 113 measuring instruments. Only 41 instruments had reportedly been tested for reliability or validity, and 8 instruments were tested twice or more often. Compared to the many once-used or once-tested measuring instruments, these 8 stood out as having been elaborately prepared and tested. We examined these 8 measuring instruments in detail and judged them against the criteria explained in what follows.

With a view to the special demands of quality research and the problems encountered in the reviews of Pascoe (1983), Lebow (1983a,b), El-Guebaly (1983), and Lochman (1983), we formulated a set of five requirements that would make an instrument suitable for assessing QCPP with a special eye to the evaluation of home care in the broad sense (see note 1). The five criteria can be considered as an operationalization of the standards set in the different review articles about patient satisfaction combined with the specific requirements of measuring QCPP. First, the instrument has to be based on clear definitions, if possible derived from existing theories about the patient's perspective on quality of care. The instrument has to be (1) theoretically sound—that is, based on clear concepts and assumptions of quality of care, patient satisfaction, and patient views. Second, the results from our study of the literature show that the most promising way to measure the quality of care is to discriminate between different aspects of the health care and health care services. Therefore, the instrument needs to be (2) structured around subscales representing different aspects of QCPP. A third criterion concerns the methodological and psychometrical characteristics of the instrument. It has to be (3) reliable and valid, capable of passing the statistical tests normally applied to composite instruments. A fourth criterion is derived from the fact that the instrument will be applied in the measurement of the quality of care. In other words, the instrument must be (4) easily feasible in surveys among large populations. The fifth, and last, criterion relates to the fact that the instrument (5) will be applied in home care evaluation so that results can easily be implemented in future quality assurance systems and programs designed to improve health care for patients living at home. For the evaluation of the

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ment to be applied in a series of studies to measure the quality of care as to discriminate between different quality studies and evaluated characteristics.

to measure QCPP consist of measuring instruments. Only 41 instruments of validity, and 8 instruments related to the many once-used or instruments that have been elaborated out as having been elaborated measuring instruments in the literature are mentioned in what follows.

research and the problems involved in the development of a questionnaire (Bouwman, 1983a,b), El-Guebaly (1983) list of five requirements that a QCPP with a special eye to the literature (see note 1). The five criteria and standards set in the different studies with the specific requirements has to be based on clear theories about the patient's perspective has to be (1) theoretically sound assumptions of quality of care, (2) the results from our study of measuring the quality of care in health care and health care services structured around subscales and criteria concerning the methodology of the instrument. It has to be based on the fact that the instrument is normally applied in the field and derived from the fact that the instrument measures the quality of care. In other words, in surveys among large groups of patients the fact that the instrument is used and that results can easily be compared and programs designed to improve the quality of care. For the evaluation of the

instruments, we valued the five requirements equally for practical reasons, notwithstanding the fact that the relative valuation is more complicated. Their ranking of 1 to 5 results from the "top-down" perspective, starting with the most abstract problems (theoretical foundation of instrument) and descending to the more practical problems (implementation of instrument).

## RESULTS

None of the set of twice-or-more-often-tested measuring instruments ( $n = 8$ ) met all requirements. Five instruments met at least three of the five requirements.<sup>5</sup> We scrutinize the evaluation of the five instruments selected in more detail and include a short introduction of the history of the development of the instruments, details about the testing procedures, their psychometric characteristics, and the way these instruments are based on clear concepts and assumptions specifying the patient's perspective. The results are summarized in Table 1.

### PATIENT SATISFACTION QUESTIONNAIRE

The Patient Satisfaction Questionnaire (PSQ) was developed to assist in the planning, administration, and evaluation of health services delivery programs (Ware and Snyder 1975). It started with a survey that included more than 900 items administered in person by interviewers. The instrument was field tested over a four-year period. In 1976, a short version of 55 items, called Form II, was published (Ware et al. 1983).

1. The PSQ is not based explicitly on a theory of patient satisfaction. Patient satisfaction is implicitly conceptualized as a patient's evaluation of health care services and providers (Ware et al. 1983). The PSQ's theoretical foundation is therefore judged as negative.
2. The PSQ discriminates between different aspects of care from the patient's perspective, which can be regarded as seven dimensions of patient satisfaction. The questionnaire covers seven dimensions of the domain of patient satisfaction: Interpersonal Manner, Technical Quality/Competence, Accessibility/Convenience, Finances/Cost, Continuity, Availability, and a scale for General Satisfaction. Regarding the subscales representing major aspects of QCPP, the instrument is evaluated as positive.
3. In several studies, the PSQ taxonomy of dimensions proved to be internally consistent and stable, but the validity of the instrument is questionable. A test for construct validity of patient satisfaction is difficult due to the absence of a good theory or conceptual model of patient satisfaction (Ware et al. 1983). Originally, the PSQ dimensions emerged in a study including four household

TABLE 1 Evaluation of Five Measuring Instruments by Five Criteria

	PSQ	CSQ	SPPCS	PJHQ	SERVQUAL
1. Theoretical foundation	-	-	-	-	+
2. Containing subscales representing major aspects of QCPP	+	-	-	+	-
3. Reliability tested	+	+	+	+	+
Validity tested	-	-	-	+	+
4. Feasible in large populations	+	+	+	+	+
5. Instrument has been applied in home care evaluation	+	+	+	-	-

Note: PSQ = Patient Satisfaction Questionnaire; CSQ = Client Satisfaction Questionnaire; SPPCS = Satisfaction with Physician and Primary Care Scale; PJHQ = Patient Judgment of Hospital Quality instrument; SERVQUAL = Service Quality instrument; QCPP = Quality of Care from the Patient's Perspective.

surveys, the number of respondents ranging from 232 to 640. Eighty-seven items were factor analyzed and logically analyzed into factor homogeneous item dimensions (FHIDs) with internal consistency ranging from .51 to .89 (Ware, Davies-Avery, and Stewart 1978). Replication of the reliability tests of the PSQ dimensions was executed by Pascoe, Attkisson, and Roberts (1983) and Roberts and Tugwell (1987). In a study of 147 health center patients, Pascoe et al. (1983) found internal consistency for the PSQ dimensions ranging from .60 (Accessibility) to .86 (Interpersonal Manner); overall consistency was .89. In interviews with 59 intensive care patients, Roberts and Tugwell (1987) reported that internal consistency ranged from .43 for the Finances scale to .85 for the Interpersonal Manner scale; overall internal consistency was .90. The test-retest coefficient was .64 for the PSQ. Conclusion: reliability is tested, whereas validity is not.

