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The measurement of satisfaction with healthcare: implications for practice from a systematic review of the literature

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Although the National Coordinating Centre for Health Technology Assessment (NCCHTA) commissions research on behalf of the Methodology Programme, it is the Methodology Group that now considers and advises the Methodology Programme Director on the best research projects to pursue.

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Executive summary

Background

Satisfaction and its measurement are important for public policy analysts, healthcare managers, practitioners and users. Despite problems with establishing a tangible definition of "satisfaction" and difficulties with its measurement, the concept continues to be widely used. In many instances when investigators claim to be measuring satisfaction, more general evaluations of healthcare services are being undertaken.

Satisfaction can be measured indirectly by asking users to rate the quality of services they have received, or report their experiences. Selection (or deselection) of providers is an objective behavioural indicator of satisfaction in healthcare systems where consumers' choices are not constrained. Healthcare is a multi-dimensional service, but many means of measuring satisfaction do not show consumers' relative preferences for different attributes, even though such information is important for cost-effective decision-making.

Objectives

The review sought to:

- summarise the results of studies that investigated methodological issues
- identify determinants of satisfaction with healthcare in different settings
- explore gaps in existing knowledge so that they can be addressed by future research
- consider the implications of the findings for the NHS.

Better information on the factors affecting satisfaction will assist healthcare providers and planners in the NHS to improve the quality of the service they deliver to users. Guidance on methods of collecting feedback from consumers will ensure that reliable information for the decision-making process may be collected.

Methods

Electronic searching involved seven major databases covering the years 1980–2000 and a range of terms. Foreign language articles were not excluded. Non-electronic search strategies involved outreach activities to a wide range of organisations, and personal contacts with leading academics in the field.

The review was conducted in two phases: an initial search resulted in the analysis of 128 articles, and a further 48 articles were added as a result of exploding reference lists and updating the electronic search.

Over 3000 abstracts were screened for relevance by three team members. Articles were excluded if the evidence they contained was not generalisable. In particular, evaluations that were specific to disease groups or service delivery locations were rejected. The articles retained were categorised as: background (n = 190, including reviews, and conceptual and policy articles); empirical (n = 223, providing primary research evidence for analysis in the review); and instrument related (n = 92).

Data were extracted from empirical articles by one reader and checked by a second. To assess the methodological quality of studies, both readers independently completed quality assessment forms based on agreed criteria. Articles deemed as poor by both assessors were subsequently excluded (n = 47).

Summary tables were prepared for all included studies, and data were synthesised using SPSS spreadsheets. Articles were subjected to a narrative review owing to the variety of approaches and outcome measures.

Results: evidence on methodological issues

The review identified 37 studies (36 data sets) that addressed methodological issues.

With respect to modes and response rates, the review showed that:

- Interview methods (telephone and face-to-face) generate higher responses than mail surveys (up to 30%).
- Differences between mail and telephone response rates can be significantly reduced by

telephone follow-up of mail non-respondents, although this adds to costs.
- Mail is cheaper than interview, except where telephone follow-up is used.
- Impersonal and mail methods result in more criticism/less reported satisfaction because respondents' anonymity is not compromised and there is no pressure for socially acceptable responding.
- Mail methods give more variability in responses (people feeling strongly either way tend to respond), but there may be concealed proxies.
- The evidence on the effect of survey timing on reported satisfaction is contradictory, and may depend on the nature of the illness and extent of recovery.
- Low response rates introduce bias. Non-respondents are more likely to be members of visible minority groups, less well educated and uninsured (in the USA).
- There are problems with obtaining usable responses from elderly, severely ill and cognitively impaired people, and those with language problems.
- On-site surveys under-represent low users in ambulatory populations.
- Qualitative approaches are more resource intensive but access in-depth information not captured by structured questionnaires.

With respect to survey design issues, the review showed that:

- Items with a personal referent are associated with higher recorded satisfaction than similarly worded items with a general referent.
- Questionnaire design issues, such as scaling and wording, affect responses; acquiescent responding and cross-cultural differences can introduce bias.
- Research on design issues is patchy and *ad hoc*.

Results: evidence on determinants of satisfaction

The review identified 139 articles (127 data sets) that provided evidence about the determinants of satisfaction. For analytical purposes, two groups of factors affecting satisfaction were identified: those relating to the characteristics of respondents, and those relating to health service delivery factors (policy variables).

The review showed that:

- Despite the potential importance of expectations in the measurement of satisfaction, only 20% of studies considered this factor, with varied results, such that many questions remain unanswered in this area.
- Satisfaction is linked to prior satisfaction with healthcare, respondents' predisposition, utilisation, and granting patients' desires (e.g. for tests and medications).
- Health status and health outcomes affect satisfaction. In general, sicker patients and those experiencing psychological distress record lower satisfaction, with the possible exception of some chronically ill groups.
- Older respondents generally record higher satisfaction, but evidence about the effects of gender, ethnicity and socio-economic status is equivocal.
- There is consistent evidence across settings that the most important health service factor affecting satisfaction is the patient–practitioner relationship, including information giving.
- Choice of service provider is associated with higher satisfaction. In the USA, care provided under fee-for-service arrangements generates greater satisfaction than that delivered by prepaid schemes, and gatekeeping arrangements score relatively poorly on satisfaction.

Conclusions

Areas identified where further research may be warranted

- A review of the effects of satisfaction on health behaviours and health outcomes is needed in order to establish the importance to health services, and to individuals, of fostering satisfaction.
- With respect to methodological issues, research is needed on:
  - the effect of timing of surveys on reported satisfaction
  - the extent of bias introduced by interviewers
  - cross-cultural issues and adaptations
  - how consumer feedback can be incorporated into healthcare decision-making, including the development of measures of relative preference.
- With respect to the role of expectations, research is needed to:
  - classify different types of expectations and explore how consumers operationalise these in evaluations
  - identify influences on expectations
  - examine the relationship between sociodemographic factors and expectations.
- There is a need to explore how different types of illnesses and health outcomes affect evaluations.
- Research is needed to explore the effect of different incentive structures on physician behaviour and patient satisfaction.

Methodological recommendations

Researchers seeking to collect high-quality information about consumers' views should pay particular attention to:

- how different ways of conducting surveys affect response rates and consumers' evaluations
- sampling methods, particularly to include disadvantaged groups
- promoting high response rates, to protect against low response bias
- the effect of respondents' expectations, prior experiences and desires
- establishing the strength of relative preferences between attributes because this has advantages in a policy-making context, particularly with cost-effectiveness considerations in mind.

Resource considerations are likely to be an important influence on the choice of survey method. Investigators must determine, in the context of their own requirements, whether the extra benefits derived from more costly approaches are worth the extra expenditure.

Qualitative approaches provide in-depth information, in contrast to the reductionism implied by quantitative approaches. Open-ended questioning in structured questionnaires may be a compromise. If resources permit, a mix of approaches may be optimal.

Recommendations from the review of the determinants literature

If consumer satisfaction is a priority, there is a need systematically to address interpersonal issues in the training of all staff, and to ensure that the financial and regulatory arrangements encourage practitioners to foster supportive and interactive relationships with their patients.

There is evidence that age and health status can affect consumers' ratings; these non-policy factors should be borne in mind when interpreting the results of satisfaction surveys.

Implications of the review for the NHS

Information gathering from NHS consumers about their satisfaction, or causes of dissatisfaction, is essential to the quality assurance process because limited choice means that preferences cannot be expressed by changing providers. The review addressed methodological issues to help managers and practitioners to collect reliable information from users about their views. The evidence on the determinants of satisfaction has been synthesised. User interests will be served only if their feedback affects decision makers. Complaints data are not comprehensive.

The National Plan for the NHS requires local managers and practitioners to conduct surveys of consumers' views. The results of these surveys could be used in national level performance indicators. Evaluation of the costs and consequences of alternative means of collecting feedback would be beneficial, in particular the balance between local and national needs, and between qualitative and quantitative approaches. Instrument design is costly and complex, but some validated instruments are available.

Chapter 1
Background

Introduction

Interest in measuring satisfaction with healthcare has grown considerably in recent years and there is a large, diverse and expanding literature in the field. A systematic review of the satisfaction literature was undertaken to synthesise the existing empirical evidence. After discussing issues surrounding the use of the term "satisfaction" and the reasons for attempting to measure it, the review sought to summarise the results of studies that investigated alternative methodological approaches or examined determinants of satisfaction in different settings. It also considered the relevance of the findings for the NHS, and identified gaps in existing knowledge so that they can be addressed by future research. Better information about the factors affecting satisfaction will assist healthcare providers and planners in the NHS to improve the quality of the service delivered to users. Guidance on methods of collecting feedback from consumers will ensure that reliable information for the decision-making process can be gathered.

This report proceeds as follows. The rest of this chapter discusses various background issues: the definition of "satisfaction"; problems of measuring satisfaction and alternative evaluative approaches; why consumer evaluations of healthcare are important; the development of consumerism in the NHS; the relationship between satisfaction and quality of care; the contexts in which consumer evaluations are important; and conceptual approaches that have been offered to explain the factors that affect levels of satisfaction reported by service users. The research questions to be addressed by the review are established, along with the structural framework within which the review was conducted.

The review methods used are reported in chapter 2, and the findings are presented in chapters 3 and 4. Primary research studies included in the review were grouped according to the issues they investigated. Chapter 3 discusses alternative ways in which consumer evaluations can be conducted, and appraises empirical studies that have analysed how methodological factors can affect reported satisfaction. Other empirical studies have focused on the way in which the characteristics of respondents affect their evaluations of given healthcare stimuli, and on the healthcare delivery factors that most engender satisfaction or dissatisfaction in different settings. Findings related to these determinants of satisfaction are presented in chapter 4.

Chapter 5 summarises the main findings of the review and assesses the implications of these for the NHS and its main stakeholders. Current gaps in knowledge and understanding about satisfaction measurement that could be addressed by future research are also identified.

Satisfaction measurement and alternative evaluative approaches

The measurement of satisfaction can be undertaken scientifically only if there is a clear definition of what satisfaction is, and an understanding of its underlying factors. The conceptual basis of satisfaction with healthcare is not fully established.[1,2] This has impeded measurement efforts and raises issues in the interpretation of survey results.

Definition of "satisfaction"

Dictionary definitions attribute the term "satisfaction" to the Latin root satis, meaning "enough". Something that satisfies will adequately fulfil expectations, needs or desires, and, by giving what is required, leaves no room for complaint.

Two points arise from these definitions. First, a feeling of satisfaction with a service does not imply superior service, rather that an adequate or acceptable standard was achieved. Dissatisfaction is defined as discontent, or a failure to satisfy. It is possible that consumers are satisfied unless something untoward happens, and that dissatisfaction is triggered by a critical event.[1,3] Secondly, satisfaction can be measured only against individuals' expectations, needs or desires. It is a relative concept: something that makes one person satisfied (adequately meets their expectations) may make another dissatisfied (falls short of their expectations).

When satisfaction is measured, individuals are presumed to rate or evaluate a service or a provider by comparing their personal subjective standards with

their perception of the care received. The satisfaction they record is an attitudinal response to this value judgement, and is a subjective evaluation rather than an objective measure. Their evaluation has been described as cognitively based and emotionally affected.[4] It has been argued that satisfaction can be measured on a continuum that ranges from dissatisfaction at one end to very satisfied at the other, and that the position an individual occupies on that continuum is affected by the values, beliefs and expectations that they bring to the encounter, as well as by the features of the encounter itself.[5] Others have suggested that the factors resulting in dissatisfaction are somewhat different from those that generate satisfaction.[6] Qualitative research on complaints has concluded that satisfaction and dissatisfaction are different constructs.[7,8]

Problems with measuring satisfaction

Several problems arise when attempts are made to measure satisfaction.[9]

First, the personal and subjective nature of evaluations means that views about given standards of care can vary. Individuals' judgements reflect their own circumstances and backgrounds and do not lend themselves to objective measurement.

Secondly, expressed satisfaction may reflect users' knowledge and expectations, rather than the quality of the service and care provided. If users have limited knowledge of opportunities and low or unclear expectations of service quality, they may record high satisfaction even if poor standards of care have been provided. Similarly, if people are passive and uncritical users of healthcare, their expressions of satisfaction carry little meaning; a satisfied customer may be one who holds no opinion at all, or one who unquestioningly defers to medical paternalism. To measure satisfaction, therefore, it is necessary to understand how individuals evaluate care and make judgements. A recent study suggested that consumers' evaluations are based on physicians' behaviour,[10] but in general little is known about the mechanisms by which satisfaction judgements are formed.

Thirdly, there is a need to separate feelings of satisfaction or dissatisfaction with the service delivery or process of care from those related to the health outcome of care. Modelling this is complex because of the reciprocal nature of the relationship between health outcomes and satisfaction with care. This means that data on satisfaction cannot be interpreted independently of information on health status.[11]

A fourth problem is that theories of cognitive dissonance predict that people will not admit to dissatisfaction with services they have chosen to use, because that would suggest an inconsistency in their behaviour. Further complexities in measurement arise because people may express different degrees of satisfaction with their personal care and with the healthcare system in general.[12]

Alternative evaluative approaches

Despite problems with establishing a tangible definition of satisfaction and difficulties with its measurement, the concept continues to be widely used. However, in many instances when investigators claim to be measuring satisfaction, more general evaluations of healthcare services are being undertaken. Asking people how satisfied they are with their healthcare, or aspects of it, has, historically, resulted in high levels of satisfaction being recorded, so alternative methods of eliciting users' evaluations are also applied.

A common method is to ask people to rate their experience of aspects of their care (e.g. how well they thought the doctor explained the treatment); a degree of satisfaction can be implied from these ratings. Such indicators are referred to as indirect measures of satisfaction because they do not directly ask respondents about how satisfied they are. A problem with this approach is that it makes pre-emptive assumptions about the determinants of satisfaction.

Another approach is to ask people about their experiences of the healthcare delivery system (e.g. how long they waited in the doctor's waiting room). This more objective method is useful for establishing trends over time and comparing across providing units. Although factual information is collected,[5] its association with satisfaction has not necessarily been established. This depends on individuals' standards and expectations. For example a 2-hour wait in an accident and emergency department may be rated differently by a homeless person and a busy parent.

A commonly used method, especially when satisfaction is being monitored for marketing purposes, is to ask users about their intentions to recommend or return to a service provider. Although expressed behavioural intentions do not always translate into actions, they can alert managers and professionals to the existence of dissatisfaction and the need for further investigation. Such approaches may be less appropriate in the NHS, where choices are constrained and barriers to mobility exist. Where available, data on actual changes of provider

(other than those necessitated by changing circumstances), offer more robust evidence of consumers' preferences.[13]

From a management perspective, both objective and subjective information is valuable and complementary. There are, however, significant practical problems associated with obtaining meaningful measures of subjective evaluations, and, beyond that, with analysing and interpreting the data for decision-making purposes. Although alternative means of evaluation have been used in attempts to overcome the problems associated with direct measures of satisfaction, subjective assessments are still involved. Moreover, indirect approaches blur the distinction between satisfaction and the determinants of satisfaction.[14] They assume, for example, that a fuller explanation by the doctor and a longer wait give more or less satisfaction respectively.

A problem that is common to direct and indirect approaches is that they do not normally generate information about the relative importance of different health service attributes to consumers, or about the trade-offs consumers may be prepared to make between them. For example, the inconvenience of waiting may be more than compensated for if the doctor is interested, listens and explains. The independent evaluation of attributes does not show relative strengths of preference, yet such data are needed for rational and cost-effective decision-making.[15]

In the light of the lack of clarity in the literature about how satisfaction is defined and measured, and the range of evaluative methods that may be presented as measures of satisfaction, this review adopted an all-encompassing strategy. This enabled the consideration of evidence from a variety of evaluative approaches, including rating exercises and surveys of users' experiences, and took account of the fact that the terms "satisfaction" and "evaluation" are often used interchangeably in the literature.

Why consumer evaluations of healthcare are important

Monitoring user satisfaction is important for service quality assurance purposes, in treatment evaluations, and because satisfaction can affect health outcomes.[16]

Health outcomes

Satisfied patients are more positive about their situation; they have been shown to be more compliant and cooperative, and more likely to participate actively in their treatment regimens.[17] On the other hand, frustrated or stressed patients whose basic expectations are not being met may not respond fully to therapeutic interventions.[18] An understanding of the factors contributing to satisfaction, and attempts to foster those attributes of care, have the potential to reap a return to the health service in the form of more effective use of medication and health service resources, and to the individual patient in the form of a faster recovery and a better health outcome.

Quality assurance

Users' evaluations are important for continuous quality monitoring and improvement in both market-based and publicly provided systems of healthcare delivery. Consumer feedback alerts managers to users' needs, perceptions and concerns, identifies areas of service failure, and enables the evaluation of improvements as they are implemented. Customer surveys also encourage professionalism amongst staff, making them accountable for the quality of service they deliver. They provide an incentive throughout the organisation to improve performance, and a mechanism for identifying individuals who are worthy of reward. The underlying rationale for collecting user evaluations, however, differs between public and private healthcare systems.

When healthcare is publicly provided, as in the NHS, users are entitled to have their views taken into account when services are being planned and evaluated.[19,20] Regulatory quality assurance mechanisms are designed to increase the accountability of managers and healthcare professionals, to ensure that the basic standards of care set by society are met, and to safeguard patients' rights. Consumer feedback is an essential source of information in this process, although such mechanisms do not fully empower consumers.[1]

A truly consumer-led service delivery requires that consumers have a choice of healthcare system or practitioner. They can then show dissatisfaction with quality of care by selecting an alternative provider. This power of "exit" encourages providers to be responsive to consumers' preferences. In the absence of choice, however, "voice" is the only means available to consumers to indicate their preferences to suppliers. They may articulate their views by responding to routine provider-led evaluative exercises, or by spontaneously expressing their opinions through available mechanisms, such as complaints procedures or lay representatives on statutory bodies. The

extent to which such approaches can substitute for individual choice, however, is debatable.[13]

Competitive pressures in market-driven healthcare systems mean that user perceptions are of central concern to managers who need to retain existing customers and attract new ones in order to maintain or increase their market share. When consumers have a choice, poor system performance and care of an unsatisfactory quality may result in provider changes, and, as word spreads through the community, significant lost revenue may result.[21,22] The fact that healthcare organisations depend on their clients, and that the clients do not depend on a single source of supply, underscores the need for client-centred services.[23]

A large number of studies emanating almost exclusively from the USA highlight the marketing reasons for collecting information about consumer preferences and for targeting areas of service delivery that customers perceive to be in need of quality improvement. Such approaches emphasise that customer satisfaction is the key to financial success, a growing practice size, and the avoidance of costly malpractice suits. They offer varied advice, sometimes without scientific basis, to healthcare managers or practitioners about: how to survey customers, how to respond to criticism, how to manage change, and what to do to deliver a superior service and turn their clients into "cheerleaders".[24–50] Some authors have published details of strategies that they have implemented successfully to enhance satisfaction or reduce complaints.[49–57] It has been suggested, however, that marketing and quality concerns are not always congruent, and that measures may be introduced to increase market share that are not necessarily synonymous with higher quality.[58]

User feedback is also important for consumers who are seeking to make a rational choice of healthcare provider.[59] In the USA, the results of standardised measures of client satisfaction are used with other indicators in the process of accrediting managed care organisations, and in "report cards" to inform both suppliers and purchasers of healthcare about consumer views of alternative plans. With so much at stake, large sums of money are invested in researching the healthcare market.

Treatment evaluations

In the face of finite healthcare resources and rising expectations, it has become increasingly important for providers to show the cost-effectiveness of new technologies and treatments, and to practice evidence-based medicine. The patient perspective is considered to be an important element in this evaluative process because professional and expert views about the experience of care or outcomes of importance can vary markedly from those of their clients.[47,60–64]

Consumerism in the NHS

Concern for consumer views in the NHS was triggered in 1983 by the Griffiths Report,[65] which recommended that more attention should be paid at local level to monitoring the opinions and perceptions of service users. This theme was developed further in the subsequent decade; it was suggested that the NHS should adopt the market research practices used widely in the private sector,[66] that family doctors should respond to the expressed needs of their consumers, and that family practitioner committees should seek the views of the wider public through opinion polls.[67,68]

During the operation of the internal market between 1991 and 1999,[69] budget-holding GPs felt at first hand the need to know more about the views of their consumers, and practice surveys (in various forms) became commonplace.[70,71] Similarly, NHS trusts were thrust into a competitive environment, features of which included the monitoring of their performance against Patient's Charter standards and negotiating for contracts with GPs.[72] As a result, quality assurance, customer needs and consumer appraisal attracted the spontaneous attention of managers.

The 1993 NHS Research and Development Strategy guidelines for assessing the effect of health technologies emphasised the importance of outcome measures that reflect patient and carer experiences.[73] Public involvement in the NHS was given a further boost in 1996 with the Patient Partnership Strategy.[74]

The decade of the 1990s also saw the formal introduction and development of the clinical audit system.[62,75–78] This was viewed as central to clinical effectiveness and was required to incorporate a clear patient focus.[79] A special patient subgroup was formed to further consumer input into the audit process.[62] Just as the Patient's Charter encouraged health authorities to seek feedback from service users, so the clinical audit guidelines suggested that providers should use a variety of survey techniques in order to ascertain the views of their clients. Providers responded to this challenge,[80] but concern was expressed about the validity of many local studies of consumer opinion

because they were not rigorously designed,[81,82] and may not therefore have elicited representative responses.[83] For quality assurance purposes, there is a need to complete the feedback cycle by taking action based on consumer views. Although the audit process has been shown to absorb significant healthcare resources, its value has not been formally assessed.[84]

In 1997, the new Labour Government's plans for the NHS[85] included the removal of some competitive features of the internal market. With a view to encouraging quality improvements, performance assessment of providers was extended.[86] This involved, amongst other things, an annual survey of NHS users' experiences, and some high-level performance indicators that could be used as a basis for comparing areas and trusts.[87] These systems are now in place. Although the number of performance indicators is rising, they do not provide a complete and accurate reflection of quality of care.[88,89]

The National Plan for the NHS in 2000 re-emphasised the importance of consumer feedback. In addition to changes in the Patient's Charter and the introduction of local patients' forums, all providers of primary and secondary care are now required to ask patients and carers for their views. Moreover, the results of their findings, and the action taken as a result, must be published in an annual prospectus.[90,91] This has raised further concerns about the ability of local providers to design and implement scientifically sound instruments that will provide data that represent accurately the views of all groups of consumers. The National Plan includes provision for financial rewards to trusts with high consumer ratings and this may necessitate the derivation of national-level, consumer-orientated performance indicators.