4. The design of the PSQ Form II with its fifty-five Likert-type items makes this scale an easily applicable instrument for large populations; the instrument can take the form of a postal survey. The answers of the respondents can be analyzed in a statistically sound way. The feasibility of the instrument in large populations is indicated as positive.
5. Finally, the PSQ has been used in many studies. Eight studies used the questionnaire, five studies used the PSQ as a source for developing a new questionnaire, and six studies used the PSQ as part of the questionnaire (van Campen et al. 1992). The PSQ was administered to a wide variety of respondents, among them chronically ill patients (McCusker 1984), family practice patients (MacKeigan and Larson 1989; Chao 1988), health center patients (Pascoe et al. 1983), and HMO subscribers (Brody et al. 1989; Cryns et al. 1989). Conclusion: the instrument has been applied in the evaluation of home health care services.



## ents by Five Criteria

SPPCS	PJHQ	SERVQUAL
-	-	+
-	+	-
+	+	+
-	+	+
+	+	+
+	-	-

Satisfaction Questionnaire; SPPCS = Patient Judgment of Hospital Quality; SERVQUAL = Quality of Care from the Patient's

1232 to 640. Eighty-seven items into factor homogeneous item ranging from .51 to .89 (Ware, the reliability tests of the PSQ and Roberts (1983) and Roberts er patients, Pascoe et al. (1983) ons ranging from .60 (Accessi-sistency was .89. In interviews well (1987) reported that intercale to .85 for the Interpersonal l. The test-retest coefficient was whereas validity is not.

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## CLIENT SATISFACTION QUESTIONNAIRE

The Client Satisfaction Questionnaire (CSQ) was developed at the end of the 1970s by Larsen et al. (1979) as an eight-item scale for assessing general patient satisfaction with health care services. Items were generated by consulting published and unpublished sources and by presenting a pool of eighty-one items to thirty-two mental health care professionals for assessing the degree to which each of the individual items tapped one of eight dimensions: Physical Surroundings, Support Staff, Kind/Type of Service, Quality of Service, Amount, Length or Quantity of Service, Outcome of Service, General Satisfaction, and Procedures. After a further reduction, a scale with thirty-one items, with a 4-point anchored answer without the neutral position, was administered to 248 exclusively outpatient mental health clients or ex-clients. Principal components factor analysis of their responses produced one factor explaining 75 percent of the common variance. It was concluded that only one salient dimension emerged from the scale that was constructed. This dimension was called General Satisfaction with services.

1. The CSQ is not based explicitly on a theory of patient satisfaction. Patient satisfaction is conceptualized implicitly as personal satisfaction with specific services. The CSQ's theoretical foundation is judged as negative.
2. The CSQ operationalizes patient satisfaction as a unidimensional concept and does not discriminate different aspects within this concept. Concerning the subscales representing major aspects of QCPP, the instrument is evaluated as negative.
3. The CSQ has a unidimensional structure and is regarded as an instrument with internal consistency. Eight items were selected that loaded highly on the unrotated factor named General Satisfaction and exhibited good interitem correlation. Cronbach's alpha was found to be .93. The alpha coefficient for the eight-item version of the CSQ was .90 (Roberts, Pascoe, and Attkisson 1983), and alpha coefficients of .91 and .84 were reported (Pascoe et al. 1983) for an eighteen-item version of the CSQ (Levois, Nguyen, and Attkisson 1981). A CSQ-7 was reported on with an alpha of .73 (Daly and Flynn 1985), a CSQ-3 with alpha coefficients of .83 and .82, and a CSQ-4 with alpha coefficients of .85 and .88 (Greenfield 1983). The validity of the instrument has been criticized by Hays and Ware (1986). They found the CSQ phrasing with a personal referent to be highly influenced by a socially desirable response set. According to Hays and Ware, this phenomenon may explain the highly skewed results of questionnaires containing items with a personal referent. Conclusion: the reliability is tested, and the validity is criticized by external reviewers.
4. The CSQ is a written questionnaire and can be mailed to large numbers of patients. The answering categories are not uniform, which may cause difficulties in analyzing and combining the different data sets. The feasibility of the instrument in large populations is judged as positive.

5. The different versions of the CSQ questionnaire have been used in several populations, including patients visiting an urban public health center (Roberts et al. 1983; Pascoe et al. 1983) and among older HMO patients (Cryns et al. 1989). Conclusion: the instrument has been applied in the evaluation of home health care services.

### THE SATISFACTION WITH PHYSICIAN AND PRIMARY CARE SCALE

The first publication on the Satisfaction with Physician and Primary Care Scale (SPPCS) dates back to 1970 (Hulka et al. 1970). Lay and scientific literature was reviewed to determine areas relevant for assessing patient satisfaction with and their attitudes toward medical care. Three areas were frequently encountered: Professional Competence, Personal Qualities, and Cost/Convenience.

1. The SPPCS is not based explicitly on a theory of patient satisfaction. Patient satisfaction is conceptualized implicitly in the domain of physician and primary care. The SPPCS's theoretical foundation is judged as negative.
2. The scale does not discriminate between different well-defined aspects of patient satisfaction or the somewhat broader quality of care but is directed to three global dimensions: Professional Competence, Personal Qualities, and Cost/Convenience. Concerning the subscales representing major aspects of QCP, the instrument is evaluated as negative.
3. During the process of development, the internal consistency of the SPPCS was tested and retested. Starting with 300 items, 149 statements remained after editing, and these 149 items were presented to three groups of judges: physicians, social workers, and members of the Chapel Hill Women's Club. They were asked to score each item on a scale of favorableness or unfavorableness. These scores were used as a basis for determining the relevance of an item to patient satisfaction. For each item, a median favorableness score was calculated together with a measure of variance. Items being scored as either favorable or unfavorable were selected for inclusion in two distinct scales. In a pilot study ( $n = 17, 17, \text{ and } 15$  for the three respective dimensions), parallel form reliability was tested. Parallel reliability for the Cost/Convenience dimension was low ( $r = .43$ ). For the other dimensions, parallel reliability was higher ( $r = .75$  and  $.63$ ). After this pretest, the questionnaire was edited once more, resulting in a 41-item questionnaire with response categories of "agree" or "disagree." Satisfaction scores could be calculated on the basis of the median scores of those items with which a respondent agreed. In 1974, the authors of the questionnaire reported certain inadequacies of the scales (Zyzanski, Hulka, and Cassel 1974). Designation of items to each dimension did not seem to be valid. To solve this inadequacy, thirty-nine experienced public health nurses were asked to allocate the original 149 items to the three scales. This finally resulted in a new set of 42 items.

re have been used in several public health center (Roberts MO patients (Cryns et al. 1989). The evaluation of home health

#### Physician and Primary Care

Lay and scientific literature regarding patient satisfaction with care were frequently encountered, and Cost/Convenience.

of patient satisfaction. Patient opinion of physician and primary care was negative.

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consistency of the SPPCS was 19 statements remained after three groups of judges: physician-Hill Women's Club. They were assess or unfavorableness. These relevance of an item to patient assessment score was calculated to score as either favorable or distinct scales. In a pilot study (ions), parallel form reliability convenience dimension was low ( $r = .75$  and  $.63$ ). In addition, resulting in a 41-item "agree" or "disagree." Satisfaction scores of those items with the questionnaire reported (a, and Cassel 1974). Designable valid. To solve this inadequacies were asked to allocate the resulted in a new set of 42 items.