Satisfaction, quality of care and outcomes

Quality of care

A number of attributes combine to influence the quality of care that is provided. Assessments of the overall performance of healthcare delivery arrangements may incorporate input details (e.g. staff numbers and qualifications) and process measures (e.g. proportions of children immunised), as well as outcomes.[92,93] Although there is much debate about how quality of care should be measured, levels of user satisfaction are highly relevant signals because they reflect consumers' perceptions of the standards achieved,[47] their judgements of the "goodness" of care, and the success of providers at meeting client values and expectations.[93] It has been suggested that satisfaction is a necessary, but not a sufficient, condition for effective care,[1] and that the key to evaluating the quality of care is a mix of clinical- and patient-centred outcome measures.[94]

Patient involvement in quality of care assessment is not, however, without its critics. Some suggest that patients cannot judge technical aspects of care, and that they use, as proxies, features they can evaluate, such as cleanliness of the facilities, or interpersonal aspects.[18,95] An empirical investigation of this issue, however, suggested that consumers do provide valid assessments.[96] Other evidence that shows an inverse relationship between professionally determined quality standards and patient satisfaction[97] highlights the importance of incorporating user opinions.[37] Practitioners have expressed concern that good medical practice may sometimes generate dissatisfaction, for example, when medication or tests are not indicated but are expected by patients.[98] In these circumstances, however, it has been suggested that dissatisfaction may more appropriately be attributed to poor communication skills of the doctor.[93,99]

Outcomes movement

Parallel to the development of consumerism in healthcare has been the growth of the outcomes movement. Prompted by cost consciousness in the face of escalating healthcare expenditure, there is a universal need to show value for money by relating health outcomes from the care process to resource inputs. Many outcome measures are clinically based and reflect disease attributes of significance to medical practitioners. The consumer movement, however, has emphasised the importance of patient-centred outcomes. Most important amongst these are measures of health-related quality of life and satisfaction.[11] The use of satisfaction as an outcome measure has been contested.[100]

Contexts in which consumer evaluations are used

Evaluations of healthcare can be conducted in a range of contexts. They can be focused exclusively on patients, or their significant others, for their views on the quality of service received, or they can be extended to the entire pool of potential users for their opinion about broader aspects of care and the functioning of the care delivery system as a whole. Different stakeholders in

satisfaction research can be identified, each with a different agenda.

Healthcare system directors, public policy analysts and politicians seek people's views on their medical care in general. In the UK, this means assessing how satisfied the public is with the overall extent and quality of NHS services. In the USA, health plan managers routinely seek evaluations from their subscribers about the delivery of the benefit packages provided, because marketing issues are paramount. Surveys to assess the views of people in the USA about their heterogeneous healthcare system would be at a higher (supraplan) level and could have political significance.

Generic studies measuring satisfaction with healthcare may concentrate on issues such as equality of access, costs, and breadth of coverage. Although it is likely that personal experience will colour respondents' evaluations of their care in general, these types of studies may not fully probe satisfaction at the individual level and at the point of delivery.

Information on satisfaction with personal care is required by managers for monitoring service delivery in their areas of responsibility and by practitioners for gaining their clients' perspectives on care. Both groups are also interested in the determinants of satisfaction that are outside their control, such as the sociodemographic characteristics of respondents, or broad systemic features. To meet these needs, satisfaction studies are conducted in different settings: general practice, primary care, hospital outpatient/ambulatory care, in hospital, or the community. They may evaluate different issues: specific visits, total episodes, the care provided by medical or nursing staff, or the interpersonal aspects of care. Methodological rigour is necessary to ensure that high-quality feedback is collected.

Healthcare users are major stakeholders in satisfaction research because they stand to benefit if their feedback influences subsequent service delivery. Studies that focus on dissatisfaction, or that analyse complaints, are particularly important in this respect. Evidence suggests that the majority of complaints are made to protect other consumers from poor service, rather than for other forms of redress.[101–103] The ability of users to relay opinions to providers and have those views acted upon is crucial in systems where exit is barred and choice is constrained. In systems where consumers have choice, information about other users' perceptions of the quality of alternative providers' services informs purchasers' decisions and managers' quality assurance processes.

Of growing importance are studies of satisfaction with particular treatments. Pharmacological research during product development, with compliance issues in mind, will encompass consideration of user acceptability, particularly the tolerability of side-effects.[104] Similarly, satisfaction with new technologies or clinical procedures, including surgery, will be of interest to practitioners who are seeking to understand the personal impact of interventions and to improve the care experience. The results of studies that measure satisfaction with particular products or procedures are not normally generalisable, so this type of study was excluded from this review.

Conceptual models of satisfaction with healthcare

Several approaches have been used to try to identify the factors contributing to satisfaction with healthcare. These range from atheoretical studies that investigate how different factors co-vary to more detailed theoretical models that attempt to explain the relationship between variables on the basis of underlying principles. There is consensus amongst commentators that a complete definitive conceptualisation of satisfaction with healthcare remains to be established, and that understanding of the process by which a user becomes satisfied or dissatisfied is incomplete. In this section, alternative approaches that have been advanced are summarised. A distinction is made between those based on expectations, those focusing on health service attributes, those emanating from economic theory, and those that are holistic in nature.

Approaches based on expectations

Consumers' expectations are viewed by some commentators as the major determinant of satisfaction with healthcare.[41,105,106] This approach draws on market research techniques that are in turn based on psychological theories. In the simplest form, client (dis)satisfaction is viewed as a reflection of the difference between what is expected (E) and what is perceived to have been delivered (D); if $D > E$, the client will be satisfied, but if $D < E$, dissatisfaction results.[24]

According to the expectancy disconfirmation paradigm, satisfaction arises either from positive experiences confirming positive expectation, or

from positive experiences disconfirming negative expectations. Dissatisfaction arises when negative experiences disconfirm positive expectations, or when negative experiences confirm negative expectations. Disconfirmation of expectations affects perceived quality of care, and hence satisfaction.[107] Satisfaction has also been presented in terms of expectation fulfilment. The larger the perceived discrepancy between expectations and experience, the greater the satisfaction or dissatisfaction. Multiple discrepancy theory explores how satisfaction is affected by gaps between experiences and a number of types of expectations, including the users' views of needs and desires, past experiences and social norms.[108] The expectations approach embraces an examination of how broader social psychological variables, such as beliefs, affect attitudes to and evaluations of healthcare.[109]

Refinements to the expectations approach discuss the origins of expectations in cultural norms, personal experience, the opinions of family and acquaintances, and media influences. They allow for sociodemographic factors and health status to influence both expectations and the evaluative process; they distinguish between global expectations (about healthcare in general) and specific expectations (about particular attributes of it); they identify the content of expectations in terms of structural features (facilities, equipment, personnel), process of care (technical and interpersonal), and outcomes (somatic and psychological); and they specify different types of expectations, including ideals, desires, aspirations and entitlements. The issue of standards of care is related; societal benchmarks may be compared with individuals' expected minimum tolerable or normative (what ought to be) standards.

Measuring satisfaction as the difference between expectations and perceptions of care experiences is complicated by the dynamic, two-way nature of the relationship between them. Experiences may cause expectations to shift, either directly as a result of information provided during the process of care, or indirectly because occurrences may alter patients' perceptions.[106] Equally, however, expectations may directly modify occurrences (e.g. when patients request certain treatments), or alter patients' perceptions of them.

The assimilation–contrast approach, which is based on the cognitive dissonance paradigm, considers the means by which expectations and patients' perceptions of experiences may be altered by events. It is suggested that assimilation occurs (i.e. people alter their perceptions of events in the direction of their expectations) when their perceptions are not greatly different from their expectations. Beyond a certain point, however, on either side of the range, assimilation is replaced by the contrast effect as individuals begin to exaggerate increasingly large variations between their perceptions of occurrences and their expectations.[105]

In practical terms, approaches that focus on expectations imply that the measurement of satisfaction involves an assessment of both expectations and how experiences compare with them. This creates difficulties when expectations are imprecise or uninformed,[110] and because expectations can be manipulated by healthcare professionals or managers. In a policy context it also means that if expectations rise without commensurate increases in standards, satisfaction levels will fall,[106] and that client satisfaction can be increased by deliberate attempts to lower expectations, raise perceptions of what is delivered, or both.[24]

Approaches based on health service attributes

Another approach that attempts to clarify the concept of satisfaction focuses on consumers' evaluations of health service attributes. These methods use reviews of the available literature or primary research techniques to produce lists of critical features that affect satisfaction with healthcare. These features are often incorporated into factor or principal components analysis to validate definable dimensions to the care process. The classifications produced may subsequently form the basis for the development of instruments to measure satisfaction.[6,111,112] The results of such studies generally confirm the multi-dimensional nature of the concept of satisfaction as first derived by Ware and colleagues.[113]

Limitations of the expectations-based models make this empirical approach appealing to some researchers. In particular, by de-emphasising the link between expectation fulfilment and satisfaction, it can explain how respondents report satisfaction when their expectations are not fulfilled. Moreover, it enables the measurement of satisfaction in the face of ill-defined or unstable expectations.[1]

Although important attributes of care may vary with the context of the investigation, in general they relate to three main issues: the characteristics of the provider, the features of the patient–practitioner relationship, and factors related to the structure and setting of healthcare delivery.[114]

Provider characteristics include personality traits, and ability in the art and technical aspects of clinical practice. Some consumers may take the knowledge and technical skills of their healthcare professionals for granted, but softer aspects, such as concern, caring, warmth and sensitivity, are important influences on satisfaction. Likewise, the patient–practitioner relationship, including information exchange and patient involvement, are potentially significant means of providing practical and emotional support, and thereby of enhancing satisfaction. Patient preferences for adopting deferential or participatory roles vary, however, and concern has been expressed that insufficient attention has been paid to the way in which power, control or autonomy in the patient–practitioner relationship may affect respondents' evaluations of their care.[115,116]

Structural factors include organisational issues such as accessibility, mode of payment, choice and equity. Characteristics of the physical environment in which healthcare is delivered also affect satisfaction, including features such as privacy, cleanliness, heating, food, and the appearance of personnel.

Each healthcare user has a unique frame of reference from which evaluations are made and, therefore, different people assign different weights to particular attributes. This is explained in this approach in terms of antecedent factors: the characteristics of respondents that are presumed to influence the level and pattern of their reported satisfaction. Important antecedents include sociodemographic factors, health status and health beliefs. Empirical investigations have explored the relationship between reported satisfaction and variables such as age, gender, race, income, education and health status. Prior expectations of respondents, and expectations that are adapted by experiences, are often viewed as intervening variables, dependent on sociodemographic and health status, rather than as autonomous determinants of satisfaction. Health beliefs may also influence satisfaction via their effect on expectations. Respondents with high levels of confidence in their providers may be reluctant to acknowledge care inadequacies; they may report satisfaction even if their expectations are not fulfilled. Causal modelling has been proposed as a technical means of unravelling potentially complex networks of related variables.[117]

Economic approaches

Economic analysis offers a theoretical basis for the largely empirical attribute-based approach and shares some common ground with expectation theories. Economists label the concept of satisfaction in the consumption of a product or service as "utility". Modern micro-economic theory predicts that individuals seek to purchase goods or services for the utility-generating attributes they provide. Applying this to healthcare, and assuming that consumers have choice, they will choose a particular healthcare provider for the bundle of attributes on offer (e.g. accessibility, friendliness, qualifications, helpfulness of ancillary staff etc.). Different individuals with different tastes and preferences will choose different providers because they have different attribute combinations.[118,119] Assuming no budget constraints, rational consumers, in a market situation, will continue to purchase healthcare all the time the value of the utility they expect to get is at least equal to the price they must pay. They will be satisfied with their purchase if their expectation is realised. Consumer surplus is earned to the extent that the value of the utility exceeds the price, in which situation consumers are more than satisfied.

According to utility theory, satisfaction depends on whether the actual utility experienced is greater than, equal to, or less than the utility that the consumer expected to realise. This raises the question of how consumers form a view on expected utility. Consumer behaviour theory predicts that this varies from product to product, and distinguishes three different types of goods and services available in the market-place: search goods, experience goods and credence goods.[120] Aspects of healthcare fall into each of these categories.

The quality of search goods can be determined by inspection prior to purchase, such that utility is predictable and expectations are clear. For example, it is possible to ascertain the location, facilities and opening hours of a doctor's practice before joining it. The quality of experience goods, however, can be assessed only after purchasing them and trying them out, so expectations are unclear and there is greater uncertainty about the satisfaction they may yield. How an individual's relationship with a doctor will develop, for example, cannot be fully ascertained until after a consultation has been experienced, even if search costs were incurred by interviewing the doctor in advance. Credence goods are bought on trust because, even after use, their characteristics may not be fully or reliably apparent. Some aspects of medical practice, including preventive care and some curative therapies, possess the characteristics of credence goods, and consumers have low or uncertain expectations of their utility-generating properties.

Relative preference and cost-effective decision-making

With limited budgets, consumers cannot buy everything they would like, and they make trade-offs or compromises depending on their individual preferences. In a public policy context, if several aspects of service delivery are candidates for improvement, but resources are constrained, cost-effective decisions can be taken only if information is available on the relative strength of preference for the alternatives and their relative costs.

Holistic approaches

Holistic approaches attempt to incorporate all influences on satisfaction and thereby to provide a comprehensive framework for exploring interactions between variables that affect consumers' evaluations. An example of such a model is shown in *Figure 1*.[22,121]

Consumers may evaluate their healthcare experience to give a single global summary judgement, and/or they judge separate aspects of it. Either way, satisfaction is a multi-dimensional concept, derived from an evaluation of varied features of the care experience. The individual stimuli assessed by consumers include the actions, attitudes and appearance of human resources, the physical environment, and organisational aspects of care. Consumers' judgements represent perceptions created through cognitive and affective processes, which are specific to individual consumers, reflecting their particular personal characteristics.

Sociopolitical values created by the healthcare system (market, public or mixed) and mediated by sociodemographic variables are likely to be important influences on individuals' values, beliefs and expectations.

Satisfaction is an individual attitudinal response to the value judgements formed. Reported satisfaction will be influenced by the instruments and methods used by investigators seeking to measure it.

Satisfaction, or dissatisfaction, with attributes of healthcare affects subsequent behaviour, with consequences for both the individual consumer and the provider. Although many other factors are also involved, satisfaction is linked with adherence to medical advice, self-care, and hence with health outcomes. When consumers have a choice of provider, it is also presumed that satisfied customers will use the service again and recommend it to others. Dissatisfaction, on the other hand, leads to changes of provider and adverse publicity.[123–125]

This holistic approach is an endogenous model. The determination of satisfaction is a dynamic process involving two feedback mechanisms. First, individual attitudes are modified by experiences, which, in turn, alter expectations

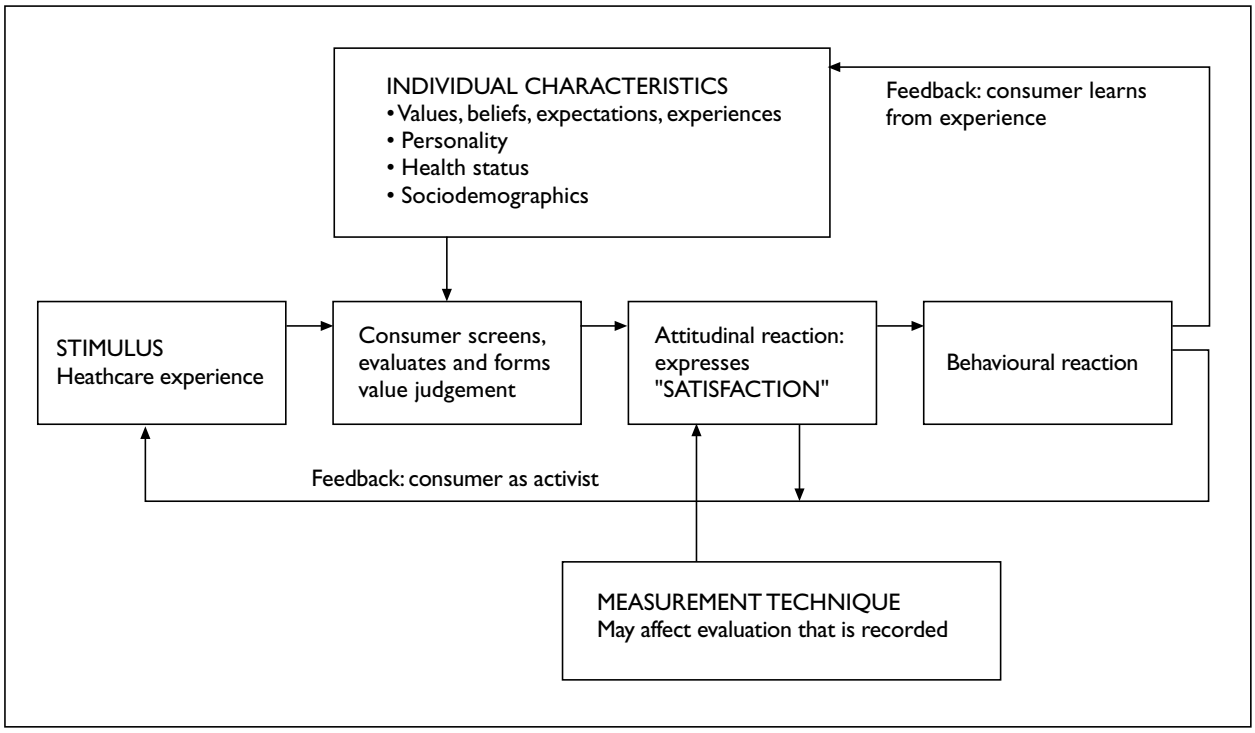

FIGURE 1 *Holistic model of satisfaction with healthcare (adapted from Strasser and Davis, 1991[22] and Strasser* et al., *1993[121])*

and value judgements in a way similar to the response shift phenomenon in health-related quality-of-life research.[126,127] Secondly, healthcare delivery is affected by both consumer attitudinal (voice) responses articulated through feedback mechanisms and behavioural (utilisation) responses such as changing provider.[128]

Inclusive models of this type emphasise the multiple influences on satisfaction with healthcare, and imply that the collection of data relating to it is a broad and complex task with several possible sources for measurement or interpretation error.

Research questions

In view of the breadth and diversity of the satisfaction literature, and the growing significance attached to satisfaction outcomes by managers and policy makers, a systematic review of the available evidence was undertaken.

A systematic review is "a scientific tool ... used to summarise, appraise, and communicate the results and implications of otherwise unmanageable quantities of research".[129] The review method is outlined in chapter 2. This sought to consolidate evidence in two broad areas:

- on the alternative methods of measuring satisfaction with healthcare, where issues such as response rates and non-response bias are important
- on the factors affecting satisfaction with healthcare, particularly the significance of health service factors (policy variables) in different settings, and the extent to which evaluations may reflect sociodemographic and other individual factors, over which suppliers have limited control.

Overall, the review aimed to provide evidence-based guidance for practitioners, managers and policy makers who wish to elicit and interpret the views of healthcare consumers about the services they offer. They also aimed to identify areas of weakness in the literature that could be addressed by future primary research efforts.

The holistic model described above was used as a conceptual framework for the review, so that healthcare factors, individual characteristics and measurement issues could be differentiated for their impact on reported satisfaction. The analysis was further subdivided to take account of different healthcare settings and different situations in which user satisfaction could be measured.

Although several reviews of the satisfaction literature already exist, some of these predate the development of consumerism and the explosion of interest in satisfaction that occurred in the mid-1990s. Some authors were not systematic in their searching and analysis of the empirical literature, and some reviews were partial in their coverage. The extensive reference lists provided by existing reviews were incorporated in the literature-searching phase of this study. A structured list of other reviews of measurement of satisfaction is presented in appendix 1.

In recognition of the multi-disciplinary interest in the measurement of satisfaction with healthcare, a broad-based team was assembled to undertake the review. This comprised a biostatistician, an economist/health services researcher, a professor of nursing, a health psychologist and a medical sociologist. Two experts in literature searching and retrieval were involved over the course of the project.

Chapter 2
Review methods

Introduction

The systematic review of the satisfaction literature followed accepted scientific principles[129] with some modifications and developments owing to particular features of the research area and the nature of the available evidence. The process is summarised in *Figure 2*.

An initial scoping search of electronic databases indicated upwards of a quarter of a million hits. In order to confirm the research questions and formulate the electronic search strategy, a sample of abstracts for 1996 were retrieved and examined.

The first round of the review process involved scanning 2856 abstracts and the analysis of 128 articles. A further 48 articles were added as a result of exploding reference lists and updating the electronic search. A total of 176 articles were finally included, of which 37 referred to methodological issues and 139 investigated the determinants of satisfaction.

Scoping studies

Preliminary searching

Preliminary searching of a subsample of databases, and using a restricted range of search terms, illustrated the potential volume of the literature on satisfaction. MEDLINE alone yielded 125,000 text word hits (search terms appearing in the title, abstract or keywords of a database entry) over the period 1980–1998. This was reduced to 5700 when only title words were searched. Across all databases for the same period, in excess of 270,000 text word hits were recorded.

A longitudinal analysis of the publication patterns showed a surge in published output on satisfaction, starting in 1990 and peaking in 1997. *Figure 3* illustrates this trend. This distribution is based on the search term "patient satisfaction" (which consistently produced the largest number of hits in test runs) in MEDLINE and CINAHL databases.

To obtain a better understanding of the types of publications covering satisfaction, a sample of abstracts generated by MEDLINE and the search term "patient satisfaction" for 1996 were downloaded and evaluated by team members. This exercise helped to confirm the review questions and to formulate the electronic search strategy.

Overview of the satisfaction literature

The scanning of abstracts in the test year showed that many publications of various types related to satisfaction. For the purposes of the review, three broad categories were identified, although some articles could be allocated to more than one group:

Background articles

This group included reviews, commentaries, editorials and opinion pieces about various aspects of the measurement of satisfaction with healthcare, in different settings and from a range of perspectives. Although often drawing on the findings of existing primary studies, publications in this category did not present the results of new empirical work. Articles in this group included descriptions of institutional arrangements and discussion of conceptual issues surrounding the measurement of satisfaction with healthcare.

Empirical articles

This group included all reports of primary research in which satisfaction was measured or evaluations of healthcare were reported. The diversity in the sample was marked along several dimensions:

- In some articles, satisfaction was the target of the investigation, or the prime outcome variable, while in others it was one of many outcomes measured by authors.
- Although some satisfaction studies were generic, others were highly specific, being measures of satisfaction with specific treatments for particular conditions or in named facilities.
- The majority of empirical studies investigated the factors affecting satisfaction with healthcare, using observational designs. A small number tested the effect of different methods of collecting satisfaction data, sometimes through experimental means.
- Studies were conducted in a wide variety of

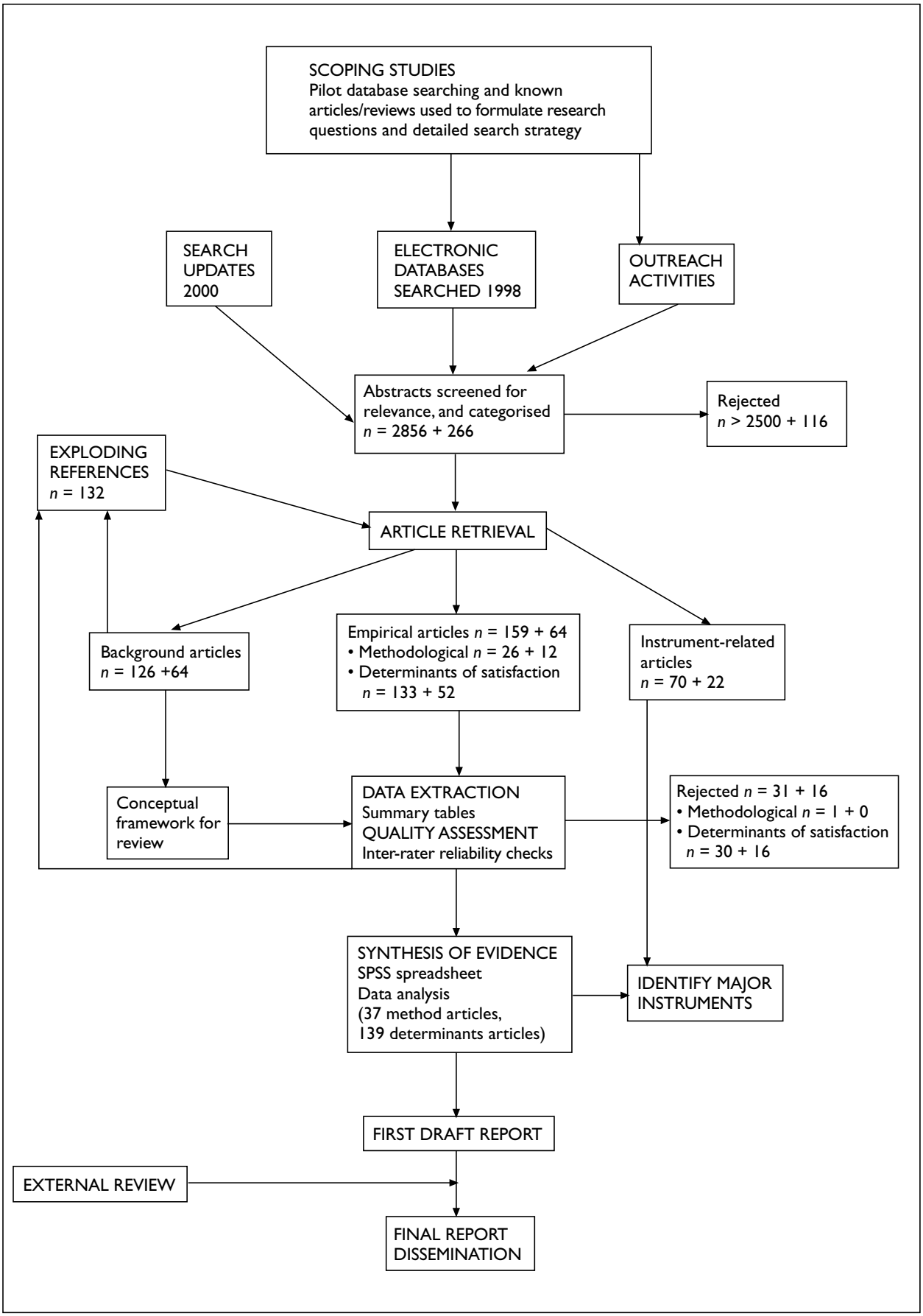

FIGURE 2 *Flow chart of review methodology (totals for first and second rounds of the review are shown separately e.g. 159 + 64)*

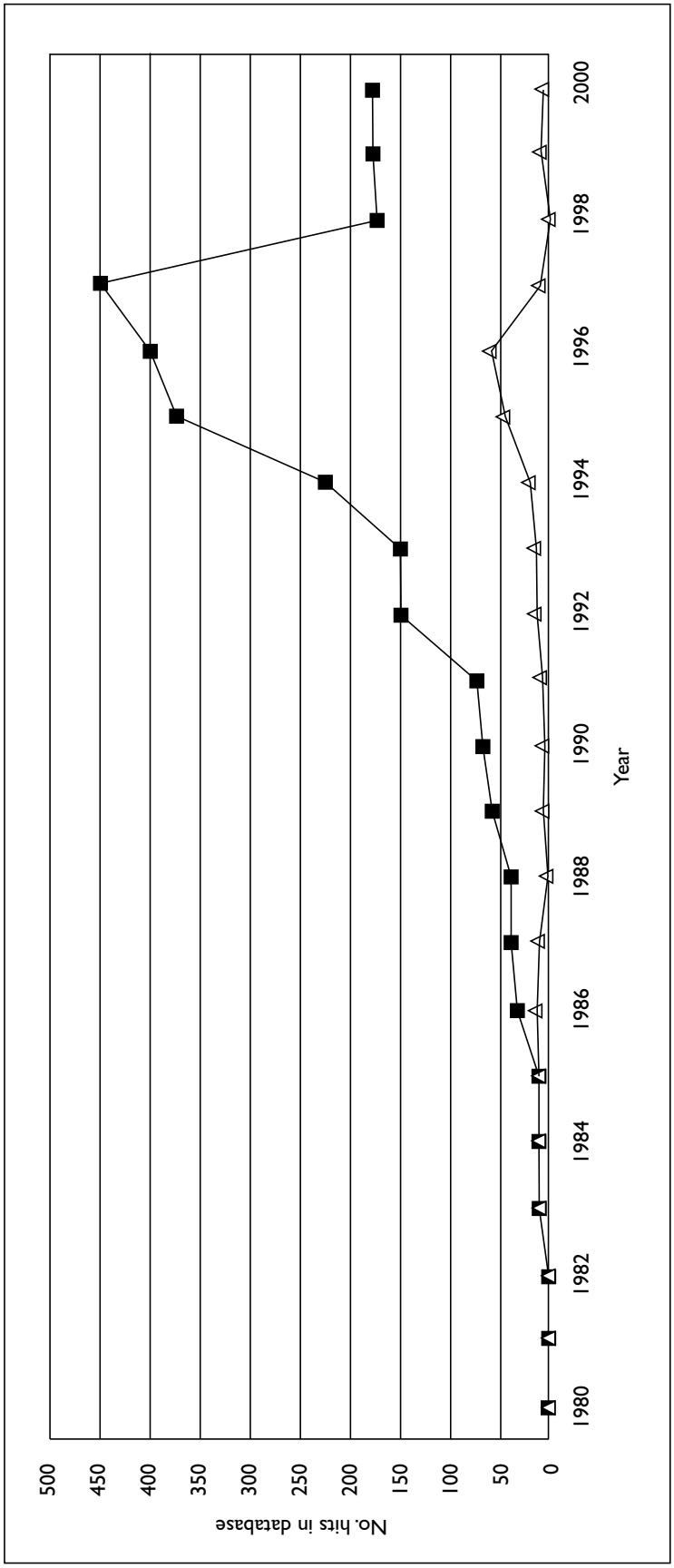

FIGURE 3 *Hits for term "patient satisfaction" as a title word in MEDLINE (■) and CINAHL (△)*

settings: primary care, hospital care, ambulatory care, and healthcare in general. Some studies concentrated on satisfaction with specific visits, others on episodes of care, or, even more specifically, on the features of the patient–physician interaction. A number of investigators concentrated on expressions of dissatisfaction.

Instrument-related articles

This group included articles reporting the design, testing and validation of instruments used in the measurement of satisfaction in a range of settings. In many cases, new instruments were the product of empirical studies that had confirmed the important factors affecting satisfaction in different settings and contexts.

Review questions

Review questions were confirmed by reference to seminal articles, existing literature reviews, and preliminary database investigations.

Two main areas were identified where there was a need to summarise and appraise diverse evidence:

- the methods of collecting satisfaction evidence
- the factors affecting satisfaction with healthcare.

It was decided not to limit the review to a consideration of patient satisfaction, because this would focus attention on patients' evaluations of the treatment they received. The review addressed "the measurement of satisfaction with healthcare" in order to incorporate consumer views about the broader issues relating to features and functioning of the healthcare delivery system in general, such as access, availability, choice and cost. Our search strategy focused on a range of evaluative approaches.

Search strategy

Electronic searching

Search terms

A final list of search terms was developed by a series of brainstorming sessions, examining the test year abstracts for synonyms, and scanning seminal articles and reviews for further possible terms. The final list (appendix 2) comprised: patient and eight synonyms (such as consumer, client, user); satisfaction and 12 synonyms (such as evaluation, view, opinion, appraisal); healthcare; medical care; and measurement. All permutations were included, and truncations were used as appropriate. No restrictions were placed on the types of articles to be included in the review. Foreign language articles were not excluded.

Databases

The electronic search covered seven major databases for the years 1980–1998; it was subsequently updated to 2000:

- Bath Information and Data Services Science
- Bath Information and Data Services Social Science
- CINAHL
- MEDLINE
- PsycLIT
- Sociofile
- The Cochrane Library.

Search precision

With such a large volume of published material concerned with the measurement of satisfaction, search precision became a major objective. To limit the product of the electronic search to a manageable number of abstracts, and to try to ensure that satisfaction was a central feature in the articles identified, it was decided to search only titles. The pilot searches showed that this strategy produced 5–10% of the number of hits that were recorded when all text words were covered by the search. The pilots also confirmed that this approach removed false-positives (articles selected in which satisfaction was a subsidiary outcome) while keeping the number of false-negatives (missed articles in which satisfaction was a major focus or outcome) to less than 2%. Given the magnitude of the potential literature, this was judged to be an acceptable trade-off. It was presumed that any important articles missed by limiting the search to title words would be picked up by other means, such as exploding reference lists of identified articles.

Preliminary calculations suggested that we would identify some 3150 abstracts through title searches. This was based on the observations that MEDLINE 1996 contained one-seventh of all relevant MEDLINE articles between 1980 and 1998, that there were approximately 1000 title word hits across the seven databases in 1996, and that overlap between databases was approximately 55%.

The search initially produced 4562 hits. These were exported to Reference Manager. After duplicates were removed, this number was reduced to 2856.

Search verification

At this stage, the reference list was checked to ensure that it contained seminal articles and

significant known reviews, thereby confirming that the search had been comprehensive.

Identifying literature by non-electronic means

The pilot analysis of 1996 MEDLINE abstracts had shown that publications relating to healthcare evaluations were not concentrated in a small number of journals, but appeared in a wide variety of publications. This reflects the multi-disciplinary interest in the subject area. It was therefore decided that handsearching journals would not be a good use of limited project resources, so efforts were focused on outreach activities.

Making contact with experts from a variety of disciplines, with academic and practical interests in measuring satisfaction with healthcare, was considered to be particularly important to ensure that the grey literature was uncovered and that the review avoided publication bias. The National Research Register was searched at this stage; no relevant ongoing projects were identified from that source.

The details of outreach activities are recorded in appendix 3. Individuals and organisations with an interest in quality of care and satisfaction were targeted to alert them to the review, and to request relevant information about recently completed research and work in progress. We encountered considerable interest and support from the people we approached, and much valued advice was received.

Contacts were sought in the following ways:

- open memo to ten health-related mailbase e-mail lists
- notices and flyers displayed at major health services conferences, and proceedings scanned for reports of work in progress
- telephone calls to organisations listed in the NHS Directory
- personal contacts with leading academics who are well known for their work on satisfaction
- visits to local NHS quality assurance officers to gain an understanding of how satisfaction/dissatisfaction issues are routinely dealt with in practice
- approaches to major US organisations involved in satisfaction research.

Abstract screening

Abstracts downloaded from the electronic search, and publications collected from other sources, were screened for relevance to the review questions and sorted into two categories: included and rejected. The process was undertaken collectively by three team members. Where necessary, a consensus was reached through discussion.

Exclusion criteria

The exclusion criteria were based on the experience of the pilot literature review. To ensure that the review focused on good-quality, generalisable evidence that would address the chosen research areas, it was decided to:

- Exclude all articles that were specific to a particular treatment, condition, disease or patient group. Dentistry, psychiatry, psychotherapy and studies focused on children were also excluded because of the special measurement issues facing investigators in those areas.[130]
- Exclude all articles that were specific to a particular healthcare facility. The objective of this criterion was to exclude evaluations of location-specific features (e.g. patients' views of the "hotel" service in particular hospitals).

Exceptions were made to these exclusion criteria when a study focused on generic issues (e.g. how expectations affected satisfaction).

No restrictions were placed on study design. The pilot screening had shown that most evidence on the determinants of satisfaction was to be obtained from studies that were observational in nature.

These exclusion criteria removed in excess of 2500 articles, the majority as a result of the condition-specific nature of a study. Satisfaction studies relating to a wide variety of treatments and conditions were encountered. Common amongst these were evaluations of cosmetic procedures, fertility treatment, contraceptive services, telemedicine, anaesthetics, cancer care, endoscopy, maternity services, pharmacy services, emergency services, day surgery and district nursing. Specific medical conditions that have featured in satisfaction studies are as diverse as leprosy, myocardial infarction, hernia, carpel tunnel syndrome and asthma.

As a result of the exclusion of research undertaken about services in particular facilities, studies set in student or military health centres were ruled out. Home-based healthcare and hospital food evaluations were similarly excluded.

Included articles

Included articles were classified as:

Background articles

This group (n = 126, n = 64 in the first and second rounds respectively) included reviews, conceptual articles, commentaries and other publications concerned with the measurement of satisfaction with healthcare, but which did not report new primary research.

It was decided that background articles would be considered early in the course of the project, before the analysis of empirical articles began, so that a structural framework to guide the review could be established. Background articles were assessed for their relevance by two team members. Although no formal quality assessment was undertaken, salient points were recorded on forms designed for the purpose, as shown in appendix 4. A draft document, addressing definitional and conceptual issues, was prepared and discussed at a team meeting. The results of this process form the basis for chapter 1 of this report.

Empirical articles

This group of articles (n = 159, n = 64 in the first and second rounds respectively) provided the substance of the review. They reported primary research evidence for addressing the study questions. A distinction was made between articles investigating methodological issues and those exploring the factors affecting satisfaction.

Instrument-related articles

It was decided that instrument-related articles (n = 70, n = 22 in the first and second rounds respectively) would be reviewed last, as time and resources permitted. The identification of commonly used instruments was an outcome of the review, but a detailed assessment of the content, applications and psychometric properties of different instruments was not undertaken because this would have entailed further searching and analysis.

Article retrieval

Articles were retrieved by a variety of means, including interlibrary loans and visiting major libraries. Foreign language papers (n = 10) were translated after retrieval, and analysed in the same way as the others.

Data extraction and quality assessment

Empirical articles were subdivided by type: methodological, or determinants of satisfaction. Those investigating determinants were subdivided by setting (primary care, in hospital, outpatient) or focus (dissatisfaction, organisation of healthcare, patient–practitioner interaction). Groups of articles were allocated to team members according to their expertise.

Data were extracted from articles and entered on specially designed and piloted forms by two independent readers. These forms (appendix 5) recorded bibliographic details and structured information about the study: country, aims, background, theoretical basis, setting, population, sample, data collection, analysis, results and conclusions. The forms also contained a section for recording how satisfaction was measured, and one for readers' comments on the article's strengths and weaknesses.

To monitor the methodological quality of studies, both readers independently completed quality assessment forms for each article (appendix 6). This form distinguished four study types:

- experimental, where an independent variable was manipulated
- observational, correlational or quasi-experimental, where no independent variable was manipulated
- qualitative
- other (e.g. meta-analysis).

To make the quality assessment process systematic, validity checklists appropriate to each type of study were compiled and piloted. These were based on existing methodological studies.[129] Assessments of experimental and observational studies focused on factors related to sampling, participation, attrition, representativeness, instrument validity and reliability, confounding factors, and statistical techniques. Randomisation, control and blinding features were noted for experimental studies. Qualitative guidelines were based on accepted criteria.[131] Articles of other types were assessed by using appropriate quantitative criteria.

In addition to evaluating individual methodological features, readers were asked to make an overall judgement about the quality of each article: acceptable, marginal or poor. Studies were deemed poor if an assessor had identified sufficiently serious methodological flaws that they considered the findings to be untenable. Quality assessment reports were used to confirm the inclusion of articles and were subjected to tests of inter-rater consistency. Articles that were deemed poor by both assessors were subsequently excluded. In cases of inter-rater

disagreement, a third reader was introduced for a further independent assessment. All disagreements were discussed and resolved successfully.

Data analysis: study synthesis

Study summaries

A heterogeneous group of studies had been identified by the search process. There was marked diversity with respect to the objectives, methods, settings, samples and outcomes of the included studies, such that a statistical meta-analysis was not possible and a narrative or qualitative review was undertaken.[129]

Structured tables summarising the main points of each included study were prepared from the data extraction sheets. The summary tables for the methodological evidence and the studies reporting the determinants of satisfaction differed slightly in format (appendices 7 and 8), but both recorded: basic bibliographical details; the setting, country, objectives, context and design of the study; information about the sample, data collection and analysis; how satisfaction was measured; relevant results and conclusions.

Predetermined categories were established for coding the setting, context and design of studies:

Study settings

A variety of terms were used by authors to describe the settings in which evaluations were conducted, reflecting different ways in which care is organised in specific countries. Where possible, studies were categorised according to the authors' own terminology. This produced four main groups:

- primary care/general practice, including family practice
- hospital outpatient/ambulatory care (note: this group may include some forms of primary care in North America)
- hospital inpatient
- healthcare in general.

Study contexts

A distinction was made between:

- studies that presented an explanatory model and tested a theoretical construct
- empirical studies that may have tested a hypothesis, but lacked a theoretical basis or model
- pragmatic studies undertaken for management objectives.

Study designs

Studies were categorised as:

- experimental, where an independent variable was manipulated
- observational, where there was no deliberate manipulation of an independent variable
- other (e.g. meta-analyses).

The pilot search showed that the majority of studies were observational. Included in this group were quasi-experimental designs, including "natural experiments", where different existing service delivery arrangements or patient groups were compared. For practical and ethical reasons, studies investigating the determinants of satisfaction do not lend themselves to experimental designs. Methodological variations, on the other hand, can be tested by manipulating independent variables.

Methodological studies

Methodological studies were analysed first, so that the potential effects of methodological factors on satisfaction evidence was appreciated before the larger group of studies that explored satisfaction determinants was appraised. Articles that addressed methodological issues from amongst the group of background studies were located and used to provide a context for the discussion of the important issues in the measurement of satisfaction with healthcare, and to provide a framework for the evaluation of the available empirical evidence.

Twenty-six empirical studies with a methodological objective, reporting 25 data sets, were identified by the first round of the search. One of these was excluded as a result of the quality assessment process (appendix 9). A further 12 studies were identified from exploding reference lists and updating the search. The included studies covered a range of settings and issues. To synthesise these systematically an SPSS database was prepared. This summarised background information about each study: first author, journal, publication date, country, setting, context and design. It also recorded the aim of the study, the instrument used, the number of respondents, the method of analysis (qualitative, quantitative or both) and outcome measures. Categorical data were coded (appendix 10). Where quantitative analysis was undertaken, the instrument used by the study investigators was noted, and a distinction was made between multi-dimensional (with or without summary indices) and global measures of satisfaction.

Three types of methodological studies were identified: those comparing survey methods,

those investigating response rate issues, and those focusing on detailed aspects of survey design such as scaling. Four types of outcome measures were recorded: reported satisfaction, response rates, costs and other. Confounding factors were noted.

From the database, descriptive statistics (frequencies and percentages) about the sample of articles could be calculated, and studies investigating similar issues or using similar outcomes could be identified, allowing their findings to be synthesised. The results of the analysis of methodological studies are reported in chapter 3.

Determinants of satisfaction

Analysis of the articles investigating the determinants of satisfaction was guided by the structural framework that had been agreed by the research team (*Figure 1*, chapter 1). This model distinguished two main groups of factors affecting reported satisfaction:

- characteristics of individual consumers, including: sociodemographic factors, health status, and their expectations, beliefs, values and experiences
- health service delivery stimuli, including: the activities, attitudes and appearance of human resources; the physical care environment; and the organisational aspects of care.

In the first round of the review, a total of 133 articles were identified that contained evidence about factors affecting reported satisfaction. Thirty of these were excluded during the quality assessment process (appendix 9), leaving 103 for analysis. A further 52 articles were identified in the second stage, 16 of which were excluded. The evidence in included articles covered varied determinants of satisfaction in different settings, using a range of methods. Over half of the excluded articles were rejected because the information they contained was of a largely descriptive nature.