The response format was also reconsidered, introducing a 5-point Likert-type method of scoring, and a new scoring scheme was selected: the Scale Product method. A respondent's score was calculated as a product of the response on a Likert-type scale, and a scale value for each item was calculated on the basis of the respondent's judgments. In a pretest, the Scale Product method yielded higher split-half reliability coefficients than did the earlier scoring method. Also, reliability for the three scales was highest when using the Scale Product method. Again, the Cost/Convenience scale was the least reliable (Zyzanski et al. 1974: table 2). The validity of the SPPCS versions was criticized by Stamps & Finkelstein (1981). According to them, the validity of the questionnaire was restricted to face validity only. Conclusion: reliability is tested, whereas validity is not tested and is criticized by external reviewers.

4. The instrument uses Likert-type items and is easily applicable with large number of respondents. The feasibility of the instrument in studies of large populations is judged as positive.
5. The SPPCS has been used in several study populations, among them outpatient clinic patients (Stamps and Finkelstein 1981), ambulatory care patients (Linn, Linn, and Stein 1982), and patients of a multispecialty primary care center (Merenstein and Hirsch 1989). Conclusion: the instrument has been applied in the evaluation of home health care services.

#### THE PATIENT JUDGMENTS OF HOSPITAL QUALITY INSTRUMENT

The development of the Patient Judgment of Hospital Quality (PJHQ) instrument has been reported on extensively in an eight-article supplement in *Medical Care*. In this supplement, Meterko et al. (1990) edited the report on the results of the six-month Hospital Satisfaction project. It is one of the few instruments that aim at measuring quality of care and is not restricted to the concept of patient satisfaction. The researchers analyzed verbatim written comments on patient satisfaction from patients and conducted three focus group discussions. The contents of these sources were analyzed. This resulted in a questionnaire with 106 items, 46 of which were key items. These 46 items followed the "natural path" in the hospital: Admission (4 items), Daily Care (14), Nursing Care (5), Medical Care (5), Other Hospital Staff (3), Living Arrangement and the Hospital Environment (10), Discharge (3), and Billing (2). Items consisted of a signpost followed by a descriptor, as with Cleary et al. (1989). An exploratory factor analysis with six factors explained 68 percent of the total variance, with one large unrotated first factor. These factors are Nursing and Daily Care, Hospital Environment and Ancillary Staff, Medical Care, Admissions, Discharge, and Billing. One factor was difficult to interpret: it is referred to as Information.

1. The PJHQ is not based explicitly on a theory of patient judgments. Therefore, the PJHQ's theoretical foundation is judged as negative.
2. The instrument discriminates between several aspects of hospital care. Regarding the subscales representing major aspects of QCPP, the instrument is evaluated as positive.
3. The PJHQ subscales are internally consistent. Correlations between items within a scale virtually always exceeded correlations between items from different scales. All scales but one had an alpha greater than .70. The one other scale was Overall Health Outcomes with only two items and an alpha greater than .50. Correlations of scales with questions bearing the same dimensions were higher than correlations between different scales. In a retest of the PJHQ, Carey & Seibert (1993) reported a lower interscale consistency. They found a moderately strong construct validity, probably as an effect of the ambiguous interscale correlations. Construct validity was tested by analyzing the correlation between the six scales and by analyzing the correlations between the six scales and the variables Overall Quality, Recommendations and Intentions, and Overall Health Outcomes. The interscale correlations ranged from .44 to .76. The correlations between the scales and the validity indicator variables were moderately strong, ranging from .39 to .75. Conclusion: reliability and validity are tested.
4. The PJHQ has been administered to large numbers of patients. The feasibility of the instrument in large populations is evaluated as positive.
5. The instrument is especially directed to hospital care. The dimensions of the PJHQ focus on different aspects of hospital care and cannot be altered to include aspects pointing to the type of care that is received by patients outside a medical institution without the essential core of the instrument being affected. The instrument has not been applied in the evaluation of home health care services and is therefore judged as negative.

#### THE SERVICE QUALITY INSTRUMENT

1. The Service Quality (SERVQUAL) instrument is the only one out of the five selected instruments that is based explicitly on a conceptual model, viz. the Service Quality Model of Parasuraman, Zeithaml, and Berry (1985). The SERVQUAL measures general quality of services from the customer's perspective and not specifically from the patient's perspective. The definition of service quality is as follows: "A function of the magnitude and direction of the gap between expected and perceived service" (Parasuraman et al. 1985, 46). The theoretical foundation of the SERVQUAL is judged as positive.
2. The instrument discriminates between different dimensions of the quality of services from the consumer's point of view. The SERVQUAL dimensions are Tangibles, Reliability, Responsiveness, Assurance, and Empathy (Parasuraman, Zeithaml, and Berry 1988). Although there are similarities between the SERVQUAL dimensions and the QCPP dimensions, as a whole, the SERVQUAL taxonomy is not judged as a valid representation of the major aspects of QCPP.

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3. The subscales of the SERVQUAL were found to be internally consistent, and experts have rated its content validity as satisfying (Parasuraman et al. 1988). After formulating the definition and determining ten dimensions on the basis of focus group interviews with consumers and in-depth interviews with executives, ninety-seven items representing these dimensions were generated. Each item was recast into an expectation statement and a perception statement and was constructed as a Likert type. The 2 × 97-item instrument was piloted with 200 respondents judging on five different commercial service categories. For each item, a difference score Q (perceived quality) was computed by the Perception rating (P) minus the Expectation rating (E). An iterative sequence of computing alpha coefficients and item-to-total correlations, followed by deletion of items, resulted in a set of fifty-four items with alpha values ranging from .72 to .83 across the ten dimensions. Examining the dimensionality resulted in a final pool of thirty-four items representing seven distinct dimensions with alpha values ranging from .72 to .85. The combined reliability for the thirty-four-item scale was .94. The instrument was again tested with 4 × 200 respondents. The scale was purified in a second stage, resulting in twenty-two items divided over five dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy) with alpha values ranging from .64 to .84; total scale reliability was close to .90. Because of the procedures developed (focus group interviews with customers and in-depth interviews with executives), the content validity was satisfactory, according to Parasuraman et al. Convergent validity, tested as the correlation between an overall quality rating and SERVQUAL, was strong and persistent (Parasuraman et al. 1988; cf. Babakus and Mangold 1992). Conclusion: reliability and validity are tested.
4. The instrument is applied to large numbers of respondents. The feasibility of the instrument in large populations is positive.
5. Except for physiotherapy (de Haan 1992), the SERVQUAL questionnaire has not been applied in the evaluation of home health care services as a whole. The SERVQUAL instrument has been applied mostly in the evaluation of commercial services. Babakus and Mangold (1992) adapted the SERVQUAL instrument for the evaluation of the quality of hospital care.