To synthesise the findings systematically, included articles were categorised across several dimensions, using an SPSS database. This recorded background information about each study (first author, date of publication, journal, country, setting), context, design, methods of analysis (quantitative, qualitative or both), number of respondents, and the determinants of satisfaction that were investigated (appendix 11). In line with the structural framework, determinants were grouped as individual factors (expectations, health status, sociodemographic, other) or health service delivery factors (organisation and structure, setting, physicians' characteristics, the patient–doctor relationship, other).

In studies using a quantitative (rather than a qualitative) analysis, the instrument used by the study investigators was noted, and a distinction was made between multi-dimensional (with or without summary indices) and global measures. The results of the analysis of the methodological articles indicated some further relevant considerations. Details of these were also included: first, whether satisfaction was measured by direct, indirect, or experience-based methods, and whether intentions to recommend/return had been recorded; and secondly, the mode and location of the data collection were recorded (telephone, mail, face-to-face interview, on-site, mixed methods). These two dimensions were not analysed for the smaller group of methodological articles because such issues were the focus of some of those investigations.

Evidence on behavioural responses by consumers to care evaluations (such as medication compliance or subsequent service utilisation) was also recorded when this had been reported. It should be noted, however, that the literature on the behavioural implications of (dis)satisfaction with care was not systematically searched for this review because the implications of satisfaction with care for health outcomes or service utilisation was not an explicit research question.

The database enabled a descriptive analysis (frequencies and percentages) of features of the corpus of studies to be carried out, and also the selection of groups of articles that reported investigation of the same independent variables. The descriptive statistics and the findings about how individual factors and health service delivery features affect satisfaction are reported in chapter 4.

Management of references and articles

Reference Manager was used to catalogue articles. An Excel speadsheet was used to keep track of articles issued to team members for review, to monitor the quality assessment process, and to record the inclusion/exclusion decisions.

Exploding references

As articles were read, reference lists were scanned for further relevant material, which was then recorded, retrieved and processed. A total of 132 additional publications were located using this method.

Updating searches

The search was repeated in May 2000. This yielded 266 abstracts. After known articles were disregarded and the abstracts had been screened for relevance, 18 articles were retrieved.

External review

The draft report was sent to a multi-disciplinary group of external experts for advice on its scientific quality and relevance. This group comprised academics and practitioners with interest in measuring satisfaction with healthcare; it included a patient group representative. The experts involved are listed in the acknowledgements.

Second-round analysis

The additional articles identified by exploding reference lists (n = 132) and updating searches (n = 18) were included in the analysis. Background articles (n = 64) and instrument-related articles (n = 22) were read by one team member. The data extraction from and quality assessment of empirical articles (n = 12 methodological; n = 52 determinants) was completed independently by two team members. After both rounds of analysis, a total of 37 methodological papers (covering 36 data sets) and 139 determinants papers (covering 127 data sets) were included. In all, 47 articles were excluded at the analysis stage, of which only one was methodological (appendix 9). Four articles were common to the methodological and determinants analyses. The overall inter-rater reliability for quality assessment was 0.88 (Cohen's kappa).

Chapter 3

Measuring satisfaction with healthcare: methodological issues

Introduction

In chapter 1, some general issues concerning the conceptualisation of satisfaction were discussed, and the scope of the review, covering the evaluation of healthcare in a range of settings, was established. It is important to use appropriate and scientifically rigorous means to evaluate care so that accurate and meaningful information is produced. Methodological weaknesses may generate misleading results and send out erroneous signals. To the extent that feedback influences service delivery, inappropriate decisions and resource allocations may follow from poorly designed and executed data collection exercises.

For the benefit of readers who are unfamiliar with social research methods, this chapter starts with a brief overview of basic issues. Those with expertise in this area may wish to skip the rest of this section and move straight to the presentation of the evidence about methodological issues (p. 24).

Measurement methods: an overview

There are many different means for assessing consumers' satisfaction with healthcare and several surveys have been published.[26,27,53,132] Some methods are based on observing consumers, others on directly approaching consumers to elicit their evaluations. The measurement method chosen is likely to be dictated by a number of practical factors, including the reason for the study, the setting, the resources available, and the characteristics of the target client group.

Observational means of assembling information about satisfaction include: employee feedback of user remarks and reactions, work-team quality circles, and the monitoring of service delivery through independent observers or undercover investigators.[133] In situations where consumers have unrestricted choices, available data on changes in registrations (other than those necessitated by changing circumstances), can also be analysed. An important drawback to each of these methods is the absence of direct and systematic user input.

Surveys are a popular means of collecting evaluations directly from interested parties. There is a range of different ways of surveying individuals and each method has particular advantages, disadvantages and methodological implications. In general, surveys are used widely in social research, and the state of knowledge about survey techniques is well documented in many texts devoted to the subject.[134–136]

Users can be offered the opportunity to volunteer their views on healthcare services, by making comment cards available at service delivery points or providing a comment telephone line[137] or e-mail address. The monitoring of informal communications[138] and formal complaints fulfils a similar function. Such methods, which are not based on an organised sampling frame, may over-represent the views of more articulate or vocal consumers.

Survey methods

Service users can be approached individually or in groups. Individuals may be asked to self-complete a questionnaire or be interviewed. Questionnaires can be distributed on site in hard copy form or at a computer terminal, or they may be mailed to potential respondents at their home. Personal interviews may be face to face (on site or at home) or by telephone.

Table 1 summarises some issues affecting the choice of survey data collection method. Response rates and biases are important considerations.

Although interview techniques may increase response rates, there is a possibility that interviewers can introduce bias. Respondents may give answers that they feel are socially acceptable rather than stating their true views when in a one-to-one situation. They may also be influenced by characteristics and attitudes of the interviewer, particularly in face-to-face situations. Interviewers themselves can make errors when delivering questions or recording answers. In contrast, mail surveys are likely to introduce bias because of low response rates. They disadvantage, or exclude, people with poor literacy skills. Furthermore, respondents are likely to be articulate people with

stronger feelings about either the issue or the value of letting their views be known.

Questionnaires can themselves vary markedly in format, ranging from structured at one end of the spectrum to non-scheduled (unstructured) at the other. *Table 2* summarises some issues and differences between these approaches.

Qualitative approaches

Qualitative methods are making an increasing contribution to research in healthcare. They include a variety of approaches, such as in-depth interviews, participant or non-participant observation, and conversational and documentary analysis. Most techniques include the generation and examination of data that are not easily reducible to numerical form. Qualitative methods contribute to our understanding of the social world, in particular by appreciating the individual perspectives of people within it. A particular feature of qualitative interviews is the scope given to respondents to influence the agenda of the interview. In contrast, the structure of the traditional interview schedule is predetermined by investigators, and may be influenced by their priorities and perceptions about what is important or by pragmatic considerations.

Ideally, questionnaire designs are informed by preparatory qualitative research and will include some open questions. If users are not consulted about the issues of importance to them at the design stage, or given the opportunity to comment beyond set items, feedback from questionnaires will not be meaningful.[139,140]

Critical incident analysis is a particular qualitative method, based on an interview approach.[141–143] It involves an attempt to pinpoint the cause(s) underlying expressed satisfaction or dissatisfaction. It presumes that value judgements (positive or negative) are triggered by an incident, otherwise the user is neutral. By identifying clusters of critical incidents (which may be actions or inactions by staff, systemic factors, or factors associated with the service environment) appropriate remedial measures can be taken.

Group interviews (focus groups) enable interaction between respondents; the mutual stimulation of views can, with the aid of skilled moderators, generate solutions as well as problems. Researchers using these approaches have the advantage of being able to target specified samples of respondents.

TABLE 1 *Comparison of survey methods*

Method	Advantages	Disadvantages
Face-to-face interview	Most intensive contact so can probe more Captures people who are unable to use self-completion questionnaire	Expensive Interviewer biases possible Lack of anonymity
Telephone interview	Greater anonymity may mean respondents are less inhibited than in personal interview Captures people who are unable to use self-completion questionnaire	Cannot use visual aids Reaches only people who have a telephone Interviewer biases possible
Mail/self-completion	No interviewer bias Cheaper Complete anonymity, so respondents are uninhibited in responses	Low response rates and non-response bias possible Disadvantages those with poor literacy skills No control over circumstances in which questionnaire is completed

TABLE 2 *Comparison of response formats*

Response format	Features	Advantages	Disadvantages
Scheduled/structured	Fixed scales Precoded responses Quantitative	Economical and easy to administer	Preselects issues and responses and may not adequately cover all areas of importance to respondents
Semi-structured	Some structured and some open-ended questions	Intermediate position	Intermediate position
Non-scheduled/ non-structured	In depth, qualitative, analysis of spoken or written word, or of observable behaviour	Client-orientated approach More candid opinions result in fuller appreciation	Labour intensive, time consuming and expensive, even for small samples, which may not be representative

Survey design issues

Scaling techniques

Questionnaire items in structured, precoded questionnaires typically have a stem that describes the aspect of care respondents are being asked to evaluate, and a scale that defines the choices respondents must use to express their level of satisfaction. Neither the stem nor the scale need to refer directly to the word "satisfaction", which respondents tend to endorse unless they have significant problems with their healthcare (so-called "normative effects"[141]). The stem may be a statement about an aspect of healthcare service that patients are invited to rate, and from which satisfaction levels are indirectly inferred.

A wide variety of scaling techniques are available to researchers. A frequently used approach in satisfaction studies is the Likert scale, where respondents may be asked to rate aspects of a service or state the extent to which they agree/disagree with predetermined statements. To establish intervals, scale points are assigned numerical values (e.g. 1 to 5). Scores can be summed across groups of statements having equal weights that measure the same theme. Other possible scaling techniques include verbal frequency scales, rankings, linear numerical scales, semantic scales and adjective checklists.

Global and summary measures

Many surveys acknowledge the multi-dimensional nature of healthcare and investigate consumers' evaluations of a range of factors that are believed to contribute to overall service quality. There is some debate about the use of global (single-item) indices. Although these are more economical to collect, they can disguise varied judgements on different aspects of care and they therefore provide limited guidance to managers.[144] Moreover, halo effects are possible: strong impressions about the quality of the doctor, or the art of care, can shape the overall judgement.[141] Single-item satisfaction measures may therefore be less valid and reliable than well-constructed multi-item measures, especially in populations with lower levels of education or less well-developed cognitive skills.

There is also debate about the hierarchical properties of multi-item, multi-dimensional instruments. If item scores within dimensions are summed, but not weighted, the fact that some items may be more important to the underlying construct is not taken into account. For the summary score of a multi-item dimension to be reliable, scales must be homogeneous, otherwise contradictory trends may be disguised. A correlation above 0.4 between individual items, and between items and the summary, has been suggested as a benchmark.[5] A further issue concerns the combination of subscale summaries to give a total score for the instrument.

Principal components or factor analysis is often used by researchers to combine a large number of items that affect satisfaction into definable dimensions of care. Factor scores can then be used to weight items in deriving total scores. Alpha coefficients can be used to check if factors are homogeneous.

General and personal referents

A distinction is drawn between people's general satisfaction with the quality of medical care and their satisfaction with the care they personally receive. These have also been referred to as the macro and micro dimensions respectively.[145]

Response biases

Several possible sources of response bias exist, associated with the wording of the questionnaire, its construction, and respondents themselves. Inappropriately worded questions can inadvertently elicit inaccurate responses. The conventional wisdom suggests that questions should be brief, focused and clear to respondents. They should not contain jargon or give scope for ambiguity. Questions should not lead respondents or be over-demanding in terms of recall or the mental exertion required to answer them. They must probe only one item at a time, and not overlap, and must be applicable to all survey participants.

Question sequencing may affect results. It is usual practice to start with general questions before moving to more specific issues because previous items can influence later responses. Items are usually arranged in a logical order following the sequence of service delivery. It is generally considered best to keep together questions relating to the same topic or those using a common scaling technique. More sensitive questions (such as those related to respondents' socio-economic and demographic circumstances) are usually left to the end, but it is recommended that surveys close on a soft note. Progress through a questionnaire can be directed by conditional branching. Clear instructions are equally important in interviewer-administered surveys and in self-completion questionnaires.

Respondents may introduce bias in a number of ways: by giving socially desirable responses (saying what they believe providers want to hear or what

is socially acceptable); as a result of cognitive consistency pressure (making satisfaction ratings congruent with their continuing use of the service); and through acquiescent response sets (the tendency always to agree or reply positively).

Overview: characteristics of included studies

A range of methodological issues concerning the measurement of people's evaluations of healthcare were addressed by the articles identified by this review. Evidence was drawn from 37 articles (36 data sets). Of these, 57% were published in medical journals, 24% in health services journals (including those dealing with management or quality issues), and 19% in social science (including psychology) journals. A table detailing the main features of each study are presented in appendix 12, in alphabetical order of first author.

Most studies in this group were conducted in North America (*Table 3*), and in the last decade (*Table 4*). A range of settings is represented by the sample (*Table 5*). The evidence has been derived in two different circumstances: for pragmatic reasons by managers seeking meaningful measures of satisfaction to assist them in their marketing or quality assurance programmes (10 studies; 27%), or by academic researchers investigating an empirical issue (27 studies; 73%). No methodological studies with a theoretical basis were identified by the searches (*Table 6*). Eleven studies (30%) secured more than 1000 responses. Five (13%, 4 of which had qualitative elements) involved fewer than 100 participants (*Table 7*). Nineteen studies (51%) were observational in design, 17 (46%) were experimental and one was a meta-analysis (*Table 8*).

With respect to the main focus of the studies, 28 (76%) examined alternative data collection methods (e.g. telephone versus mail) and the effect this had on response rates and evaluations. The evidence extracted from these studies is presented in the next section. Ten studies (27%) investigated detailed survey design issues, such as the significance of question structure, and this evidence is presented later in this chapter. One study covered both data collection methods and question wording.

Of the total articles, 34 measured satisfaction with a multi-dimensional survey instrument. Among these, 19 investigators (56%) used available instruments; the rest used instruments that they

TABLE 3 *Methodological studies by country*

Country	*n*	(%)
USA	21	(57)
Canada	1	(3)
UK	10	(27)
Rest of Europe	2	(5)
Other	2	(5)
Review	1	(3)
Total	37	(100)

TABLE 4 *Methodological studies by publication date*

Date	*n*	(%)
Pre-1980	1	(3)
1980–1985	3	(8)
1986–1990	5	(13)
1991–1995	11	(30)
1996–2001	17	(46)
Total	37	(100)

TABLE 5 *Methodological studies by setting*

Setting	*n*	(%)
General practice/primary care	7	(19)
In hospital	13	(35)
Hospital outpatient/ambulatory care	11	(30)
Healthcare in general	5	(13)
Various (review article)	1	(3)
Total	37	(100)

TABLE 6 *Methodological studies by context*

Context	*n*	(%)
Theoretically based	0	(0)
Empirical (academic)	27	(73)
Pragmatic (management)	10	(27)
Total	37	(100)

TABLE 7 *Methodological studies by size (number of respondents)*

Size	*n*	(%)
<100	5	(13)
100–499	14	(38)
500–999	7	(19)
1000–4999	7	(19)
5000–9999	3	(8)
10,000+	1	(3)
Total	37	(100)

TABLE 8 *Methodological studies by study design*

Design	*n*	(%)
Experimental	17	(46)
Observational	19	(51)
Other (review)	1	(3)
Total	37	(100)

designed themselves. Other articles reported exclusively qualitative studies ($n = 2$) or meta-analyses ($n = 1$). One study[146] concentrated on dissatisfaction, and another[147] used intentions and actual changes in provider as an indicator of satisfaction. The evidence uncovered by the review is discussed at the end of this chapter.

Evidence on modes and response rates

Different modes of administration may generate different response rates and variation in the recorded patterns of satisfaction or dissatisfaction with healthcare. Twenty-eight articles, using 27 data sets investigating alternative data collection methods and response rate issues were identified. Summaries of these articles are presented in alphabetical order of first author in *Table 9*. Eleven of these studies[148–157] allowed for the effect of potentially confounding sociodemographic factors in the analysis.

Response rates and mode

There is evidence that interview methods (both telephone and face to face) result in significantly higher response rates (by up to 30%) than mail surveys. This was recorded in both ambulatory care[146,152] and with discharged patients who were asked about their in-hospital care.[157–159] This finding was confirmed by a systematic review of 210 studies,[160] which recorded an average response rate for interview studies of 77%, compared with 67% for mail surveys. The difference between mail and telephone response rates can, however, be significantly reduced by telephone follow-up of mail non-respondents,[161] although this adds to costs.[154]

Costs and mode

Costing data in three studies showed that mail surveys are a less expensive method of data collection,[149,157,159] except where telephone follow-up is used to increase the response rate.[154]

Patient ratings, mode of survey and location

Studies comparing patient ratings by mode of survey administration show that impersonal and mail methods result in more criticism and lower recorded satisfaction than personal contact and interview methods.[157,158,162,163] Surveys administered on site also result in less expressed dissatisfaction.[146,151,152,156,164] There are two exceptions to these trends, but both of the studies concerned had low overall response rates.[159,165] (Studies with low response rates in this section were not excluded by the quality assessment process because response rate was an outcome measure.)

Higher recorded satisfaction in interview studies, and in surveys administered on site, is generally attributed (by authors) to respondents wishing to give socially acceptable answers in circumstances where their anonymity is compromised. They may also be less willing to articulate sensitive or embarrassing issues.

Greater variability in satisfaction scores in mailed versions compared with interviews is also observed. This may result from response bias in mailed surveys. People who feel neutral about their care may not be motivated to participate, and respondents are likely to be those who have strong feelings (of a positive or negative nature).[158]

Proxy respondents (usually other family members) have been shown to be more critical of care than patients themselves.[157] Adjustments for this effect can be made, although proxy responses are not always detectable by mail methods, and investigators do not always display a recognition of this difficulty.

Low response bias

Low response rates may introduce bias in survey findings because non-respondents may differ from respondents in ways that affect their evaluation of different aspects of care. The characteristics of survey respondents and non-respondents have been specifically investigated by two studies.[153,157] Collectively, they suggest that non-respondents are more likely to be non-white, less well educated and uninsured (in the USA), and that the views of such groups are accordingly under-represented. The problems of obtaining useable responses from certain sections of the hospital population are illustrated by two investigations that found elderly, severely ill, cognitively impaired and immigrant patients with language difficulties unable to participate.[166,167] On-site surveys of ambulatory populations under-represent low users.[164]

Considerations such as these raise the question of what actual response rate is required to ensure the generalisability of the results. Satisfaction ratings based on the first 30% of respondents to a post-discharge mailed survey have been shown to be significantly different in half of the dimensions measured to those based on all respondents (58% of those contacted). This means that decisions taken on the basis of early responses have a chance of being ill-advised. As a result of this

TABLE 9 *Empirical studies that investigated data collection methods and response rates*

Reference	Country Setting	Design Conext	No. responses	Focus	Findings
Barkley and Furse, 1996[168]	USA In hospital	Empirical Observational	11,342	Effect of low response rates	First 30% of responses significantly different from all responses in 50% of items
Bowman *et al.*, 1992[148]	USA Family practice	Empirical Experimental	64	Clinic interview vs telephone vs mail; at time of consultation and 1 month later	At time of consultation: telephone had highest response rate, lowest satisfaction 1 month later: telephone scores unchanged, others fell (original interviewees contacted by telephone)
Cohen *et al.*, 1996[162]	UK In hospital	Empirical Observational	5,254	Interview vs mail	Mail: higher dissatisfaction
Ehnfors and Smedby, 1993[167]	Sweden In hospital	Pragmatic Observational	3,602	Response rates	Procedures for survey implementation affect response rates
Etter *et al.*, 1996[188]	Switzerland Hospital outpatient	Empirical Experimental	389	Effect of sponsorship on response	Little effect
Fowler *et al.*, 1999[161]	USA Healthcare in general	Empirical Experimental	1,576	Mail (telephone follow-up) vs telephone	Revisions to Consumer Assessment of Health Plans (CAHPS) after pretests removed significant mode effects
Goldsmith, 1983[149]	USA General practice	Pragmatic Experimental	198	Self-completion vs telephone vs open-ended questions	Interactive methods more costly, time consuming and informative Open-ended questions generated more negative comments
Hall, 1995[158]	USA In hospital	Pragmatic Experimental	406	Telephone vs mail, with reference to acquiescent bias	Telephone: 49% response, less criticism Mail: 41% response, larger range of opinion
Harpole *et al.*, 1996[146]	USA Hospital ambulatory care	Empirical Experimental	669	Mail vs on-site (dissatisfaction)	Mail: lower response, more dissatisfaction
Jackson *et al.*, 2001[150]	USA Ambulatory care	Empirical Observational	500	Effect of timing of survey: immediate, 2 weeks, 3 months	Satisfaction (global measure) increased over time and affected by symptom resolution After consultation, doctor–patient interaction and functioning affected satisfaction
Jones *et al.*, 1993[151]	UK Hospital outpatient	Pragmatic Observational	200	Clinic vs mail vs interview	Mail: lower response Impersonal methods: more dissatisfaction
Kinnersley *et al.*, 1996[152]	UK Family practice	Empirical Experimental	198	In clinic vs mail questionnaire	Mail-in from home had lower response and lower satisfaction than clinic completion

continued

TABLE 9 contd *Empirical studies that investigated data collection methods and response rates*