## DISCUSSION

Only 5 out of 113 selected instruments measuring QCPP are theoretically and/or methodologically sound enough for the assessment of QCPP. In the specific field of home care, none of the 8 twice-or-more-often-tested instruments met the five requirements. A first conclusion is that an instrument measuring quality of home care from the patient's perspective is still not available. A second conclusion is that on the basis of the evaluation of the five best instruments in the field of QCPP, sufficient theoretical and methodological knowledge is available to continue constructing a home care instrument. A third conclusion is that when one enters a new health care domain (e.g.,

home care), one should not start developing an instrument from scratch, as 73 of the selected 113 instruments did. Instead, it would be very fruitful to found the instrument on existing well-tested instruments and to make use of the tools or strategies these instruments offer. Reflecting on Lebow's (1983a) prophecy that a "second generation" will solve the main pre-1983 research problems, we conclude that there is not one instrument measuring QCPP that has improved much—at least by the five criteria we selected—as compared to the measuring instruments from before 1983. In fact, the three main problems in QCPP assessment observed by Pascoe and Lebow in 1983 have still not been solved. In the following, we discuss the main theoretical foundations and methodological tools in QCPP assessment and consider their implications for future research into the assessment of quality of home care from the patient's perspective.

### THEORETICAL IMPLICATIONS

The results of our study show that, mainly under the influence of consumer research, some theory has been integrated in the instruments that have been developed since 1983. However, the most commonly used instruments during this period were still developed *data driven*. Except for the SERVQUAL instrument, none of the five selected measuring instruments was deduced from a theory about quality of care or a theory of patient satisfaction. Theoretical development in this area has hardly affected the development of instruments and, reviewing recent literature, it seems that there are two more or less independent streams in research: one of theory development and one of instrument development.

A first serious opening toward a theoretical foundation for patient satisfaction research was provided by Linder-Pelz (1982b). She derived her definition of satisfaction from Fishbein and Ajzen's (1975) attitude theory and from job satisfaction research. Fishbein and Ajzen distinguish attitude from perception, the first being evaluative or affective in nature and the second being cognitive in nature (i.e., beliefs). An attitude is a general evaluation or feeling of favorableness or unfavorableness about the object in question. Job satisfaction research has emphasized the dimensionality of satisfaction. Combining these findings, Linder-Pelz (1982b) defines patient satisfaction as "positive evaluations of distinct dimensions of the health care" (p. 578). Linder-Pelz (1982a) tested Fishbein and Ajzen's theory that attitudes are determined by the interaction of beliefs (expectations) and valuations (values) regarding patient satisfaction (attitude) and beliefs (expectations). Although little support for the hypothesis of Fishbein and Ajzen was found (no correlation was found

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between the General Satisfaction factor and the product of the Expectation and Values ratings), Linder-Pelz (1982a, 587) stuck to the definition.

Many researchers working in the field of developing instruments measuring patient satisfaction have paid lip service to Linder-Pelz's model by adopting its definition, but few have used the well-tested conceptual model as a theoretical basis for the construction of their instruments. For example, an important finding of testing the Linder-Pelz (1982b) theory was that "expectations consistently explained most of the variance in satisfaction ratings" (p. 583). Nevertheless, the main instruments measure only valuations of patients, not their expectations of care.

Although it contains the most-cited definition of patient satisfaction, the validity of the Linder-Pelz model has been criticized on several occasions. Pascoe (1983) criticized the emphasis on affective reactions of the patients in the Linder-Pelz model whereas, as he argued, satisfaction is a result of the patient's rational calculations too. Following the trends in consumer research, Pascoe (1983) took into account psychological and consumer processes in the explanation of patient satisfaction. First, a patient makes cognitive and affective evaluations of health care services. These evaluations are based on a subjective standard. Both an assimilation and a contrast effect may operate on the subjective standard. Not every negative valuation will result in dissatisfaction. There seems to be a certain assimilation zone in which valuations will shift toward the subjective standard, resulting in satisfaction. Outside the assimilation zone, the valuations will shift away from the subjective standard, increasing the contrast between valuation and subjective standard and resulting in increased dissatisfaction or satisfaction.

Pascoe's model solved the problem of the influence of expectations on satisfaction by distinguishing between a subjective standard based on expectations, the evaluations, and the intermediating processes of assimilation and contrast. A second improvement is that cognitive evaluations of patients are taken into account too. Pascoe's assimilation-contrast model was confirmed in smaller studies (e.g., Kerssens and van Yperen, submitted), but it suffered the same fate as the Linder-Pelz model and was not worked out into a major measuring instrument.

Recently, Strasser, Aharony, and Greenberger (1993) elaborated the model of Pascoe into a comprehensive psychological model of the patient satisfaction process. It accounts for a variety of variables such as observed and unobserved stimuli, individual differences, judgments, and learning variables. Although it improved on Pascoe's model and seems to be a sound theoretical framework for patient satisfaction research, it lacks the connection to measuring instruments. It is hard to imagine how a measuring instrument can be deduced from

this theory, considering all the relevant variables. From the perspective of the theoretical foundation of measuring instruments, the comprehensive model of Strasser et al. has drifted away from the practical labor of instrument making.

A second interesting line in theory construction has evolved in consumer research. Already in 1983, consumer theories were more advanced—that is, more differentiated and better tested—than patient satisfaction models (Pascoe 1983). This tradition of theories is associated with theories of quality assurance and control that emerged from the goods sector during the 1980s (Parasuraman et al. 1985). One of them is the service quality approach, which has increasingly been applied to health care services (e.g., Babakus and Mangold 1992; Kerssens and van Yperen, submitted). From the perspective of measuring instruments, the main advantage of quality theories over more psychological theories of satisfaction is that theories of quality assurance systems consider the measurement of patient opinions as a phase in the circle of continuous quality improvement (Ovretveit 1992) and not, like more psychological theories do, as a research object in itself (e.g., Strasser et al. 1993). The SERVQUAL instrument developed by Parasuraman et al. (1985, 1988) is based on this body of knowledge and measures consumer satisfaction with service quality. In the SERVQUAL model, quality of services is defined as follows: "the quality that a consumer perceives in a service is a function of the magnitude and direction of the gap between expected service and perceived service" (Parasuraman et al. 1985, 46).

Theories of quality assurance explain QCPP as a perception minus an expectation of aspects of care. By contrast, theories of patient satisfaction explain QCPP as the patient's attitude or general feeling with respect to aspects of care. Quality of care instruments require more factual knowledge on the part of the patient, whereas satisfaction instruments require a more general judgment from her or him. For purposes of quality improvement, a quality of care instrument offers more specific information based on the patient's perceptions.

#### METHODOLOGICAL IMPLICATIONS

The patient perspective on quality differs essentially from perspectives of physicians, nurses, or policymakers. Of the five selected instruments, only the PJHQ offers a method for generating items that directly represent patients' views. Other designers of measuring instruments implicitly disregarded the difference between the physicians' and patients' perspectives and relied on the views of colleagues and physicians for the generation of items (van Campen et al. 1992). In line with this view are Aharony & Strasser (1993, 67),



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has evolved in consumer services more advanced—that is, more sophisticated satisfaction models (Parslow) with theories of quality in the health care sector during the 1980s. The quality approach, which focuses on services (e.g., Babakus and Strasser). From the perspective of quality theories over more theories of quality assurance (e.g., Parasuraman et al. 1985, 1988) is consumer satisfaction with services is defined as the perceived service is a function of the perceived service and perceived

a perception minus an assessment of patient satisfaction feeling with respect to more factual knowledge requirements require a more quality improvement, a perception based on the

ly from perspectives of used instruments, only the directly represent patients' explicitly disregarded the perspectives and relied on generation of items (van Campen & Strasser (1993, 67),

who conclude that "most of the studies rarely speak to the issue of qualitative data analysis as a methodological approach for studying the patient satisfaction process" and "virtually no studies have systematically content analyzed the written [qualitative] comments" of patients. The PJHQ designers used qualitative methods to generate an item pool. Two sources of data from patients were used: verbatim written comments and focus group discussions. A content analysis and grouping of the comments and discussions resulted in a taxonomy of quality attributes (Meterko et al. 1990). In line with the PJHQ approach, the method of "concept mapping" is more systematized. Concept mapping is a method for developing a conceptual framework for research and other objectives. Its scenario consists of six stages: (1) selecting participants and formulating a focus, (2) generating statements (brainstorming), (3) structuring the statements, (4) representing the statements in the form of a concept map, (5) interpreting the concept map, and (6) using the map (Trochim 1989). In the Netherlands, the method of concept mapping has been applied recently in quality inventories by the Dutch Institute of Mental Health (NcGv) and the Institute for Policy and Management in Health Care of Rotterdam University (de Waal et al. 1993; Ketelaars, Depla, and Donker 1993). Applied to the field of outpatient care, the PJHQ offers an attractive framework for item generating.

According to the meta-analysis of Hall & Dornan (1988a,b), the most frequently yielded dimensions of 221 patient satisfaction studies were (in order of frequency) Humaneness, Informativeness, Overall Quality, Competence, Overall Satisfaction, Bureaucracy, Access, Cost, Facilities, Outcome, Continuity, and Attention to Psychosocial Problems. Looking at the five selected instruments of this review, the taxonomy of the PSQ best covers the dimensions found by Hall and Dornan. Apart from that, the PSQ taxonomy is far more often tested than is any other taxonomy, also as a general representation of the patient's perspective in home care. The PJHQ and the SERVQUAL taxonomies are less relevant for home care services than is the PSQ taxonomy. During the past two decades, the PSQ taxonomy has proved to be a very reliable system of internally consistent, stable (test-retest) dimensions for the analysis of patient satisfaction with health care services. It was used in more than 20 studies (van Campen et al. 1992). In a number of extensive analyses, it proved to be a reliable reflection of the aspects of patient satisfaction with health care services (e.g., Ware and Snyder 1975; Ware et al. 1978). The seven dimensions of the PSQ are all in the top ten of the most investigated dimensions used in patient satisfaction research (Hall and Dornan 1988a,b). That means that the PSQ dimensions reflect, at least according to most researchers, the most important dimensions of patient satisfaction.

The assessment of the expectation-relative perceptions of clients offers a partial solution to the controversy over direct versus indirect methods that

concerned many methodologists during the 1980s (e.g., Pascoe et al. 1983; Hays and Ware 1986). The indirect instrument of the PSQ is related to patient expectations of imaginable, good health services, whereas the direct methods of, for example, the CSQ are more related to patient perceptions of their direct environment. The pros of both the direct and the indirect methods are unified in the SERVQUAL method of assessing the difference between expectation and perception. Quality of care is measured as the degree to which the patients' perceptions match their expectations. A negative outcome of expectation score minus perception score results in dissatisfaction with the specific service, whereas a more or less equal score or a positive outcome will lead to satisfaction. Babakus & Mangold (1992) adapted the SERVQUAL items for the evaluation of hospital services. From their statistical analyses of a survey of 443 patients discharged from hospitals, they conclude,

The expectations and perception scales in the modified SERVQUAL instrument have emerged as unidimensional measures with excellent internal consistency reliabilities. The two scales exhibit adequate validity as separate measures of (1) patients' expectations of hospital services and (2) their perceptions of the subject hospital's performance level. These results indicate that the scales can be successfully used to assess the magnitude of the gap between patient perceptions and expectations. (pp. 778-779)

The coefficient alpha for the overall expectation scale was .90 and for the overall perception scale was .96. The correlation between the perception scores and the expectations scores was .34. Perception scores correlate .76 with behavioral intentions (to return to the same hospital), whereas expectations scores correlated only .14. Compared to patient satisfaction research, these results show that the distinction between an expectation item and a perception item offers more lucid scores than does a distinction between satisfaction items and expectation items. For instance, the PSQ scores correlated strongly with expectation scores (Chao 1988). The SERVQUAL uses a Likert response format with the anchors *strongly agree* and *strongly disagree* and positively and negatively worded items. Most questionnaires, including the PSQ, use Likert-type items. An example of an expectation item is, "Hospital employees should tell patients exactly when services will be performed." An example of a perception item is, "XYZ employees tell patients exactly when services will be performed."

## CONCLUSION

After having discussed some of the fundamental problems of QCPP assessment, we conclude with what in our view would be a sound and practical strategy in assessing quality of home care from the patient's perspective. We

Os (e.g., Pascoe et al. 1983; the PSQ is related to patient whereas the direct methods it perceptions of their direct indirect methods are unified difference between expectation the degree to which the negative outcome of expectation with the specific positive outcome will lead to the SERVQUAL items for the statistical analyses of a survey of include,

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kept four topics in mind: (theory-based) validity, patient participation, specificity, and feasibility. Of the existing theories, the SERVQUAL model and other theories of quality systems are a sound basis for operationalization of concepts, validation of the (sub)scales, and feasibility of the results. A quality judgment (i.e., perception minus expectation) is a clear concept that is operationalized in the assessment of the patient's perception minus his or her expectation ( $QJ = P - E$ ). Tests for content validity, the predictive validity, and discriminate validity can be based on this theory. And the results are useful. For instance, a low quality judgment implies either that the patient's expectations of the health service are too high or that the quality of the health service is poor, which is an input for the circle of quality improvement (Ovretveit 1992).