Reference	Country Setting	Design Conext	No. responses	Focus	Findings
Lasek *et al.*, 1997[153]	USA In hospital	Empirical Observational	8,802	Non-response bias	Non-responders differed from responders, but little difference in satisfaction
Lewis and Williamson, 1995[163]	UK General practice	Empirical Observational	390	Quantitative questionnaires vs qualitative interviews (both in clinic)	Both favourably received Quantitative easier to analyse Interviews more favourable responses
Levin and Devereux, 1986[170]	Canada In hospital	Pragmatic Observational	50	Patient feedback (qualitative)	Questioned validity of survey methods to monitor dissatisfaction
Meredith, 1993[172]	UK In hospital	Empirical Observational	30	Qualitative study of how problems reported	Interviews gave high response rate and reached groups missed by survey approaches
Meredith and Wood, 1996[171]	UK In hospital	Empirical Experimental	702	Qualitative vs survey methods	High degree of confirmation Methods complementary because interviews emphasise detail
Nelson *et al.*, 1990[154]	USA In hospital	Empirical Experimental	2,113	Mail (telephone follow-up) vs telephone Incentives	No difference in response rate Mail $94 higher cost/completed response Pen significantly raised mail responses for $10/completed questionnaire
Osterweis and Howell, 1979[164]	USA Ambulatory care	Pragmatic Experimental	1,225	Mail vs telephone vs on site	No significant differences in response rates Lower dissatisfaction on site, but did not capture low users
Parker and Kroboth, 1991[166]	USA In hospital and outpatient	Pragmatic Observational	341	Response rate	Practical problems resulted in selectivity in responses
Rhee *et al.*, 1998[159]	USA Hospital ambulatory care	Pragmatic Experimental	720	Telephone vs mail response rate	Telephone: higher cost (10%) and higher response; no differences in satisfaction
Savage and Armstrong, 1990[169]	UK General practice	Empirical Experimental	212	Immediately after consultation in clinic vs mail back after 1 week	Feeling of being helped lower after 1 week, but this may have been a location effect
Sitzia and Wood, 1998[160]	Many Various	Empirical Review	(210 studies)	Non-response bias (systematic review)	Face-to-face methods: higher response Poor awareness of issues surrounding response-rate bias
Thomas *et al.*, 1995[173]	UK In hospital	Empirical Observational	150	Focus groups vs individual interviews	Focus groups: more issues raised, but no difference in depth of discussion

continued

TABLE 9 contd *Empirical studies that investigated data collection methods and response rates*

Reference	Country Setting	Design Conext	No. responses	Focus	Findings
Thomas *et al.*, 1996[156]	UK In hospital	Empirical Observational	566	Usefulness of open-ended questions In hospital vs home completion of questionnaire	Open-ended questions generated bland answers, not specific comment Lower response, more critical from home
Thomas *et al.*, 1996[155]	UK In hospital	Empirical Observational	74	Effect of survey timing on satisfaction: predischarge vs 20 days after discharge	No significant differences in reports of experience or satisfaction, possibly owing to small sample
Trandal-Korenchuk, 1997[165]	USA Family practice	Empirical Experimental	925	Receptionist at check-in vs student at check-in vs mail vs telephone	Mode had no effect on satisfaction indicators
Walker and Restuccia, 1984[157]	USA In hospital	Pragmatic Experimental	527	Telephone vs mail	Telephone: higher cost (20%), more positive responses, higher response level; characteristics of non-responders differed from responders Proxy respondents more critical than patients

finding, the authors concerned recommended a minimum response rate of 50%, pending further research.[168]

Timing effects

The results of the four studies that investigated the effect of timing on users' evaluations present insecure and contradictory results. Two studies suggest that satisfaction decreases further from the encounter, but in both cases changes in the location of follow-ups may have confounded the findings.[148,169] Another study records increasing satisfaction as time from treatment increases, but this conclusion was based on responses to a simple global question.[150] The fourth study showed no differences in satisfaction at discharge and 3 weeks later, but confined the follow-up survey to a small proportion of the total sample.[155] Health status may be an important mediating factor.[150]

Qualitative versus quantitative approaches

Seven studies involved qualitative methods. They confirmed that data for qualitative studies are more time-consuming and costly to collect and analyse than data for structured surveys, but that qualitative methods yield a more detailed account of people's perceptions of their care.[163,170–172] Open-ended approaches can generate more negative comments than closed questions,[149] although the responses may lack detail.[156] In a comparison of focus groups and individual interviews, no difference was found in the depth of discussion, although more issues were raised in group situations.[173]

Evidence on survey design issues

Ten studies were identified that produced evidence on various survey design issues. These are summarised in *Table 10*, presented in alphabetical order of first author.

Referents

In two studies, items with a personal referent (i.e. referring to the respondents' personal medical care) were associated with higher recorded satisfaction than items worded similarly in all respects except that they had a general referent (i.e. they referred to medical care in general). The higher scores on personal referent items have been linked with socially desirable responding,[174] and have been shown (in the US context) accurately to predict health plan changes.[147]

In another study, visit-specific satisfaction was modestly but significantly correlated with a global measure of satisfaction with medical care in general that was collected by a mail survey some 3 months after the visit.[175] From this finding, the authors concluded that there is a value in measuring general and visit-specific satisfaction separately.

Summary scores

One study[176] tested alternative ways of deriving summary assessments from dimension components and found that non-linear, non-compensatory methods predict overall satisfaction as effectively as the less sophisticated, traditional, linear compensatory approach.[177]

Acquiescent response set

Acquiescent response set is the tendency of respondents to agree with statements irrespective of their content. It raises the issue that reported satisfaction may simply be acquiescence if questions are phrased in a positive way. Respondents can give illogical answers; they agree with both of a pair of statements for which the content is the same but the direction of the statement is reversed. In experimental tests in three studies, acquiescent response set was recorded in up to 50% of cases and found most commonly among older, sicker, less well educated and lower income respondents.[162,178–180]

It is to neutralise acquiescent response set that balanced scales with equal numbers of favourably and unfavourably worded items are often recommended. However, one study[179] showed more acquiescence in negatively worded items, which means balanced scales would not be a solution, and concluded that measures from multi-item approaches of this type should be treated with caution.

Cross-cultural issues

One study compared Spanish and English views on interpersonal aspects of care.[181] Despite exhaustive efforts on the Spanish translation, Spanish respondents used "good" categories more, and "fair–poor" categories less than English respondents. This may reflect cultural differences in the use of language, or in the appreciation of the health service factors they were evaluating.[182]

Scaling

In a test of the Visit Specific Questionnaire, a 6-point direct rating of satisfaction ("very satisfied" to "very dissatisfied") yielded less response variability than a 5-point indirect rating of the same aspects scaled "excellent to poor". There were also significant order of administration effects, with

TABLE 10 *Empirical studies that investigated survey design issues*

Reference	Country Setting	Design Context	Sample size	Focus	Findings
Cohen *et al.*, 1996[162]	UK In hospital	Empirical Observational	5254	Wording issues	Fewer respondents agreed with a negative statement about care than disagreed with a positive statement about the same aspect
Hayes and Baker, 1998[181]	USA Hospital outpatient	Empirical Experimental	484	Scaling issue English vs Spanish version	Spanish used fair–poor categories more than English Categorisation of satisfaction scales affected reported findings
Hays and Ware, 1986[174]	USA Medical care in general	Empirical Observational	3918	Effect of referent	Personal referent results in higher satisfaction than general referent
Kloetzel *et al.*, 1998[178]	Brazil Ambulatory care	Empirical Experimental	130	Compared same 12 items using: icons of sad/happy faces; numerical scales (n = 36); agree/disagree, positive wording; agree/disagree, negative wording	Although responses to positively and negatively worded statements were significantly different, no significant differences were observed between icons and numerical scales
Marshall *et al.*, 1993[175]	USA Ambulatory care Medical care in general	Empirical Observational	233	Relationship between domain summaries and global satisfaction	High correlations consistent with hierarchical structure Visit satisfaction modestly correlated with general satisfaction
Neumann and Nuemann, 1984[176]	Israel Medical care in general	Empirical Observational	225	Derivation of global measures from individual facets	Non-linear, non-compensating models predicted overall satisfaction as effectively as linear compensating models
Ross *et al.*, 1995[179]	USA Hospital ambulatory care	Empirical Observational	5124	Compared acquiescent response bias and variability of 7 methods to measure satisfaction	Different methods produced different satisfaction results and degrees of bias
Senf and Weiss, 1991[147]	USA Medical care in general	Pragmatic Observational	1280	Effect of referent	General referent elicited more dissatisfaction than personal referent
Ware, 1978[180]	USA Medical care in general	Empirical Observational	599	Acquiescent response set bias	Acquiescent response bias detected in 4–10% of participants Concentrated in low-income/education groups
Ware and Hays, 1988[183]	USA Hospital outpatient	Empirical Experimental	2546	Compared 5- and 6-point scales	5-point scales more variable and better predictors of behavioural intentions Order of administration effects detected

scales generating higher satisfaction ratings when administered later in the questionnaire.[183]

Significant differences in satisfaction can also arise from the way in which scaled responses are collapsed and combined for analysis.[181] Accordingly, non-parametric statistical tests of response distributions for non-interval data are recommended by these investigators.

A useful approach for reaching people with poor reading skills, or whose main language is different from that used in the survey, is to present degrees of satisfaction in the form of icons depicting happy/sad faces. A test of this approach found no significant differences in reported satisfaction compared with standard numerical scaling, although this may have reflected a relatively small sample size in one arm of the experiment.[178]

Discussion

Survey methods

In choosing a survey method there are conflicting issues to be balanced. On average, interview methods are more costly, because of their labour intensity, than mailed or on-site self-completion surveys. The expense of interviews may to some extent be compensated for by higher response rates when compared with mailed alternatives, but there are additional biases associated with face-to-face methods that need to be borne in mind. In particular, there is evidence that, with structured interview questionnaires, particularly when they are administered on site, respondents are more likely to report fewer unfavourable perceptions (i.e. give socially acceptable responses) than when impersonal survey methods are used. Open-ended questions, on the other hand, generate more negative feedback. Qualitative methods result in an all-round fuller picture of clients' views of their healthcare service, but are generally more costly to conduct.

Although self-completion questionnaires are relatively easy to administer, and may have advantages when the performance of clinical units is to be compared, interactive methods are able to reach people who are unable to participate in self-reporting surveys and can interpret people's responses in the light of their individual circumstances and values. Patient-orientated, in-depth approaches that enable patients' perceptions of the care received to be probed in relation to treatment expectations, care experiences and health outcomes are in the minority.[184] Qualitative studies, however, provide additional valuable information that is important to a full understanding of reported satisfaction and which is not routinely available from conventional structured surveys.[141]

Where possible, the use of multiple methods of data collection provides cross-checks and improves the validity of results.[26,27,151,171,185–187] Where resources are constrained, the inclusion of open-ended questions in an otherwise structured quantitative survey instrument may give a broader perspective. The use of qualitative methods to inform questionnaire development can avoid a criticism that the survey reflects the interests and perceptions of healthcare managers or professionals.

In view of the impact that low response rates can have on findings, and the observed differences between respondents and non-respondents, it is important that survey organisers take account of these issues. There is evidence from a broader review that response rates are not reported in more than 50% of studies and that only 25% of authors discuss non-response bias.[160] Careful attention to the wording of the cover letter and follow-up procedures may help to increase responses, and incentives may be offered provided they do not introduce bias. The inclusion of a pen in a mailed satisfaction survey has been shown to increase responses, and costs.[154]

Conducting surveys on site can increase response rates but may also affect evaluation. Respondents are less likely to express dissatisfaction while in the service location than in the anonymity of their own homes, particularly when rating the people on whom they rely for care. To avoid socially acceptable responding, it is generally considered preferable if a survey is administered by an independent organisation. A Swiss study[188] investigated whether using a university letterhead (instead of that of a medical practice) could affect responses to a mailed satisfaction survey. It was found to make no difference and the response rates in both arms of the study were high (81%).

Whatever survey approach is selected, the sampling method is important. Random sampling of the target population is most likely to provide a representative group of potential respondents and is employed by many investigators. Convenience samples have been shown to under-represent certain disadvantaged and minority groups,[167] and the lack of attention to evaluations from more groups that are more challenging to recruit has been noted in another review.[14] Stratified or quota sampling may be a means of neutralising non-

response bias, but this has not been widely employed. Experimental tests of the effect of alternative sampling procedures could help to inform this discussion.

Resource considerations are likely to be an important influence on the choice of survey method. Investigators must determine whether "deluxe" approaches yield sufficiently superior information to merit the extra costs they incur. On the other hand, attempts to save money by cutting corners may be a false economy if they compromise methodological rigour.[47] The opportunity cost (or sacrifice) from devoting resources to measuring satisfaction may be the service improvements sought by users.

Further research

Some potential sources of bias in surveys were not fully investigated by studies identified by the literature search. First, the effect of timing of satisfaction surveys may be an important influence on respondents' recall and evaluation of their healthcare. Reported satisfaction may alter if it is measured some time after the healthcare encounter, rather than at the time of delivery. In competitive healthcare environments, managers are keen to detect dissatisfaction immediately, so they triage (priority screen) feedback to attempt to limit the damage created by service failures. The studies identified in this review that investigated timing issues were limited by confounding factors, and no conclusions could be drawn. This issue needs further investigation, including the possible impact of recovery on subsequent evaluations. It has been suggested that different models are required to explain satisfaction immediately after a consultation (where patient–practitioner interaction may dominate evaluations) from those used to explain satisfaction some weeks and months later (when health status and recovery may have more impact).[150] This proposition requires further investigation.

Secondly, biases associated with the interviewer's age, gender, race, accent or personality may be introduced by interactive methods, but our searches found no studies investigating this issue.

Survey design issues

The search produced a relatively small number of studies that addressed detailed design issues. The topic receiving most research attention was acquiescent response bias, but conflicting signals emerged from the results, suggesting a need for further exploration of this issue. There is limited evidence that mixing positively and negatively worded items can be confusing for some patients. Studies of the effect of referents on recorded satisfaction were confirmatory of the conventional wisdom that respondents tend to record higher satisfaction with their personal care than with their medical care in general.

Cross-cultural factors were also observed to affect evaluations. Investigators using multicultural samples should be aware of this and should carefully prepare and test their instrument accordingly. Research of a qualitative nature has the potential to help with adapting questionnaires for cultural differences.

Further research

The *ad hoc* nature of research on the design of satisfaction surveys may reflect the abundance of generic literature on questionnaire design. The particular problems of evaluation of healthcare, however, may justify further research in this area. Carefully designed studies using experimental methods have the potential to yield robust results that could advance the understanding of how consumers formulate and report their evaluations. In particular, no applications of conjoint analysis or tests of expectations-based measures of satisfaction were uncovered by the search, although these methods may offer additional insights.

Different approaches

Conjoint analysis

Conjoint analysis, which was originally developed by mathematical psychologists for use in market research, offers the potential for measuring consumers' relative preferences for different healthcare attributes.[189] It has already been used by economists to measure consumers' preferences and to establish priorities for decisions regarding transport development and the environment.[190] This technique is appealing because it has a sound theoretical basis in expected utility theory. It involves identifying factors of importance to the client group, from which a range of scenarios based on combinations of these factors can be developed. In discrete choice modelling, the purest form of conjoint analysis, respondents make discrete choices between several pairs of hypothetical scenarios, from which the relative values of different service features can be determined by statistical analysis.

Conjoint analysis offers advantages over standard approaches to measuring satisfaction that use simple scales. First, it takes account of opportunity costs (the fact that choosing one alternative implies a sacrifice in terms of opportunities forgone) by

asking respondents to make trade-offs. Secondly, it can chart the relative intensity of people's preferences for different healthcare features,[191] which is relevant in a decision-making context.[15] If the options available to respondents include a monetary sum, values can be attached to the reported preferences and then used in cost-effectiveness analyses. When relative values are compared with the resource costs of service improvements, rational decisions can be made with regard to expenditures on improvements.

Expectations-based measures

Of particular importance in healthcare evaluations is the size of the difference between consumers' expectations and their perceptions of the delivered service quality. This may be presented as the dis-confirmation paradigm. Service users' expectations may be either confirmed (if consumers perceive services are delivered as expected), or negatively/positively disconfirmed (if consumers perceive services are delivered worse/better than expected).

There are good reasons for arguing that evaluations of healthcare delivery should be based on this paradigm and that there is therefore a need to collect information about consumers' expectations as well as their perceptions of their care experiences. This can be done by using separate scales for expectations and perceptions, or by combining them into one scale,[192] for example, as shown in *Box 1*.

The development and testing of alternative approaches that measure perceived differences between expectations and experiences are required.

BOX 1 Combined scale

Item statement	Scale		
	0% ——	100% ——	200%
Information supplied by doctor was:	Much worse than expected	As expected	Much better than expected

Chapter 4

Determinants of satisfaction

Introduction

This chapter reviews the available evidence on the determinants of satisfaction. The structural framework for the review distinguished two groups of determinants: those relating to the characteristics of respondents and those relating to health service delivery features.

Three main types of individual factors were identified: expectations, health status, and socioeconomic and demographic characteristics of respondents. The articles investigating the effect of health service factors on satisfaction were first grouped according to setting: in hospital, hospital outpatient, and general (or family) practice or primary care. This was because the important care delivery factors contributing to satisfaction may vary by type of care. Cutting across this categorisation, however, two other issues were frequently addressed in the literature: evaluations of the patient–physician relationship, and of the different systems for organising and delivering care. Studies providing evidence on these two questions were therefore analysed separately.

Most studies investigated several potential influencing factors. Sociodemographic factors were included by many investigators as confounding variables in order to uncover the independent effects of service delivery features on reported satisfaction. This chapter proceeds by examining the characteristics of the corpus of determinants studies, and then by presenting and discussing the evidence about individual and health service factors.

Overview: characteristics of included studies

The literature search identified 139 articles, covering 127 data sets, which provided evidence about the determinants of satisfaction. Reported empirical evidence was gathered in a variety of settings, using a range of different methods. The majority of the articles were in specialist journals: 49% medical, 27% social science (including psychology), 16% health services (including management and quality), and 4% nursing. Summaries of these articles are presented in appendix 13, in alphabetical order of first author.

Over half (56%) of the studies identified were conducted in the USA, and a further 27% were UK based (*Table 11*). The majority of the work (56%) was published in the last decade (*Table 12*). It covered the full range of settings (*Table 13*) and was largely (70%) empirical in orientation (*Table 14*). The number of respondents varied greatly (*Table 15*), although almost all studies (93%) were observational in design (*Table 16*).

Satisfaction was measured by the authors of 126 (91%) articles using survey instruments. Among these, 58 (46%) used pre-existing instruments; the rest used instruments that were compiled in a variety of ways, for the study in question, by the investigators themselves. Satisfaction was measured by multi-dimensional approaches in 79 (63%) studies, by global measures in nine (7%), and by both in 26 (30%). A total of 148 different means of measuring satisfaction were used in these 126 quantitative studies. Indirect approaches were most common (65%), followed by direct methods (24%), probing intention to return/recommend (8%), and reports of experiences (3%). No studies established preference ratings. The remaining articles reported qualitative studies ($n = 10$) or meta-analyses ($n = 3$). Respondents were approached by a variety of methods (*Table 17*).

Expectations and satisfaction

Evidence

Thirty studies reporting 28 data sets were identified that investigated the relationship between expectations of various types (including desires, values, entitlements) prior to the healthcare encounter and satisfaction after it. All studies were observational in design, although the nature of the data collected and methods of analysis varied greatly. The main study features and findings are summarised in *Table 18* in alphabetical order of first author.