Patients are experts by experience of care and should participate in the development of the instrument from the beginning. Several methods, such as focus group interviews (Elbeck and Fectau 1990) and concept mapping (Trochim 1989), proved to be successful in yielding information from patients (Meterko et al. 1990; de Waal et al. 1993). In the case of home care, the situation of patients with, for example, diabetic, respiratory, or rheumatic disorders differs considerably and requires disease-specific items. Next to disease-specific items, there are generic items, common to all patients, reported by many researchers of the past. Many investigations of QCPP have brought forth a set of central core aspects including Interpersonal Manner, Technical Quality, and Accessibility. To avoid time- and cost-consuming qualitative studies yielding these already known dimensions, one should look at the dimensions of QCPP studied in the past.

Our strategy is to generate a generic core of items from well-known QCPP dimensions and several disease-specific item sections. The generic core is based on previous research. The disease-specific sections are based on patient interviews. Looking at the meta-analysis of Hall and Dornan (1988a,b) and the dimensions of the five selected instruments in this review, the taxonomy of the PSQ covers the dimensions found by Hall and Dornan very well. In this respect, the dimensions of the SERVQUAL instrument are too general, the dimensions of the PJHQ are too specific (for hospital care), the dimensions of the SPPCS cover only three general aspects, and the CSQ is unidimensional.

In conclusion, on the basis of experiences in past research, we suggest the following for future research into the development of an instrument measuring quality of home care from the patient's perspective: generate a core of generic items out of the PSQ dimensions, generate disease-specific items according to the PJHQ approach of focus group interviews, and build your coming instrument on the basis of the SERVQUAL theory that a patient's quality judgment is his or her perception minus his or her expectation of quality aspects of home care.

## NOTES

1. Home care is defined in a broad sense as care given to patients where they live, outside the hospital. In this sense, it is more or less equivalent to outpatient care and ambulatory care.
2. Silagy (1993) assessed twenty-eight review articles in primary care journals using eight criteria: (1) purpose of review stated, (2) sources and methods of the citation search identified, (3) provision of criteria for inclusion and exclusion of studies, (4) assessment of methodologic validity of material included in the reviews, (5) information synthesized qualitatively, (6) quantitatively using a systematic approach within the limits of the available data, (7) summary of the main findings, and (8) provision of specific directives for future research in the area. These standards can be regarded as rather high. The results of the analysis showed that only 25 percent of the articles had a total score of more than 8 points (out of a possible 16).
3. Silagy (1993) warned that relying solely on databases such as MEDLINE may result in failing to identify 20 to 50 percent of relevant studies.
4. These included theoretical articles on problems with the assessment of QCPP. Theoretical articles on the concept of QCPP and PS were left out because they are too large in number, including many opinion articles and editorials.
5. Of the set of eight twice-or-more-often-tested measuring instruments, three met less than three requirements: the Medical Interview Satisfaction Scale (MISS) (Wolf 1978), the Evaluation Ranking Scale (ERS) (Pascoe and Attkisson 1983; Attkisson, Roberts, and Pascoe 1983; Pascoe et al. 1983), and the Patient Doctor Interaction Scale (PDIS) (Falvo and Smith 1983; Lehmann et al. 1988). The MISS met requirements (3) and (4) in Table 1. The ERS met requirements (2) and (5). The PDIS met requirements (3) and (4).

## REFERENCES

- Advisory Council on Health Research [Raad voor Gezondheidsonderzoek]. *Advies kwaliteit van zorg: Terreinverkenning en prioriteiten voor wetenschappelijk onderzoek*. The Hague, Netherlands: RGO, 1990.
- Aharony, L. and S. Strasser. "Patient Satisfaction: What We Know about and What We Still Need to Explore." *Medical Care Review* 50, no. 1 (1993): 49-79.
- Attkisson, C. C., R. E. Roberts, and G. C. Pascoe. "The Evaluation Ranking Scale: Clarification of Methodological and Procedural Issues." *Evaluation and Program Planning* 6 (1983): 349-58.
- Babakus, E., and W. G. Mangold. "Adapting the SERVQUAL Scale to Hospital Services: An Empirical Investigation." *Health Services Research* 26, no. 6 (1992): 767-86.
- Batalden, P. B., and E. C. Nelson. "Hospital Quality: Patient, Physician and Employee Judgements." *International Journal of Quality Assurance* 3 (1991): 7-17.

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ondheidsonderzoek]. *Advies  
etenschappelijk onderzoek*. The

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1993): 49-79.

e Evaluation Ranking Scale:  
ies." *Evaluation and Program*

RVQUAL Scale to Hospital  
es Research 26, no. 6 (1992):

ent, Physician and Employee  
: 3 (1991): 7-17.

- Bensing, J. *Doctor-Patient Communication and the Quality of Care: An Observation Study into Affective and Instrumental Behavior in General Practice*. Utrecht, the Netherlands: NIVEL, 1991.
- Brody, D. S., S. M. Miller, C. E. Lerman, D. G. Smith, C. G. Lazaro, and M. J. Blum. "The Relationship between Patients' Satisfaction with Their Physicians and Perceptions about Interventions." *Medical Care* 27 (1989): 1027-35.
- Carey, R. G., and J. H. Seibert. "A Patient Survey System to Measure Quality Improvement: Questionnaire Reliability and Validity." *Medical Care* 31, no. 9 (1993): 834-45.
- Chao, J. "Continuity of Care: Incorporating Patient Perceptions." *Family Medicine* 20 (1988): 333-7.
- Cleary, P. D., L. Keroy, G. Karapanos, and W. McMullen. "Patient Assessments of Hospital Care." *Quality Review Bulletin* 15 (1989): 172-9.
- Cryns, A. G., R. C. Nichols, L. A. Kats, and E. Calkins. "The Hierarchical Structure of Geriatric Patient Satisfaction: An Older Patient Satisfaction Scale Designed for HMOs." *Medical Care* 27 (1989): 802-16.
- Daly, R., and R. J. Flynn. "A Brief Consumer Satisfaction Scale for Use in In-patient Rehabilitation Programs." *International Journal of Rehabilitation Research* 8 (1985): 335-8.
- de Haan, E. A. *Mening van Patiënten over Fysiotherapie*. Groningen: State University of Groningen, Department of Social Medicine and Epidemiology, 1992.
- Elbeck, M., and G. Fectau. "Improving the Validity of Measures of Patient Satisfaction with Psychiatric Care and Treatment." *Hospital Community Psychiatry* 41 (1990): 998-1001.
- El Guebaly, N., J. Toews, A. Leckie, and D. Harper. "On Evaluating Patient Satisfaction: Methodological Issues." *Canadian Journal of Psychiatry* 28 (1983): 24-9.
- Falvo, D. R., and J. K. Smith. "Assessing Residents' Behavioural Science Skills: Patients' Views of Physician-Patient Interaction." *Journal of Family Practice* 17, no. 3 (1983): 479-83.
- Fishbein, M., and I. Ajzen. *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, Massachusetts: Addison-Wesley, 1975.
- Greenfield, T. K. "The Role of Client Satisfaction in Evaluating University Counselling Services." *Evaluation and Program Planning* 6 (1983): 315-27.
- Hall, J. A., and M. C. Dornan. "Meta-analysis of Satisfaction with Medical Care: Description of Research Domain and Analysis of Overall." *Social Science & Medicine* 27 (1988a): 637-44.
- Hall, J. A., and M. C. Dornan. "What Patients Like about Their Medical Care and How Often They Are Asked: A Meta-analysis of the Satisfaction Literature." *Social Science & Medicine* 27 (1988b): 935-9.
- Hays, R. D., and J. R. Ware. "My Medical Care Is Better than Yours: Social Desirability and Patient Satisfaction Ratings." *Medical Care* 24 (1986): 519-24.
- Hulka, B. S., S. J. Zyzanski, J. C. Cassel, and S. J. Thompson. "Scale for the Measurement of Attitudes towards Physicians and Primary Medical Care." *Medical Care* 8 (1970): 429-36.