There is evidence from the USA of a positive relationship between satisfaction and expectations:

TABLE 11 *Determinants of satisfaction: studies by country*

Country	*n* (%)
USA	78 (56)
Canada	1 (1)
UK	38 (27)
Other Europe	11 (8)
Rest of world	11 (8)
Total	139 (100)

TABLE 12 *Determinants of satisfaction: studies by date of publication*

Date	*n* (%)
Pre-1980	8 (6)
1980–1985	27 (19)
1986–1990	26 (19)
1991–1995	40 (29)
1996–2001	38 (27)
Total	139 (100)

TABLE 13 *Determinants of satisfaction: studies by setting*

Setting	*n* (%)
General practice/primary care	48 (34)
In hospital	26 (19)
Hospital outpatient/ambulatory care	32 (23)
Healthcare in general	29 (21)
Mixed	4 (3)
Total	139 (100)

TABLE 14 *Determinants of satisfaction: studies by context*

Context	*n* (%)
Theoretically based	29 (21)
Empirical (academic)	98 (70)
Pragmatic (management)	12 (9)
Total	139 (100)

TABLE 15 *Determinants of satisfaction: studies by size (no. respondents)*

Size	*n* (%)
<100	18 (13)
100–499	48 (34)
500–999	23 (17)
1000–4999	37 (27)
5000–9999	7 (5)
10,000+	6 (4)
Total	139 (100)

TABLE 16 *Determinants of satisfaction: studies by study design*

Design	*n* (%)
Experimental	7 (5)
Observational	129 (93)
Other	3 (2)
Total	139 (100)

TABLE 17 *Determinants of satisfaction: studies by mode of survey administration*

Mode	*n* (%)
Telephone	16 (12)
Interview	39 (28)
Questionnaire at institution	41 (29)
Mail	29 (21)
Mixed methods	10 (7)
Other	4 (3)
Total	139 (100)

consumers with expectations of high-quality care reported higher levels of satisfaction and were more likely to return to and recommend their providers than people with lower expectations.[193,194] In the UK, however, satisfaction could not be explained entirely in terms of meeting expectations.[116,195]

In a theoretically-based investigation of social psychological variables, values and feelings of entitlement were not related to satisfaction, although expectations were. Social psychological variables accounted for a small (<10%) and variable proportion of the explained variation in satisfaction in the study, depending on the model used.[196,197] There is some support for the discrepancy model: satisfaction is highest when favourable experiences match favourable expectations and lower when negative occurrences reinforce negative expectations or contradict positive ones.[196–198] Good and bad "surprises" experienced in hospital have been observed to affect satisfaction, with bad events more significant than good ones.[199] Another study showed links between disconfirmation of expectations and perceived quality of care, and between perceived quality of care and satisfaction, but did not establish a direct connection between disconfirmation and satisfaction.[107]

Three studies uncovered a positive relationship between satisfaction reported after an encounter and previously recorded levels of satisfaction.[200–202] This relationship held even for patients consulting with a doctor who was new to them.[203] This consistency could be explained by patients' predispositions: in two other studies, respondents reporting more satisfaction with life in general, or greater confidence in the medical care system, recorded significantly higher satisfaction with their physicians than those who did not.[114,204]

When the relationship between health service utilisation and satisfaction was examined, a self-regulating system was uncovered. Satisfied patients

TABLE 18 *Summary of studies investigating the relationship between expectations and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Main findings
Abramovitz *et al.*, 1987[193]	USA In hospital	Theoretical Pragmatic Observational	767	Telephone	Expectations positively and significantly related to overall satisfaction, and intention to return/recommend
Avis *et al.*, 1997[116] Avis *et al.*, 1995[195]	UK Hospital outpatient	Theoretical Observational	89	Interview in clinic Qualitative	Expectations are not well formed and provide a limited understanding of the way patients evaluate care Satisfaction is not necessarily because expectations are met
Brody *et al.*, 1989[208]	USA Primary care	Empirical Observational	118	Questionnaire in clinic	With the exception of medications, satisfaction not related to congruence between patient desires for specific technical and non-technical (e.g. education) interventions and the interventions they perceived they received (Satisfaction related to receiving non-technical intervention)
De la Cuesta, 1997[209]	Colombia Ambulatory care	Empirical Observational	364	Interview in clinic Qualitative	Satisfaction associated with agreeing with what the doctor did and positive outcomes/feeling better
Fitzpatrick *et al.*, 1983[218]	UK Hospital outpatient	Theoretical Observational	95	Interview Questionnaire	Patients expectations hesitant and ill-formed After 1 year, improvement related to being satisfied after consultation, and not to treatments received
Froehlich and Welch, 1996[210]	USA Ambulatory care	Empirical Observational	109	Questionnaire in clinic	Meeting expectations for tests not related to satisfaction
Gottleib *et al.*, 1994[107]	USA In hospital	Theoretical Observational	232	Mail	Disconfirmation of expectations affect perceived quality of care Satisfaction is affected by perceived quality of care, but not directly by disconfirmation
Gray, 1980[202]	USA Primary care	Theoretical Observational	821	Telephone	Satisfaction with physician-related issues significantly related to prior satisfaction
Harvey *et al.*, 1999[211]	USA Ambulatory care	Empirical Observational	266	Interview in clinic Questionnaire at home	Lower satisfaction associated with high preferences for decision-making that were not met Higher satisfaction associated with a low preference for decision-making (irrespective of the amount offered) and with high decision-making preferences that were met

continued

TABLE 18 contd *Summary of studies investigating the relationship between expectations and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Main findings
Hsieh and Kagle, 1991[194]	USA Primary care	Empirical Observational	401	Mail	Less good health associated with lower expectations Satisfaction strongly and positively associated with expectations (overall, and in several dimensions) e.g. consumers with high expectations about up-to-date technology or access were most satisfied
Jackson *et al.*, 2001[150]	USA Ambulatory care	Empirical Observational	320	In clinic and mail	Satisfaction not associated with pre-visit expectations, but unmet expectations reduced satisfaction
John, 1992[200]	USA In hospital	Theoretical Observational	353	Not stated	Prior satisfaction with healthcare in general and hospital in particular affected satisfaction with current hospital stay
Joos *et al.*, 1993[215]	USA Ambulatory care	Empirical Observational	243	Questionnaire in clinic	Satisfaction correlated with proportion of desires that were met
Kenny, 1995[212]	Australia Ambulatory care	Empirical Observational	272	Interview and questionnaire in clinic	Satisfaction with doctor–patient interaction significantly related to number of requests doctor was perceived to have met
Korsch *et al.*, 1968[213]	USA Ambulatory care	Empirical Observational	800	Interview in emergency room	Failure to have expectations met for tests etc. raised dissatisfaction
Kravitz *et al.*, 1994[214]	USA Ambulatory care	Empirical Observational	304	Questionnaire in clinic	Not having expectations met increased dissatisfaction
Linder-Pelz, 1982[196] Linder-Pelz and Stewart, 1986[197]	USA Primary care	Theoretical Observational	125	Questionnaire in clinic	Social psychological variables (expectations, values, feeling of entitlement) explain <10% variation in satisfaction (values, entitlement not significant) Previous use of facilities by family, friends not related to satisfaction Some support for discrepancy model
Like and Zyzanski, 1987[216]	USA Ambulatory care	Theoretical Observational	144	Questionnaire in clinic	19% of variation in satisfaction attributed to meeting desires Strong inverse/positive relation between satisfaction and desires met/not met
Linn, 1975[204]	USA Ambulatory care	Empirical Observational	1,739	Questionnaire in clinic	Greater satisfaction with community associated with more satisfaction with healthcare
Mirowsky and Ross, 1983[205]	USA Primary care	Theoretical Observational	1,197	Interview and questionnaire	Higher satisfaction increases number of visits: more visits associated with less satisfaction and results in reduced visits Expectations may mediate this
Nelson and Larson, 1993[199]	USA In hospital	Empirical Observational	2,160	Mail	16% of respondents had good surprises and 13% had bad surprises during hospital stay Bad surprises affect satisfaction more than good surprises

continued

TABLE 18 contd *Summary of studies investigating the relationship between expectations and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Main findings
Robbins *et al.*, 1993[203]	USA Primary care	Empirical Observational	100	Questionnaire in clinic	Satisfaction of new patients with physician behaviour significantly related to previsit satisfaction
Ross *et al.*, 1981[207]	USA Ambulatory care	Theoretical Observational	376	Interview in home	Negative expectations without prior experience of prepaid practice reduce satisfaction Over time, satisfaction improves with good experiences
Sixma *et al.*, 1998[201]	Netherlands General practice	Theoretical Observational	13,014	Interview	Previous doctor–patient conflicts significantly reduced satisfaction
Swan *et al.*, 1985[198]	USA In hospital	Theoretical Observational	740	Mail	Confirmation/disconfirmation of expectations affected satisfaction more than feelings of fairness (good value for money)
Weingarten *et al.*, 1995[217]	USA Primary care	Empirical Observational	2,799	Mail and telephone	Patients receiving standard preventive care services recommended by major organisations were more satisfied
Weiss, 1988[114]	USA Primary care	Theoretical Observational	400	Interviews	Satisfaction with physician characteristics positively related to confidence in medical care in general, and satisfaction with life in general
Williams *et al.*, 1995[219]	UK Primary care	Empirical Observational	504	Questionnaire in clinic	Patients with larger number of prior expectations met reported significantly higher satisfaction Fulfilling expectations depended on effective doctor–patient communication, appropriateness of expectations, and ability of GP to meet them

were observed to visit their primary care providers more often, but higher numbers of visits were seen to result in reduced satisfaction.[205] The authors speculated that the reason underlying this relationship is the rising probability that patients' expectations will not be met as the number of visits increases. Patients may become disillusioned, and doctors may seek to deter frequent attendees. There is confirmatory evidence in another US study showing that women who made more visits to their healthcare provider were more likely to want to disenrol from their health plan.[206] On the other hand, negative expectations about a healthcare provider that are based on no prior experience were associated with low reported satisfaction, but this was reversed over time as positive experiences accumulated.[207]

Eleven studies (nine from the USA) investigated the relationship between satisfaction and the extent to which patients' preconsultation expectations, desires or preferences for treatment were met by their doctors. In most cases satisfaction was enhanced when the patients' wishes were met, or dissatisfaction arose when they were not.[150,208–217] Qualitative studies carried out in the UK, however, found that consumers' expectations were not well formed.[116,218] Dissatisfaction with a consultation may negatively affect symptom resolution later.[218]

The apparent relationship between favourable evaluations and giving patients what they want or expect creates a challenge for providers when consumers' desires or expectations are inappropriate or unrealistic. In such circumstances, fostering satisfaction will be contingent upon doctors' communication skills and the extent to which the consumer is open to reasoned argument.[219] There is a constant need to educate consumers about appropriate care, and to manage their ideals and expectations about what can realistically and practically be provided.[16,98,198,200,214]

Discussion

Satisfaction is a relative concept; it is a reflection of consumers' evaluations of the quality of care they receive, compared with a subjective standard. Measures of satisfaction, therefore, lack a metric unless they are made with reference to respondents' expectations. There is a need for more satisfaction studies to recognise the importance of expectations: only about 20% of the articles in this review incorporated expectations in some form or another.

Overall, the evidence on how expectations affect people's evaluations is patchy, superficial and in some ways contradictory. Consequently, a substantial potential research agenda can be identified. Methodological and interpretive issues arise if investigators try to take account of expectations and these difficulties may underlie a reluctance to try to capture their effect. As yet, there is little practical guidance available. The lack of methodological studies focusing on expectations has already been identified in chapter 3.

There have been few tests of the expectancy-based theories of satisfaction in the healthcare field, although there is limited support for the expectation disconfirmation and discrepancy models.[107,196,198,199] The US evidence showing that high expectations are correlated with high levels of satisfaction could be interpreted in different ways.[193,194] On one hand, consumers with high expectations may ensure these are fulfilled by choosing the providers who are able to deliver the high standards of care they desire, resulting in high satisfaction and the reinforcement of high expectations. Alternatively, the causation may be reversed. Consumers may alter their perceptions of the care they receive to fall in line with their expectations. This latter interpretation is consistent with the assimilation-contrast models, based on cognitive dissonance. These approaches reason that consumers alter their perceptions of events in the direction of expectations (assimilation) when their perceptions are similar to expectations, but when the two contrast sufficiently, they exaggerate the differences and report dissatisfaction.

Further research

Basic conceptual questions remain to be answered, including the definition of expectations, how expectations can be measured, and how consumers judge and interpret the discrepancy between what they expected from a care experience and what they received. Research is required to identify different types of expectation (ideals, desires, aspirations, entitlements, values, beliefs, standards), and to establish how consumers operationalise these different concepts when evaluating care. If, as some UK-based qualitative research has suggested, consumers' expectations (in whatever form) are uncertain or incoherent, or consumers do not critically assess the care they receive, then expressions of satisfaction are meaningless as comments on quality of care.[110,116] It is likely, however, that the extent and nature of expectations vary across socio-economic, cultural and demographic groups; such patterns require investigation. Indeed, in contrast to the UK, definable expectations have been reported by US investigators.[193,194] This may be because systemic differences have historically raised expectations

in the USA while reducing them in the UK.[220] Of relevance here is the issue of how expectations are formed.

Expectations are based on information that consumers may collect from various possible sources, including the cultural norms they are brought up with, personal experiences of the healthcare system, the reported views of family and friends, and media influences. Greater interest in and exposure to health issues (on a personal or societal level) may raise individuals' knowledge of opportunities about care and treatment standards, and cause them to form their expectations accordingly. A lack of experience and knowledge may mean low aspirations or no fixed expectations, such that satisfaction is recorded with minimal levels of care. Better informed individuals may record low satisfaction with the same standard of care. Because satisfaction is a relative concept, interpersonal attitudinal responses to given stimuli vary. Providing information about alternatives that raise expectations can result in lower reported satisfaction with no change in care standards.

Such considerations point to the importance of research that will improve understanding of how expectations are formulated, and how differences in knowledge and experience affect expectations. As part of this agenda, there is a need to investigate how providers and policy makers can affect satisfaction by conditioning expectations about the process or outcome of care. It has been suggested that doctors are the most important influence,[221] but societal care benchmarks (such as those stipulated in the Patient's Charter) may also have an effect on recorded satisfaction in consumers who are aware of the standards set. The influence of personality, health beliefs, cultural background and media activities also require investigation because no evidence in these areas was identified.

Research will need to differentiate between expectations about the various aspects of the healthcare delivery system. Evaluations of medical care in general will reflect how experience measures up to expectations in such areas as cost, access, scope of cover and choice. Evaluations of hospital care experiences or the efficacy of the patient–practitioner relationship will involve different variables, such as physical and human resources, and the interpersonal attributes of providers. The distinction made by economists between search, experience and credence goods (chapter 1) may provide a structure for this research. Common to all levels of evaluation, however, is the need for consumers to be informed about alternatives, and to be motivated to judge. Studies that describe consumer awareness and interest are required before satisfaction can be properly assessed, or the effect of influences on expectations tested.

Patient expectations about the technical aspects of care are particularly problematic areas. One frequently expressed view is that patients are unable to evaluate this owing to their lack of knowledge. This information gap, however, can be closed to some extent if patients wish to investigate alternative treatment modalities, and the necessary information is made available and accessible.

People's evaluations of their care are likely to be influenced by how it is financed. Consumers opting for a low-cost healthcare service may modify their expectations downward and express satisfaction with a lower standard of care. In this circumstance, the satisfaction they express is in part a reflection of the budgetary benefits they gain. US research on managed care has identified cost/service trade-offs (reported later in this chapter), but such issues have not been explored in the UK context.

To understand properly the meaning of consumer evaluations, an understanding is required of the nature of those expectations. Many questions concerned with the way healthcare expectations are formed and used by consumers remain unanswered.

Health status and satisfaction

Evidence

Thirty-one observational studies were identified that examined the relationship between health status and satisfaction. The majority involved large numbers of participants in varied settings. A range of methods was used by the investigators. The main features and findings of these studies are summarised in *Table 19* in alphabetical order of first author.

There is evidence that poorer physical health status,[194,201,222–227] disability,[228] low quality of life,[217] and psychological distress[229–231] are associated with lower levels of reported satisfaction. One study showed that the existence of a long-term health problem (in contrast to acute distress and pain) did not affect satisfaction in general practice,[225] although there is evidence that patients' preferences vary according to their health status.[232] Another study of satisfaction with medical care in

TABLE 19 *Summary of studies investigating the relationship between health status and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Main findings
Al Bashir and Armstrong, 1991[232]	UK General practice	Empirical Observational	760	Interview	Preferences about specific aspects of care (e.g. regular check-ups, second opinions, doctor characteristics) varied with health status of respondent
Annandale and Hunt, 1998[222]	UK Healthcare in general	Empirical Observational	985	Interview	Reporting disagreements about treatment associated with having a long-standing illness, and worrying more about own or family's health
Berkatis *et al.*, 1991[234]	USA, Canada Primary care	Empirical Observational	550	Questionnaire in clinic	Health status had no effect on satisfaction with interpersonal skills
Carmel, 1985[241]	Israel In hospital	Empirical Observational	476	Interview	Perceived improvement in health status was important prediction of satisfaction
Cleary *et al.*, 1989[238]	USA In hospital	Empirical Observational	598	Mail	Perceived health positively correlated with satisfaction
Cleary *et al.*, 1991[239]	USA In hospital	Empirical Observational	1,713	Interview	Sicker patients reported more problems Health status was strongest independent predictor of problems with care
Cleary *et al.*, 1992[237]	USA In hospital	Empirical Observational	645	Telephone	Worse health associated with lower satisfaction
Cohen, 1996[223]	UK Hospital, inpatient/ outpatient	Empirical Observational	2,569	Mail	Poorer health associated with dissatisfaction
Covinsky *et al.*, 1998[242]	USA In hospital	Empirical Observational	445	Interview	Satisfaction related to health status on discharge, not to changes in health status between admission and discharge
Esteban De la Rosa *et al.*, 1994[235]	Spain Healthcare in general	Empirical Observational	2,483	Interview	No relation between perceived health and reported satisfaction
Fitzpatrick and Hopkins, 1981[244] Fitzpatrick and Hopkins, 1983[245]	UK Hospital outpatient	Empirical Observational	95	Interview	Dissatisfaction with consultation related to longer history of problem (migraine) and associated with less symptom improvement 1 year after consultation
Fleming, 1981[229]	USA In hospital	Theoretical Observational	589	Interview	More worried individuals less satisfied with hospital care
Gray, 1980[202]	USA Primary care	Theoretical Observational	821	Telephone	Health status unrelated to satisfaction

continued

TABLE 19 contd *Summary of studies investigating the relationship between health status and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Main findings
Greenley *et al.*, 1982[230]	USA Various: primary, outpatient	Theoretical Observational	366	Interview	Psychological distress negatively associated with satisfaction
Gross *et al.*, 1998[224]	USA Primary care	Empirical Observational	2315	Questionnaire in clinic	Healthier patients more satisfied with consultation time spent with doctor
Hall *et al.*, 1990[233]	USA Healthcare in general	Empirical Observational	532	Interview	Higher satisfaction associated with better self-rated health, and physical functioning and less emotional distress, but not with physicians' ratings of health, number of diagnoses, and cognitive function
Hopton *et al.*, 1993[225]	UK General practice	Empirical Observational	1,599	Questionnaire in clinic	Higher satisfaction related to lower health on six dimensions of Nottingham Health Profile Failure of doctors to deal with psychosocial issues reduced satisfaction Existence of long-term health problem did not affect satisfaction
Hsieh and Kagle, 1991[194]	USA Primary care	Empirical Observational	650	Mail	Less good health associated with lower satisfaction, but not a strong predictor compared with expectations
Jackson *et al.*, 2001[150]	USA Ambulatory care	Empirical Observational	500	In clinic and mail	Immediately after consultation, satisfaction related to patient–doctor interaction and functioning After 2 weeks and 3 months, satisfaction depended on symptom improvement Different models are needed for different time lapses
Kane *et al.*, 1997[243]	USA In hospital	Theoretical Observational	2,116	Mail	Satisfaction 6 months after discharge positively related to both absolute health status and health status relative to baseline
Korsch *et al.*, 1968[213]	USA Ambulatory care	Empirical Observational	800	Interview	Mothers' satisfaction in emergency room not related to child's diagnosis
Krupat *et al.*, 2000[240]	USA In hospital	Empirical Observational	3,602	Interview	Healthier patients reported fewer problems with information and higher satisfaction
Linder-Pelz and Stewart, 1986[197]	USA Primary care	Theoretical Observational	155	Interview	Subjective health status significantly related only to satisfaction with getting appointment (positive) No relation with other dimensions of satisfaction: doctor conduct, convenience, general satisfaction
Linn and Greenfield, 1982[226]	USA Hospital outpatient	Empirical Observational	519	Mail	Health status was a significant independent influence on satisfaction, explaining 12% of variance Positive relationship

continued

TABLE 19 contd *Summary of studies investigating the relationship between health status and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Main findings
Patrick *et al.*, 1983[228]	UK Healthcare in general	Empirical Observational	1,000	Interview	Higher levels of disability associated with more dissatisfaction
Rogut *et al.*, 1996[227]	USA In hospital	Pragmatic Observational	3,423	Telephone	Significantly more problems reported by patients in fair/poor health than by those in better health
Sixma *et al.*, 1998[201]	Netherlands General practice	Theoretical Observational	13,014	Interview	Satisfaction significantly related to low morbidity
Soh, 1991[236]	USA Healthcare in general	Empirical Observational	1,210	Interview	Health status did not feature as significant determinant of satisfaction
Weingarten *et al.*, 1995[217]	USA Primary care	Empirical Observational	2,799	Mail Telephone	People with higher quality of life recorded higher satisfaction with healthcare
Wilson *et al.*, 1995[231]	UK General practice	Empirical Observational	893	Questionnaire in surgery	Patients reporting more psychological disturbance less satisfied with consultation Fewer dissatisfied patients in surgeries of doctors who rated psychological component of consultation more highly
Zapka *et al.*, 1995[48]	USA Healthcare in general	Pragmatic Observational	3,151	Mail	Health status associated with global measure of satisfaction People with poor health had stronger feelings (both ways) People in good health or with chronic disease more satisfied

general showed that people with poor health had stronger feelings in either direction, and that the most satisfied groups were those with good health or those suffering a chronic disease.[48] Diagnosis in the emergency room was not predictive of satisfaction.[213] One investigator shows patients' ratings of their health status to be better predictors of satisfaction than physician ratings.[233]

Three studies that reported investigation of a wide range of independent variables found health status not to be significantly related to satisfaction.[234–236] Another, smaller, study found that health status affected satisfaction with obtaining an appointment in primary care (sicker people were less satisfied) but not other aspects of satisfaction or general satisfaction.[197]

Among hospitalised patients, poorer health is generally associated with lower satisfaction and reporting more problems with care.[237–240] Perceived improvement in health has been linked to satisfaction,[241] although another investigation found satisfaction in elderly patients to be positively associated with health status on discharge, rather than with improvements in health status over the hospital stay.[242]

Changes in health status have been shown to influence reported satisfaction over longer periods. Among patients undergoing surgery, those reporting the greatest absolute or relative improvements in symptoms 6 months after discharge were the most satisfied.[243] Patients with migraine who had the longest history of illness were most dissatisfied by their consultations and experienced the least symptom improvement after 1 year.[244,245] A need has been identified to model separately the effect of health status on satisfaction during illness, and in the follow-up period.[150,246]

Discussion

The available evidence indicates that health status can affect satisfaction, and therefore suggests that accurate interpretations of comparative satisfaction data requires consideration of the illness profile of the population samples involved. For example, to the extent that sicker patients record lower satisfaction, providers that care for more serious illnesses may generate lower satisfaction scores, irrespective of the quality of care they offer.

Further research

The current state of knowledge about how health status affects satisfaction is insufficient to enable accurate adjustments to be made for case-mix effects. Further detailed research is required to identify how different types of illnesses or disabilities impact on satisfaction. As a start, such research could distinguish chronic from acute conditions. Qualitative approaches, few of which were identified in the present review, could provide insights into the mechanisms at play. Longitudinal studies may prove particularly valuable to illuminate our under-standing of how health outcomes from treatment affect reported satisfaction. Such information is important for interpreting the results of satisfaction surveys that are administered after different lapses of time from service delivery encounters.

Research in this area should also give consideration to the way in which health status is measured. Existing studies often utilise clinical indicators such as symptoms or broad patient reports about how they feel. There are now several validated health-related quality-of-life instruments that cover physical and social functioning from the patient's perspective. The use of such measures may offer a clue to the factors underlying the relationship between satisfaction and health status.

Socio-economic and demographic characteristics and satisfaction

Evidence

Sixty-one studies were identified that examined the relationship between patients' socio-economic and demographic characteristics and their reported satisfaction with healthcare. These studies were observational in design and included one meta-analysis. They focused on a range of different issues, used a variety of methods, and ranged in size from 52 respondents to over 50,000. The main features and findings of these studies are summarised in *Table 20* in alphabetical order of first author.

Gender

No firm conclusions may be drawn about the relationships between reported satisfaction and gender. Among the 39 studies that investigated this issue: women were significantly more satisfied in six (15.4%); men were significantly more satisfied in seven (17.9%); and the relationship was not significant in 26 (66.7%). Any consideration of the effect of gender on satisfaction would need to account for the different patterns of healthcare utilisation by men and women.

Age

The findings of the 58 studies that investigated the relationship between reported satisfaction and age confirmed the conventional wisdom: older

TABLE 20 *Summary of studies investigating the relationship between patients' socio-economic and demographic characteristics, and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Focus	Gender	Age	Race	Socio-economic
Al-Bashir and Armstrong, 1991[232]	UK General practice	Empirical Observational	760	Interview	People's priorities	–	Preferences vary with age	–	–
Anderson and Zimmerman, 1993[287]	USA Ambulatory care	Empirical Observational	134	Telephone	Nature of relationship with doctor	–	ns	ns	Less well educated more satisfied
Annandale and Hunt, 1998[222]	UK Healthcare in general	Empirical Observational	985	Interview	Disagreements	ns	ns	–	Non-manual more disagreements
Avis *et al.*, 1997[116]	UK Hospital outpatient	Theoretical Observational	89	Interview	Satisfaction (qualitative)	ns	–	–	–
Baker, 1996[267]	UK General practice	Empirical Observational	19,450	Questionnaire in clinic	Consultation satisfaction	Men more satisfied	Older more satisfied	–	–
Bartlett *et al.*, 1984[288]	USA Ambulatory care	Empirical Observational	63	Telephone	Interpersonal skills of physician	–	–	Black people less satisfied	Better educated less satisfied
Bertakis *et al.*, 1991[234]	USA, Canada Primary care	Empirical Observational	550	Questionnaire in clinic	Physician communication skills	Women more satisfied on emotional scale	Older more satisfied	White people more satisfied	Higher income more satisfied on inter-personal scale
Bruster *et al.*, 1994[251]	UK In hospital	Pragmatic Observational	5,150	Interview	In-hospital problems	Women more problems	Younger more problems	Non-white people more problems	Social class and income ns
Bryson, 1996[352]	UK Medical care in general	Pragmatic Observational	3,633	Interview and questionnaire	NHS	Women more satisfied	Older more satisfied	–	–
Carmel, 1985[241]	Israel In hospital	Empirical Observational	476	Interview	Satisfaction with services	–	Older more satisfied	–	–
Cleary *et al.*, 1989[238]	USA In hospital	Empirical Observational	598	Mail	In-hospital care	ns	ns	–	–
Cleary *et al.*, 1991[239]	USA In hospital	Empirical Observational	6,455	Telephone	Problems	–	Older less problems	Non-white people more problems	Poorer more problems
Cleary *et al.*, 1992[237]	USA In hospital	Empirical Objective	6,455	Telephone	Problems and satisfaction	–	Older less satisfied, more problems	ns	Income ns

continued

TABLE 20 contd *Summary of studies investigating the relationship between patients' socio-economic and demographic characteristics, and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Focus	Gender	Age	Race	Socio-economic
Cohen, 1996[223]	UK Hospital inpatient/ outpatient	Empirical Observational	2,569	Mail	Dissatisfaction	Women more dissatisfied (marginal)	Older less dissatisfied	–	Manual groups less satisfied
Comstock *et al.*, 1982[279]	USA Hospital outpatient	Empirical Observational	150	Questionnaire in clinic	Physician inter-personal skills	ns	Older more satisfied	ns	–
Coyle *et al.*, 1992[263]	UK Primary care	Empirical Observational	2,783	Mail	Satisfaction with services	ns	Older more satisfied	–	Less well educated more satisfied
Department of Health, 1999[264]	UK General practice	Pragmatic Observational	50,000	Mail	Patient experiences	ns	<45 years less satisfied	Ethnic minorities less satisfied	Social class ns
DiMatteo and Hays, 1980[290]	USA Family practice	Empirical Observational	329	Questionnaire in clinic	Physician services	–	Older more satisfied	–	Technical skill important to higher social groups
Eguskiza *et al.*, 1995[247]	Spain Primary care	Empirical Observational	420	Interview	Physician inter-personal skills	–	Older more satisfied	–	Less well educated more satisfied
Esteban de la Rosa *et al.*, 1994[235]	Spain Healthcare in general	Empirical Observational	2,483	Interview	Satisfaction	ns	Young less satisfied	–	Better educated less satisfied
Etter and Perneger, 1997[250]	Switzerland Ambulatory care	Pragmatic Observational (Natural experiment)	720	Mail	Satisfaction: various aspects	ns	ns	Non-Swiss less satisfied	–
Fitzpatrick and Hopkins, 1981[291]	UK Hospital outpatient	Empirical Observational	95	Interview	Consultation	ns	ns	–	Education, social class ns
Fleming, 1981[229]	USA In hospital	Theoretical Observational	589	Interview	Satisfaction: various aspects	–	Older less critical	–	–
Fox and Storms, 1981[297]	USA Healthcare in general	Theoretical Observational	2,582	Telephone	Satisfaction	Women more satisfied	Older more satisfied	ns	Lower income, less well educated ns
Greenley *et al.*, 1982[230]	USA Primary care Hospital outpatient	Theoretical Observational	366	Interview	Satisfaction: physician and service	ns	Older more satisfied	White people more satisfied	Income ns Less well educated more satisfied

continued

TABLE 20 contd *Summary of studies investigating the relationship between patients' socio-economic and demographic characteristics, and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Focus	Gender	Age	Race	Socio-economic
Gross *et al.*, 1998[224]	USA Primary care	Empirical Observational	2,315	Questionnaire in clinic	Time spent with physician	ns	Older more satisfied	White people more satisfied	Education ns
Hall and Dornan, 1990[316]	International Healthcare in general	Empirical Review	110	Studies	Satisfaction	ns	Older more satisfied	ns	More education less satisfied Higher social class, income ns
Halpin Schauffler *et al.*, 1996[270]	USA Primary care	Empirical Observational	5,432	Mail	Health education by doctor	–	ns	–	Education ns
Harvey *et al.*, 1999[211]	USA Ambulatory care	Empirical Observational	266	Interview and questionnaire	General satisfaction	–	Older more satisfied	–	Education ns
Hjortdahl and Laerum, 1992[280]	Norway General practice	Empirical Observational	3,044	Mail	Satisfaction with doctor and overall	ns	ns	–	–
Hopton *et al.*, 1993[225]	UK General practice	Empirical Observational	1,599	Questionnaire in clinic	Consultation	ns	Younger more dissatisfied	White people more satisfied	Social class ns
Hsieh and Kagle, 1991[194]	USA Primary care	Empirical Observational	401	Mail	Satisfaction (6 dimensions)	Women more satisfied	Older and younger more satisfied	Non-white people less satisfied (marginal)	–
Hulka *et al.*, 1971[302]	USA Healthcare in general	Empirical Observational	254	Interview	Satisfaction with doctor and services	ns	ns	ns	Better educated more satisfied
Hulka *et al.*, 1975[303]	USA Healthcare in general	Empirical Observational	1,713	Interview	Satisfaction	Women more satisfied	Young more dissatisfied	White people more satisfied	Social class ns
Jackson *et al.*, 2001[150]	USA Ambulatory care	Empirical Observational	500	In clinic and mail	Satisfaction	–	Older more satisfied	–	–
Kane *et al.*, 1997[243]	USA In hospital	Theoretical Observational	2,116	Mail	Satisfaction with hospital and doctor	–	Younger more satisfied	ns	Better educated more satisfied Income ns
Kasteler *et al.*, 1976[123]	USA Healthcare in general	Empirical Observational	576	Interview	"Doctor shopping"	–	–	–	More high-income people "doctor shop"

continued

TABLE 20 contd *Summary of studies investigating the relationship between patients' socio-economic and demographic characteristics, and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Focus	Gender	Age	Race	Socio-economic
Kerr *et al.*, 1998[206]	USA Healthcare in general	Empirical Observational	17,196	Telephone	Desire to disenrol	Women more likely to want to leave	ns	ns	Higher income/lower education more/less likely to want to leave
Khayat and Salter, 1994[71]	UK General practice	Pragmatic Observational	2,173	Mail	Satisfaction	Women less satisfied	Younger less satisfied	–	Home owners, higher social classes less satisfied
Korsch *et al.*, 1968[213]	USA Ambulatory care	Empirical Observational	800	Interview	Patient–doctor interaction	–	–	–	Social class, education ns
Krupat *et al.*, 2000[298]	USA Primary care	Empirical Observational	453	Mail	Patient centredness	ns	ns	ns	Education ns
Krupat *et al.*, 2000[240]	USA In hospital	Empirical Observational	3,602	Interview	Problem	–	Older less problems	–	–
Like and Zyzanski, 1987[216]	USA Ambulatory care	Theoretical Observational	144	Questionnaire in clinic	Aspects of clinical encounter	Women more satisfied	–	ns	Education, income ns
Linder-Pelz and Stewart, 1986[197]	USA Ambulatory care	Theoretical Observational	155	Questionnaire in clinic	Satisfaction	ns	Older more satisfied	ns	Better educated more satisfied
Linn, 1975[204]	USA Ambulatory care	Empirical Observational	1,739	Questionnaire in clinic	Healthcare encounter	ns	Older more satisfied	Black and Hispanic people more satisfied	Less well educated more satisfied
Linn and Greenfield, 1982[226]	USA Hospital outpatient	Empirical Observational	519	Mail	Satisfaction	ns	Older more satisfied	Non-white people more satisfied	Education ns
Malbon *et al.*, 1999[265]	UK General practice	Empirical Observational	1,139	Telephone	Satisfaction	–	Older more satisfied	–	Social class ns
Nelson and Larson, 1993[199]	USA In hospital	Empirical Observational	2,160	Mail	Good and bad surprises	–	Older more satisfied	–	Better educated less satisfied
Patrick *et al.*, 1983[228]	UK Healthcare in general	Empirical Observational	1,000	Interview	Satisfaction	Women more dissatisfied	Older less dissatisfied	–	Social class ns

continued

TABLE 20 contd *Summary of studies investigating the relationship between patients' socio-economic and demographic characteristics, and satisfaction*

Reference	Country Setting	Context Design	No. responses	Method	Focus	Gender	Age	Race	Socio-economic
Pilpel, 1996[249]	Israel In hospital	Empirical Observational	148	Interview	Satisfaction	ns	Older less satisfied	–	Better educated less satisfied
Rogut *et al.*, 1996[227]	USA In hospital	Pragmatic Observational	3,423	Telephone	Problems with inter-personal care	–	Younger more problems	Minorities (not black, Hispanic) more problems	Low earners more problems
Segest, 1988[248]	Denmark Healthcare in general	Empirical Observational	2,320	Interview	Dissatisfaction	–	Older less dissatisfied	–	Better educated less dissatisfied
Sixma *et al.*, 1998[201]	Netherlands General practice	Theoretical Observational	13,014	Interview	Satisfaction	ns	Older more satisfied	–	–
Soh, 1991[236]	USA Healthcare in general	Empirical Observational	1,210	Interview	Satisfaction	ns	ns	ns	Better educated more satisfied
Stiles *et al.*, 1979[295]	USA Primary care	Empirical Observational	52	Questionnaire in clinic	Physician interaction	ns	ns	ns	Education ns
Thomas *et al.*, 1996[155]	UK In hospital	Empirical Observational	1,559	Mail	Nursing experiences	–	Older more satisfied	–	Education ns
Treadway, 1983[281]	UK General practice	Empirical Observational	81	Interview	Consultation	ns	Older more satisfied	–	Education social class ns
Weiss, 1988[114]	USA Primary care	Theoretical Observational	400	Interviews	Physician characteristics	ns	ns	ns	Education, income ns
Williams and Calnan, 1991[269]	UK General practice	Empirical Observational	357	Mail	Aspects of general practice	–	Older more satisfied	–	Social class, education ns
Wilson *et al.*, 1995[231]	UK Primary care	Empirical Observational	893	Questionnaire in clinic	Interpersonal aspects of consultation	Men more satisfied	Older more satisfied	–	–
Zapka *et al.*, 1995[48]	USA Healthcare in general	Pragmatic Observational	3,151	Mail	Overall satisfaction	ns	Older more satisfied	Minorities less satisfied	Income ns Better educated less satisfied

ns, not significant; –, variable not investigated

respondents were significantly more satisfied in 41 (70.7%); younger respondents were significantly more satis-fied in four (6.9%); and the relationship was not significant in 13 (22.4%).

Various explanations are advanced for the reason why older people generally report higher satisfaction, and research is required to investigate these further. It may reflect generational or life-cycle effects: that older people are more stoical and accepting than the young, or that they engender more respect and care from their providers. Alternatively, it may be a cohort effect and that they have lower expectations based on prior experiences when standards were lower. A study of users' preferences showed significant differences between younger and older groups.[232]

There are particular circumstances that may explain findings that do not support the trend. In one study, satisfaction was polarised, being highest in the very young age group as well as among the oldest.[194] Three other studies all focused on hospital inpatients. One showed that younger surgery patients were more satisfied 6 months after discharge than those who were older. This study also showed that health status correlated with satisfaction.[243] In another study, older patients reported more sources of dissatisfaction with their hospital stay, but this was exclusively due to their extensive communication problems. In all other areas the younger patients complained more.[237] The final study concentrated heavily on interpersonal aspects of care, which may have resulted in the lower recorded satisfaction among elderly patients.[249]

Racial, ethnic and minority groups

A total of 29 studies were carried out that investigated the relationship between race or ethnicity and satisfaction. This was found to be significant in 15 cases. In 11 (73.3%) of these studies, black and other visible minority groups were found to be less satisfied. In two studies of chronically sick outpatients, non-white people (terminology used by article) were more satisfied.[204,226] One study showed significant differences between various minority groups.[227] In the last investigation, set in Switzerland, non-Swiss ambulatory patients were found to be less satisfied with the care they received than the indigenous population.[250]

Socio-economic status

Several indicators of socio-economic status were used across the studies. In general, the findings about the relationships between socio-economic indicators were inconsistent and inconclusive.

The effect of level of education on satisfaction was considered by 31 investigators. Education was not found to have a significant influence on satisfaction in 15 (48.3%) studies. Higher levels of education were associated with significantly less satisfaction in 11 (35.4%) studies, and significantly more satisfaction in five (16.2%).

The differences between manual and non-manual workers or between social classes was investigated in 15 studies. No significant differences in satisfaction were observed by 12 investigators. Of the other three, non-manual groups were significantly more dissatisfied in two[71,222] and manual groups were significantly less satisfied in the other.[223]

The effect of income on reported satisfaction was explored in 14 studies. It was not significant in nine cases. Higher income has been associated with greater satisfaction with doctors' interpersonal communication skills[234] and people with lower incomes have been observed to report more problems with in-hospital stays.[227,239] In two investigations, set in the USA, higher income groups were more likely to want to change their health plan.[123,206]

Discussion

With the exception of age, evidence on the effect of socio-economic and demographic factors on satisfaction is equivocal. A high proportion of investigators found these factors to be non-significant independent influences on satisfaction. However, investigators should be aware of the potential significance of background variables such as these on satisfaction outcomes, and routinely incorporate them as covariates in their study designs. An understanding of the characteristics of the study sample enables subgroup analyses and informs the targeting of follow-up actions.

Further research

About one half of the studies identified in this group were specifically orientated towards investigating the relationship between socio-economic and demographic features and satisfaction. In the others, these variables were included as confounding factors and analysed in an essentially empirical manner. Further research of a more theoretical nature may be warranted to probe how and why socio-economic and demographic factors may influence satisfaction in a range of conditions and settings. Such investigations may lend themselves to qualitative approaches, which were not well represented in the present sample.

A particular area requiring investigation is the way in which socio-economic and demographic factors influence expectations. Some conceptual models of satisfaction position expectations as intervening variables. They acknowledge their significance as determinants of reported satisfaction, but argue that expectations are influenced by the social, cultural, economic and demographic characteristics of the respondents. Rigorous analyses of the relationship between background variables, expectations and satisfaction are required. These need a firm theoretical basis and sound testing, using both qualitative and quantitative approaches.

Health service factors and satisfaction

In-hospital satisfaction

Eighteen studies investigated satisfaction with in-hospital care. The main features and findings of these are summarised in *Table 21* in alphabetical order of first author. The authors of 13 of these studies sought to identify the most important dimensions of hospital care contributing to satisfaction.[72,157,193,199,238,239,241,249,251–255] They illustrate the importance to patients of the care afforded by human resources, particularly nurses, and of interpersonal communication. In-hospital satisfaction in the USA has been reported to be lower in teaching hospitals and government-run hospitals than in private hospitals.[229] Patient satisfaction has been shown to be adversely affected by nursing strain and exhaustion.[256]

Satisfaction was used as a focal outcome measure in three quasi-experimental studies that evaluated different methods of organising nursing care from the patient's perspective.[257–259] Their findings reinforce the importance of personal care.

Hospital outpatient care

Two qualitative[116,209] and one quantitative[260] study explored this issue. They are summarised in *Table 22* and suggest that professional standards and interpersonal relationships are of prime importance to patients.

Primary care

This group of 19 observational studies, which are summarised in *Table 23* in alphabetical order of first author, includes ten investigations set in British general practice. One is an international comparison[261] and the remainder are set in the USA ($n = 7$) and Australia ($n = 1$). Although there are some differences in the way that healthcare in general, and primary care in particular, are organised in these countries, some similarities can be observed in consumers' preferences. General accessibility issues are important; longer wait times for appointments or in clinics give rise to dissatisfaction universally.[48,202,225,262–266] In the UK this may be equated with larger list sizes.[267,268] There is evidence that patient–doctor communication and information are as important determinants of satisfaction as access and availability.[208,261,266,269] Restricted access to specialists was significantly related to dissatisfaction in the USA.[206] Patients receiving preventive services or health promotion advice were more satisfied than those who did not.[208,217,270,271] Evidence from the UK showed that doctors and patients prefer longer consultations, and that extra time means that more can be achieved by way of resolving issues and delivering health promotion messages.[272,273]

The patient–practitioner relationship

Eight data sets, four of which are UK-based, confirm the high importance that consumers attach to interaction factors and the quality of the patient–practitioner relationship in general when they are evaluating care.[100,124,223,254,261,263,269,274,275] This evidence is summarised in *Table 24* in alphabetical order of first author.

A total of 42 studies, 26 of which were conducted in the USA, and seven in the UK, investigated the characteristics of patient–doctor interactions in order to identify the features most closely associated with satisfaction. The main findings are summarised in *Table 25* in alphabetical order of first author. A range of methods and settings are represented.

Three experimental studies investigated the effect of training doctors in communication or psychosocial skills[276,277] and of encouraging patients to participate more actively in consultations.[278] Although doctor training had a significant positive effect on satisfaction, a leaflet provided to patients did not, possibly because such an approach is insufficiently proactive and personal.[278]

There is no evidence that the gender or age of physicians had a consistent effect on satisfaction. Gender was not significant in eight studies.[197,212,224,234,267,279–281] In one study greater satisfaction with female doctors amongst female patients than amongst male patients was reported.[279] Another showed trained female residents to be better on disclosure and empathy than their male counterparts.[277] There is contradictory evidence on the effect of physician

TABLE 21 *Summary of studies investigating the determinants of in-hospital satisfaction*

Reference	Country	Context Design	No. responses	Data collection	Factors contributing to satisfaction
Abramovitz *et al.*, 1987[193]	USA	Pragmatic Observational	767	Telephone	Nurse explanations were most important determinants of satisfaction
Bruster *et al.*, 1994[251]	UK	Pragmatic Observational	5150	Questionnaire after discharge	Satisfaction ratings were high, but when patients were asked about 36 aspects of in-hospital experience, 56% reported problems with communication/information, 33% had suffered pain, 70% were dissatisfied with discharge planning
Carmel, 1985[241]	Israel	Empirical Observational	476	Interview	Satisfaction with physicians was a better predictor of overall satisfaction than satisfaction with nurses
Cleary *et al.*, 1989[238]	USA	Empirical Observational	598	Mail	Satisfaction with physicians and nurses predicted overall satisfaction better than food and room attributes
Cleary *et al.*, 1991[239]	USA	Empirical Observational	6455	Telephone	Only 9% of variance in problems reported by patients explained by their sociodemographic factors, health status and insurance cover, suggesting that institutional factors may be important
Fleming, 1981[229]	USA	Theoretical Observational	589	Household interview	Satisfaction with hospital was inversely related to teaching status Private hospitals generated more satisfaction than those that were government owned Longer length of stay and regular source of care increased satisfaction
Hardy *et al.*, 1996[72]	UK	Theoretical Observational	1183	Questionnaire in hospital	3 components of satisfaction from 100 items: 1) Process of care by doctors and nurses, attentiveness, hospital environment, cleanliness, patient participation, socialization 2) Health improvement 3) Psychological well-being
Jakobsson *et al.*, 1994[257]	Sweden	Pragmatic Observational (Natural experiment)	242	Mail	Satisfaction with information, decision-making, ward facilities, treatment, and a large number of aspects of care all improved significantly when nursing care was reorganised around the team nursing concept
Koerner *et al.*, 1985[258]	USA	Theoretical Observational (Natural experiment)	280	Questionnaire in hospital	Compared satisfaction in a collaborative practice unit (primary nursing) and a team nursing unit No differences in environment or tests, length of stay, complications, deaths, but collaborative practice unit patients reported significantly higher ratings for interaction with providers and communication
Leiter *et al.*, 1998[256]	Canada	Theoretical Observational	605	Questionnaire in hospital	Significantly lower patient satisfaction in units where nurses reported strain, exhaustion, desire to quit

continued

TABLE 21 contd *Summary of studies investigating the determinants of in-hospital satisfaction*