- International Organization for Standardization. *Quality Management and Quality System Elements, Part 2: Guidelines for Services*. Genève: ISO, 1990.
- Kerssens, J. J., and E. M. van Yperen. "Patient's Evaluation of Dietetic Care: Testing a Cognitive-Attitude Approach," *Patient Education and Counseling* (submitted).
- Ketelaars, D., M. Depla, and M. Donker. "Cliëntenperspectief in Kaart gebracht." *MGV* 2 (1993): 136-49.
- Larsen, D. L., C. C. Attkisson, W. A. Hargreaves, and T. D. Nguyen. "Assessment of Client/Patient Satisfaction: Development of a General Scale." *Evaluation and Program Planning* 2 (1979): 197-207.
- Lebow, J. L. "Consumer Satisfaction with Mental Health Treatment." *Psychological Bulletin* 91 (1982a): 244-59.
- . "Pragmatic Decisions in the Evaluation of Consumer Satisfaction with Mental Health Treatment." *Evaluation and Program Planning* 5 (1982b): 349-56.
- . "Client Satisfaction with Mental Health Treatment: Methodological Considerations in Assessment." *Evaluation Review* 7 (1983a): 729-52.
- . "Research Assessing Consumer Satisfaction with Mental Health Treatment: A Review of Findings." *Evaluation and Program Planning* 6 (1983b): 211-36.
- . "Similarities and Differences between Mental Health and Health Care Evaluation Studies Assessing Consumer Satisfaction." *Evaluation and Program Planning* 6 (1983c): 237-45.
- Lehmann, F., D. Fontaine, A. Bourque, and L. Côté. "Measurement of Patient Satisfaction: The Smith-Falvo Patient-Doctor Interaction Scale." *Canadian Family Physician* 34 (1988): 2641-5.
- Levois, M., T. D. Nguyen, and C. C. Attkisson. "Artifact in Client Satisfaction Assessment: Experiences in Community Mental Health Settings." *Evaluation and Program Planning* 4 (1981): 139-50.
- Linder-Pelz, S. "Social Psychological Determinants of Patient Satisfaction: A Test of Five Hypotheses." *Social Science & Medicine* 16 (1982a): 583-9.
- . "Toward a Theory of Patient Satisfaction." *Social Science & Medicine* 16 (1982b): 577-82.
- Linn, M. W., B. S. Linn, and S. R. Stein. "Satisfaction with Ambulatory Care and Compliance in Older Patients." *Medical Care* 20 (1982): 606-14.
- Lochman, J. E. "Factors Related to Patients' Satisfaction with Their Medical Care." *Journal of Community Health* 9 (1983): 91-109.
- MacKeigan, L. D., and L. N. Larson. "Development and Validation of an Instrument to Measure Patient Satisfaction with Pharmacy Services." *Medical Care* 27 (1989): 522-36.
- McCusker, J. "Development of Scales to Measure Satisfaction and Preferences Regarding Long-Term and Terminal Care." *Medical Care* 22 (1984): 476-93.
- Merenstein, J. H., and R. P. Hirsch. "Non-returning Patients: A Survey of Inactive Patients in a Suburban Practice." *Family Medicine* 21, no. 3 (1989): 206-10.
- Meterko, M., E. C. Nelson, H. R. Rubin, P. Batalden, D. M. Berwick, R. D. Hays, and J. E. Ware. "Patients' Judgments of Hospital Quality: Report of a Pilot Study." *Medical Care* 28, no. 9 (1990): S1-S56.

- Management and Quality System), 1990.
- ation of Dietetic Care: Testing a and Counseling (submitted). pectief in Kaart gebracht." *MGV*
- T. D. Nguyen. "Assessment of eral Scale." *Evaluation and Pro-*
- Health Treatment." *Psychological*
- sumer Satisfaction with Mental g 5 (1982b): 349-56.
- ment: Methodological Consid- i): 729-52.
- ith Mental Health Treatment: A ng 6 (1983b): 211-36.
- Health and Health Care Evalu- valuation and Program Planning 6
- Measurement of Patient Satisfac- le. *Canadian Family Physician* 34
- ct in Client Satisfaction Assess- ings." *Evaluation and Program*
- Patient Satisfaction: A Test of a): 583-9.
- il Science & Medicine 16 (1982b):
- n with Ambulatory Care and 2): 606-14.
- ion with Their Medical Care."
- id Validation of an Instrument vices." *Medical Care* 27 (1989):
- action and Preferences Regard- (1984): 476-93.
- Patients: A Survey of Inactive , no. 3 (1989): 206-10.
- M. Berwick, R. D. Hays, and lity: Report of a Pilot Study."
- National Council for Public Health [Nationale Raad voor de Volksgezondheid]. *Discussienota Begrippenkader Kwaliteit van de Beroepsuitoefening*. Zoetermeer: NRV, 1986.
- Nelson, E. C., R. D. Hays, C. Larson, and P. B. Batalden. "The Patient Judgment System: Reliability and Validity." *Quality Review Bulletin* 15 (1989): 185-91.
- Ovretveit, J. *Health Service Quality: An Introduction to Quality Methods for Health Services*. London: Blackwell Scientific, 1992.
- Parasuraman, A., V. A. Zeithaml, and L. L. Berry. "A Conceptual Model of Service Quality and Its Implications for Future Research." *Journal of Marketing* 49 (Fall 1985): 41-50.
- . "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality." *Journal of Retailing* 64, no. 1 (1988): 12-40.
- Pascoe, G. C. "Patient Satisfaction in Primary Health Care: A Literature Review and Analysis." *Evaluation and Program Planning* 6 (1983): 185-210.
- Pascoe, G. C., and C. C. Attkisson. "The Evaluation Ranking Scale: A New Methodology for Assessing Satisfaction." *Evaluation Program and Planning* 6 (1983): 335-47.
- Pascoe, G. C., C. C. Attkisson, and R. E. Roberts. "Comparison of Indirect and Direct Approaches to Measuring Patient Satisfaction." *Evaluation and Program Planning* 6 (1983): 359-71.
- Potts, M. K., S. A. Mazucca, and K. D. Brandt. "Views of Patients and Physicians Regarding the Importance of Various Aspects of Arthritis Treatment: Correlations with Health Status and Patient Satisfaction." *Patient Education and Counseling* 8 (1986): 125-34.
- Roberts, J. G., and P. Tugwell. "Comparison of Questionnaires Determining Patient Satisfaction with Medical Care." *Health Services Research* 22 (1987): 637-43.
- Roberts, R. E., G. C. Pascoe, and C. G. Attkisson. "Relationship of Service Satisfaction to Life Satisfaction and Perceived Well-Being." *Evaluation and Program Planning* 6, no. 3 (1983): 373-83.
- Silagy, C. A. "An Analysis of Review Articles Published in Primary Care Journals." *Family Practice* 10, no. 3 (1993): 337-41.
- Smith, C. H., and D. Armstrong. "Comparison of Criteria Derived by Government and Patients for Evaluating General Practitioner Services." *BMJ* 299 (1989): 494-6.
- Stamps, P. L., and J. B. Finkelstein. "Statistical Analysis of an Attitude Scale to Measure Patient Satisfaction with Medical Care." *Medical Care* 19 (1981): 1108-35.
- Strasser, S., L. Aharony, and D. Greenberger. "The Patient Satisfaction Process: Moving Toward a Comprehensive Model." *Medical Care Review* 50, no. 2 (1993): 219-48.
- Trochim, W.M.K. "An Introduction to Concept Mapping for Planning and Evaluation." *Evaluation and Program Planning* 12 (1989): 1-16.
- van Campen, C., R. D. Friele, and J. J. Kerssens. *Methods for Assessing Patient Satisfaction with Primary Care: Review and Annotated Bibliography*. Utrecht, the Netherlands: NIVEL, 1992.
- Waal, M.A.E. de, C. J. Lako, and A. F. Casparie. *Voorkeuren voor Aspecten van Zorg met Betrekking tot de Kwaliteit: Een Onderzoek bij Specialisten en bij Patiënten met een Chronische Aandoening*. Rotterdam: Instituut voor Management en Beleid, 1993.

- Ware, J. E., A. Davies-Avery, and A. L. Stewart. "The Measurement and Meaning of Patient Satisfaction: A Review of the Recent Literature." *Health and Medical Services Review* 1 (1978): 1-15.
- Ware, J. E., and M. K. Snyder. "Dimensions of Patient Attitudes Regarding Doctors and Medical Care Services." *Medical Care* 13 (1975): 669-82.
- Ware, J. E., M. K. Snyder, W. R. Wright, and A. R. Davies. "Defining and Measuring Patient Satisfaction with Medical Care." *Evaluation and Program Planning* 6 (1983): 247-63.
- Wensing, M., R. Grol, and A. Smits. *Patiëntenoordelen over Kwaliteit van Huisartsenzorg* [Patient Judgments on the Quality of General Practitioners' Care]. Nijmegen: Katholieke Universiteit Nijmegen, 1991.
- . "Quality Judgments by Patients on General Practice: A Literature Analysis." *Social Science & Medicine* 38 (1994): 45-53.
- Wolf, M. H., S. M. Putnam, S. A. James, and W. B. Stiles. "The Medical Interview Satisfaction Scale." *Journal of Behavioral Medicine* 1 (1978): 391-401.
- Zyzanski, S. J., B. S. Hulka, and J. C. Cassel. "Scale for the Measurement of 'Satisfaction' with Medical Care: Modification in Content, Format, and Scoring." *Medical Care* 12 (1974): 611-20.

#### APPENDIX A Aspects of Care

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1. Effectiveness: Actual improvement of the state of health.
2. Professional competence: Having the necessary knowledge and skills.
3. Indication: Insight into one's own competence and possibilities in relation to those of other professionals.
4. Suitability: Physical and mental fitness to practice the profession.
5. Safety: Risk minimization.
6. Accuracy: Accuracy in the use of knowledge and skills.
7. Humaneness: Respect for the patient and his or her own responsibility.
8. Informativeness: Willingness to provide the patient with information.
9. Mutual trust: Respecting the patient's personal privacy.
10. Cooperation: Cooperation between the professional and the patient.
11. Accountability: Ability of the professional to account for his or her actions and behavior.
12. Continuity: Adequate transfer of treatment in case of more care providers, substitution by a locum, or retirement.
13. Availability: Availability of the professional to potential patients.
14. Efficiency: Right balance between input (money, means, time) and output (care).
15. Integrated care: Tuning the care provided by different professionals to one another.
16. Accessibility: Physical and geographical accessibility of the care, including the necessary equipment.



Measurement and Meaning of  
Care." *Health and Medical Services*

Attitudes Regarding Doctors and  
Nurses." *Health and Medical Services*

Reviews. "Defining and Measuring  
Quality of Care." *Health and Medical Services*

over *Kwaliteit van Huisartsenzorg  
en Verpleegkundigen's Care*. Nijmegen: Katholieke

Practice: A Literature Analysis."

Stiles. "The Medical Interview  
(1978): 391-401.

the Measurement of 'Satisfaction'  
in Primary Care." *Medical Care* 12

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17. Patient satisfaction: Valuation of care, care provider, and institution by the patient/consumer.
18. Financial accessibility.
19. Accommodation: Physical suitability of the organization.
20. Material privacy: Safeguarding the individual privacy of the patient/consumer by protecting physical data.
21. Hygiene: Minimization of the risk of iatrogenic infections.
22. Nutrition: Quality and taste of diets.
23. Prevention of superfluous care.
24. Empathy: Ability of professional to assume the role of the patient.
25. Burden: Consequences for the patient/consumer regarding his or her total functioning.
26. Autonomy of the patient: Whenever possible, active involvement of the patient in decisions concerning care.

Source: Advisory Council on Health Research (1990).

## APPENDIX B Key Words Used

### MEDLINE (1985-1993)

Searched for

1. "consumer/patient satisfaction statistics and numerical data."
2. "consumer/patient satisfaction" and ("psychometrics" or "methodology" or "sociometric techniques").
3. "quality of health care statistics and numerical data" and "patient."
4. "quality of health care" and "patient" and ("psychometrics" or "methodology" or "sociometric techniques").

### PSYCLIT (Psychological Abstracts)

Searched for

1. ("quality of care" or "health care delivery" or "health care utilization") and "client attitudes" and ("methodology" or "measurement" or "evaluation").
2. "satisfaction" and "client attitudes" and ("methodology" or "measurement" or "evaluation").

### Dutch Ministry of Health

Searched for

1. "patient" and "satisfaction."
2. "patiënten" and "tevredenheid" and "meten."
3. "consumer" and "satisfaction."

### NIVEL Institute

Searched for

1. "patientensatisfactie" and "onderzoek."
2. "kwaliteit van de zorg" and "patiënten/" and "attitudes" and "onderzoek."