Reference	Country	Context Design	No. responses	Data collection	Factors contributing to satisfaction
Miller Bader, 1988[253]	USA	Empirical Observational	50	Questionnaire in hospital	Of 15 nursing care behaviours reflected in satisfaction, 12 were affective (nurse spends time, explains, is friendly, sensitive, attentive etc.) Remaining 3 related to technical/professional aspects of care
Nelson and Larson, 1993[199]	USA	Empirical Observational	2160	Mail	Surprises, especially bad ones, affected satisfaction Good surprises: overall quality of care, perks/extras, staff attitudes Bad surprises: staff attitudes, value/cost, restfulness, room-mate, treatment of family/friends
Pilpel, 1996[249]	Israel	Empirical Observational	148	Interview in hospital	Correlations with global satisfaction: nurses' conduct (0.64), doctors' conduct (0.62), physical surroundings (0.46)
Taylor *et al.*, 1991[252]	USA	Empirical Observational	70	Telephone	Patients emphasised psychosocial factors as most important determinants of high-quality nursing care
Thomas *et al.*, 1996[259]	UK	Empirical Observational (Natural experiment)	1572	Questionnaire in hospital	Compared satisfaction between wards organised by functional (task orientated) nursing, team nursing, primary nursing: no significant differences Satisfaction significantly related to knowing own nurse in charge of care
Walker and Restuccia, 1984[157]	USA	Empirical Observational	527	Mail Telephone	Nursing care more closely related to overall satisfaction than other aspects of hospital stay
Williams and Calnan, 1991[254]	UK	Empirical Observational	454	Mail questionnaire sent to general population	Satisfaction with hospital: 83% Only significant influence on overall satisfaction was confidence in doctor Main areas of dissatisfaction (mentioned by 73%): access, hospital organisation, facilities, communication of information
Woodside *et al.*, 1989[255]	USA	Theoretical Observational	392	Telephone	Nursing care most important determinant of overall satisfaction with hospital stay

TABLE 22 *Summary of studies investigating the determinants of satisfaction with hospital outpatient care*

Reference	Country	Context Design	No. responses	Data collection	Method of analysis	Factors contributing to satisfaction
Avis *et al.*, 1997[116]	UK	Theoretical Observational	89	Interview	Qualitative	Humanity: friendliness, dignity, privacy Orderly clinic organisation Information Continuity of care
Bishop *et al.*, 1991[260]	UK	Empirical Observational	143	Questionnaire in clinic	Quantitative	Fixed appointment times To see same doctor on successive visits Formal dress for staff Chaperone for examinations
De la Cuesta, 1997[209]	Colombia	Empirical Observational	364	Interview	Qualitative	Good relationship, including information, personal treatment, confidence in doctor Expectations met Mediating factor: trust

TABLE 23 *Summary of studies investigating the determinants of satisfaction with primary care*

Reference	Country	Context Design	No. responses	Data collection	Factors contributing to satisfaction
Baker and Streatfield, 1995[262]	UK	Empirical Observational	16,015	Questionnaire in clinic	Personal list systems associated with better access and continuity and higher satisfaction Larger list sizes associated with less doctor availability, worse continuity of care, less good premises and lower satisfaction Training practices associated with less doctor availability and continuity and lower satisfaction
Baker, 1996[267]	UK	Empirical Observational	9,450	Questionnaire in clinic	Characteristics of practices associated with falls in satisfaction were: list size, absence of personal list system, training practice, number of appointments booked per hour
Brody *et al.*, 1989[208]	USA	Empirical Observational	118	Questionnaire in clinic	Patients who indicated that they received non-technical interventions (education, stress counselling, negotiation) were significantly more satisfied than those who did not Technical interventions not related to satisfaction
Calnan *et al.*, 1994[261]	England, Greece, USSR, Yugoslavia	Empirical Observational	2,489	Mail Interview	Correlates of general satisfaction were more to do with the patient–doctor relationship and professional skills, and less to do with access and availability

continued

TABLE 23 contd *Summary of studies investigating the determinants of satisfaction with primary care*

Reference	Country	Context Design	No. responses	Data collection	Factors contributing to satisfaction
Campbell, 1994[268]	UK (Scotland)	Empirical Observational	5,310	Questionnaire in clinic	Larger patient list size correlated with lower satisfaction Dissatisfaction correlated with less availability of appointments Self-referral to hospital emergency department related to distance not GP appointment availability
Coyle *et al.*, 1992[263]	UK	Empirical Observational (Natural experiment)	2,783	Mail	High overall levels of satisfaction, but dissatisfaction with waiting times, lack of advice on health promotion, opportunity to discuss personal problems
Department of Health, 1999[264]	UK	Pragmatic Observational	50,000	Mail	Highest level of discontent arose from: problems in obtaining an appointment, waiting
Gray, 1980[202]	USA	Theoretical Observational	821	Telephone	Satisfaction with primary care services associated with having a personal physician and availability (waiting times: for appointments, in clinic, out of hours)
Halpin Schauffler *et al.*, 1996[270]	USA	Empirical Observational	5,432	Mail	Patients receiving health promotion information were more satisfied
Hopton *et al.*, 1993[225]	UK	Empirical Observational	1,599	Questionnaire in clinic	Most dissatisfaction arose from: waiting, doctor being hurried, issues not discussed or disregarded
Howie *et al.*, 1991[272]	UK	Empirical Observational	21,707	Questionnaire in clinic	Doctors and patients would prefer longer consultations, which could include more health promotion and deal with more health problems
Kerr *et al.*, 1998[206]	USA	Pragmatic Observational	17,196	Telephone	Desire to disenrol from health plan associated with quality of care, convenience, denied access to specialty care
Kottke *et al.*, 1997[271]	USA	Pragmatic Observational	6,830	Mail	Weak positive association between general satisfaction with healthcare and being advised by physicians to make use of preventive services
Malbon *et al.*, 1999[265]	UK	Empirical Observational	1,139	Telephone	High level of satisfaction, but >20% had considered making a complaint Most dissatisfaction was with waiting
Morrell *et al.*, 1986[273]	UK	Empirical Observational	788	Questionnaire in clinic	Shorter consultations associated with less blood pressure measurement, less attention to psychosocial problems, and lower satisfaction
Steven and Douglas, 1988[266]	Australia	Empirical Observational	2,822	Questionnaire in clinic	Most dissatisfaction related to accessibility (opening hours) and communication
Weingarten *et al.*, 1995[217]	USA	Empirical Observational	2,799	Mail Telephone	Patients receiving any preventive service were more satisfied then those who did not

continued

TABLE 23 contd *Summary of studies investigating the determinants of satisfaction with primary care*

Reference	Country	Context Design	No. responses	Data collection	Factors contributing to satisfaction
Williams and Calnan, 1991[269]	UK	Empirical Observational	357	Mail	Communication, information, nature and quality of doctor–patient relationship, GP's professional skills, more strongly (positively) associated with overall satisfaction than access and availability
Zapka *et al.*, 1995[48]	USA	Pragmatic Observational	3,151	Mail	Satisfaction related to indicators of system performance, especially access, coordination, continuity and communication

TABLE 24 *Summary of studies investigating the importance of the patient–practitioner relationship for satisfaction in general*

Reference	Country Setting	Context Design	No. responses	Data collection	Main findings
Calnan *et al.*, 1994[261]	England, Greece, Russia, Yugoslavia Primary care	Empirical Observational	2489	Mail/interview	Correlates of general satisfaction were more to do with patient–doctor relationship and professional skills and less to do with access, availability and type of service
Cohen, 1996[223]	UK (Scotland) Hospital inpatient and outpatient	Empirical Observational	2569	Mail	Main sources of dissatisfaction with care were a lack of opportunity to ask questions, choices not explained, inadequate time with doctor, doctor's attitude
Coyle *et al.*, 1992[263]	UK General practice	Empirical Observational (Natural experiment)	2783	Mail	Overall satisfaction related to doctor being understanding, GP medical skills, out of hours, preventive care Dissatisfaction associated with not being able to discuss personal problems
Howie *et al.*, 1998[100]	UK General practice	Theoretical Observational	613	Questionnaire in clinic	Author's concept of patient enablement related to but different from satisfaction with consultation
Roghmann *et al.*, 1979[124]	USA Healthcare in general	Empirical Observational	311	Interview	Relationships varied strongly with provider
Snell, 1996[274]	USA Healthcare in general	Pragmatic Observational	40	Focus group	Primary issue that patients use for judging medical care is interaction with the physician: especially enough time, and that the physician listens and explains

continued

TABLE 24 contd *Summary of studies investigating the importance of the patient–practitioner relationship for satisfaction in general*

Reference	Country Setting	Context Design	No. responses	Data collection	Main findings
Ware *et al.*, 1975[275]	USA Healthcare in general	Empirical Observational	903	Interview	Physician behaviour (competence, humaneness, caring) identified as an important dimension of satisfaction
Williams and Calnan, 1991[254,269]	UK General practice/ hospital	Empirical Observational	454	Mail	Convergence across hospital and GP settings of importance for satisfaction of professional competence and nature of patient–professional relationship, rather than access, availability and facilities
	UK General practice	Empirical Observational	357	Mail	77% of variance in general satisfaction with GP explained by information giving, medical and personal skills, confidence in doctor Only significant influence on general satisfaction with hospital was confidence in doctor

TABLE 25 *Summary of studies investigating the importance of features of the patient–practitioner relationship for satisfaction*

Reference	Country Setting	Context Design	No. respondents	Physician characteristics	Consultation time	General interpersonal skills	Affective behaviour	Information gathering	Information giving	Health promotion	Physician control
Anderson and Zimmerman, 1993[287]	USA Ambulatory care	Empirical Observational	134	–	ns	–	–	–	–	–	–
Baker, 1996[267]	UK General practice	Empirical Observational	9,450	Age: –ve Gender: ns	–	–	–	–	–	–	–
Bartlett *et al.*, 1984[288]	USA Ambulatory care	Empirical Observational	63	–	–	+ve	–	–	Teaching statement –ve	–	–
Ben-Sira, 1990[294]	Israel Healthcare in general	Theoretical Observational	1,026	–	–	–	Affective behaviour generates trust +ve	–	–	–	–

continued

TABLE 25 contd *Summary of studies investigating the importance of features of the patient–practitioner relationship for satisfaction*

Reference	Country Setting	Context Design	No. respondents	Physician characteristics	Consultation time	General interpersonal skills	Affective behaviour	Information gathering	Information giving	Health promotion	Physician control
Bertakis *et al.*, 1991[234]	USA, Canada Primary care	Empirical Observational	550	Gender: ns	–	–	Interest in psychosocial issues, friendliness +ve	–	–	–	Doctor talks a lot, controlling behaviour –ve
Brody *et al.*, 1989[208]	USA Primary care	Empirical Observational	118	–	–	–	–	–	Non-technical intervention (education) +ve	–	–
Buller and Buller, 1987[282]	USA Ambulatory care	Theoretical Observational	219	Age: +ve Satisfaction varied with specialty	No effect	+ve	Affective physicians +ve	–	–	–	Expression of control –ve
Comstock *et al.*, 1982[279]	USA Hospital outpatient	Empirical Observational	150	Gender, appearance: ns Female doctor preferred more by female patients than by male patients	Weak correlation	Verbal skills +ve, non-verbal behaviour ns	Physician courtesy, empathy +ve	Physician listens +ve	+ve	–	–
De la Cuesta, 1997[209]	Colombia Ambulatory care	Empirical Observational	364	–	–	Alertness/on top of problem +ve	Personal treatment, trust +ve	–	+ve	–	–
DiMatteo *et al.*, 1998[289]	USA Ambulatory and in hospital	Empirical Observational	327	–	–	Non-verbal communication +ve	–	–	–	–	–
DiMatteo and Hays, 1980[290]	USA Family practice	Empirical Observational	327	–	–	+ve	+ve	–	–	–	–
Evans *et al.*, 1987[276]	Australia General practice	Empirical Experimental	406	–	–	Training in communication skills +ve	–	–	–	–	–

continued

TABLE 25 contd *Summary of studies investigating the importance of features of the patient–practitioner relationship for satisfaction*

Reference	Country Setting	Context Design	No. respondents	Physician characteristics	Consultation time	General interpersonal skills	Affective behaviour	Information gathering	Information giving	Health promotion	Physician control
Fitzpatrick *et al.*, 1983[218] Fitzpatrick and Hopkins, 1981[244,291]	UK Outpatient	Empirical Observational	95	–	–	Superficial –ve	–	–	–	–	–
Fox and Storms, 1981[297]	USA Healthcare in general	Theoretical Observational	2,582	–	–	–	–	–	–	Preventive care visits +ve	–
Greene *et al.*, 1994[284]	USA Hospital outpatient	Empirical Observational	100	–	+ve	–	Shared laughter, supportive +ve	Physician questions, patient gives information +ve	–	–	–
Gross *et al.*, 1998[224]	USA Primary care	Empirical Observational	2,315	ns	+ve	–	Doctor chatting +ve	–	Doctor evaluation and feedback +ve	Nutrition advice +ve	–
Hall *et al.*, 1988[130]	International Healthcare in general	Empirical Review	(41 data sets)	–	–	+ve including non-verbal behaviour	Social conversation +ve	–	+ve	–	Partnership +ve
Halpin Schauffler *et al.*, 1996[270]	USA Primary care	Empirical Observational	5,432	–	–	–	–	–	–	Health education +ve	–
Harvey *et al.*, 1999[211]	USA Ambulatory care	Empirical Observational	266	–	–	–	–	–	–	–	More decision-making opportunities +ve
Hjortdahl and Laerum, 1992[280]	Norway General practice	Empirical Observational	3,044	Age, gender: ns	–	Personal doctor–patient relationship +ve	–	–	–	–	–
Holloway *et al.*, 1989[292]	USA General practice	Empirical Observational	1,142	–	–	Personalised approach including promptness and follow-up +ve	Sensitivity to patient's needs and concerns +ve		–	–	– –

continued

TABLE 25 contd *Summary of studies investigating the importance of features of the patient–practitioner relationship for satisfaction*

Reference	Country Setting	Context Design	No. respondents	Physician characteristics	Consultation time	General interpersonal skills	Affective behaviour	Information gathering	Information giving	Health promotion	Physician control
Howie *et al.*, 1991[272]	UK General practice	Empirical Observational	21,707	–	+ve	–	–	–	–	–	–
Jackson *et al.*, 2001[150]	USA Ambulatory care	Empirical Observational	500	–	–	+ve	–	–	+ve	–	–
Kenny, 1995[212]	Australia Ambulatory care	Empirical Observational	272	Gender of doctor: ns	–	–	Warmth and respect +ve	–	Amount of information given +ve	–	–
Kent-Smith *et al.*, 1981[285]	USA Primary care	Empirical Observational	29	–	+ve	–	–	Chart review time –ve	Information-giving +ve	Prevention discussions +ve	–
Korsch *et al.*, 1968[213]	USA Ambulatory care	Empirical Observational	800	–	–	–	Friendly manner +ve	–	+ve	–	–
Krupat *et al.*, 2000[240]	USA In hospital	Empirical Observational	3,602	–	–	–	–	–	+ve	–	–
Krupat *et al.*, 2000[298]	USA Primary care	Empirical Observational	453	–	–	–	–	–	–	–	Patient centred +ve
Kvamme and Hjortdahl, 1997[286]	Norway Primary care	Empirical Observational	431	–	Consultation time ranked most important	–	–	Also important	Also important	–	–
Linder-Pelz and Stewart, 1986[197]	USA Ambulatory care	Theoretical Observational	155	Doctor's age, gender: ns	–	–	–	–	–	–	–
McCann and Weinman, 1996[278]	UK General practice	Empirical Experimental	120	–	–	–	–	–	–	–	More participation ns

continued

TABLE 25 contd *Summary of studies investigating the importance of features of the patient–practitioner relationship for satisfaction*

Reference	Country Setting	Context Design	No. respondents	Physician characteristics	Consultation time	General interpersonal skills	Affective behaviour	Information gathering	Information giving	Health promotion	Physician control
Meland *et al.*, 1996[299]	Norway General practice	Empirical Observational	468	–	–	–	–	–	–	–	Self-directed care –ve
Morrel *et al.*, 1986[273]	UK General practice	Empirical Observational	780	–	+ve	–	–	–	–	–	–
Robbins *et al.*, 1993[203]	USA Hospital outpatient	Empirical Observational	100	–	–	–	–	Physical examination +ve History-taking –ve	Treatment discussion +ve	Health education +ve	–
Ross and Duff, 1982[283]	USA Ambulatory care	Theoretical Observational	376	If no choice, middle aged, white, non-Catholic male doctor preferred	–	–	–	–	–	–	–
Rowland-Morin and Carroll, 1990[293]	USA Ambulatory care	Empirical Observational	52	–	–	Silence +ve	–	–	–	–	–
Savage and Armstrong, 1990[169]	UK General practice	Empirical Experimental	320	–	+ve	–	–	–	–	–	Directing style preferred if physical problem
Smith *et al.*, 1995[277]	USA Outpatient	Empirical Experimental	86	Trained female doctors: +ve		–	Training in psychosocial skills +ve	–	–	–	– –
Stewart, 1989[17]	International Healthcare in general	Empirical Review	(61 data sets)	–	–	+ve	Social conversation +ve	ns	+ve	–	Partnership building +ve
Stiles *et al.*, 1979[295]	USA Primary care	Empirical Observational	52	–	–	–	–	Patient exposition +ve	Physician feedback +ve	–	–

continued

TABLE 25 contd *Summary of studies investigating the importance of features of the patient–practitioner relationship for satisfaction*

Reference	Country Setting	Context Design	No. respondents	Physician characteristics	Consultation time	General interpersonal skills	Affective behaviour	Information gathering	Information giving	Health promotion	Physician control
Treadway, 1983[281]	UK General practice	Empirical Observational	81	Gender: ns	–	+ve	Patient feels understood +ve	Listening +ve	–	–	ns
Wartman *et al.*, 1983[296]	USA Ambulatory care	Empirical Observational	515	–	–	–	–	–	–ve	–	–

–, feature not investigated; ns, not a significant determinant of satisfaction; +ve, positively related to satisfaction; –ve, negatively related to satisfaction

age.[267,282] It has been suggested that when patients do not have a choice of physician they prefer middle-aged, white, non-Catholic, male doctors.[283]

With regard to consultation time, longer consultations were associated with higher satisfaction in eight studies.[169,224,272,273,279,284–286] Two American studies showed no association,[282,287] but average consultation times in the USA are longer than in the UK.

There is general evidence that physicians' interpersonal skills affect satisfaction,[17,130,150,209,218,276,279,281,282,288–291] and that a personalised approach is appreciated by consumers.[280,292] One study showed a link between the use of silence in the interview and satisfaction.[293]

Affective behaviour by the physician was consistently related to satisfaction, although this was variously described by investigators in terms of warmth and respect,[212] friendliness,[213,234] trust,[209,294] courtesy, empathy,[279] supportiveness,[284] sensitivity[292] and understanding.[281] Shared laughter and chatting with patients have been associated with higher satisfaction.[17,130,224,284]

With respect to information gathering and giving, most evidence showed that satisfaction correlated positively with physician feedback and discussions about treatment.[17,130,150,203,208,209,212,213,224,240,279,285,286,295] Giving better information about drug regimens was shown to improve compliance but reduce satisfaction.[296] "Teaching" styles were unpopular.[288] The provision of general health promotion advice also generated satisfaction.[203,224,270,285,297]

Information collection by physicians, by means of chart reviews or history taking, has been observed to have a negative impact on satisfaction.[203,285] However, physician listening, undertaking a physical examination, and explaining patients' problems were noted to be positively related to satisfaction.[203,279,281,284,295] Expressions of physician control, including dominating the conversation, reduced reported levels of satisfaction.[234,282] A directing style has been found to be more satisfactory for patients with physical problems,[169] but in general partnership arrangements were preferred.[17,130,211,298,299]

Organisation of care

A total of 26 studies investigated how alternative ways of financing care and paying physicians affected satisfaction. There are only two UK studies in this group. The remainder focus on the implications of fee-for-service (FFS) funding in contrast to some form of prepaid managed care plan such as a health maintenance organisation. The main findings from these studies are reported in *Table 26* in alphabetical order of first author. The low UK interest in this area reflects the monopoly supply position of the NHS. The fundholding experiment that took place between 1991 and 1999 changed the budgetary arrangements for GPs, and had some minor effects on the processes of care. Evidence from early in the scheme, however, suggested that it had no significant implications for patient satisfaction.[300] Although subscribers to private medical insurance schemes were found to be less satisfied with the NHS than non-subscribers, most were observed to enrol because it was a job-related perk.[301]

A total of 19 studies evaluated US evidence about the relationship between FFS and prepaid healthcare schemes. They showed that satisfaction in the heterogeneous US system was primarily related to having insurance and a regular source of care.[297,302–304] Beyond that, there is consistent evidence that FFS results in higher overall satisfaction.[194,202,205,270,305,306,308] Two studies showed no differences in overall satisfaction between these models.[292,309] Another suggested that the initial evaluations of new enrolees in managed care organisations are judged on preconceived ideas rather than experience, and are modified as the relationship with the new doctor develops.[207]

On dimensions of satisfaction, FFS was rated more highly on the attentiveness of physicians,[194,202,310–312] and choice.[305,306,312] Managed care, on the other hand, scored more highly on preventive care,[305] cost[194,306,307,311,312] and billing arrangements.[305,310] Choice was found to be a significant determinant of satisfaction with a personal physician.[307,313]

Evidence from Norway largely confirms the patterns observed in the USA.[280] The greater satisfaction observed to result from FFS arrangements in Israel was attributed to trust-generating behaviour by physicians that is encouraged by the nature of their remuneration arrangements.[294] The introduction of "gatekeeping" in a Swiss managed care organisation was associated with low satisfaction on both technical and access criteria.[250,314,315]

Health service factors: discussion of the evidence

There is consistent evidence across settings of the important contribution that the patient–practitioner relationship can make to satisfaction. Detailed investigations confirm that patients

TABLE 26 *Summary of studies investigating the effect of organisational features on satisfaction*

Reference	Country	Context Design	No. responses	Data collection	Organisational feature investigated	Main findings
Ben-Sira, 1990[294]	Israel	Theoretical Observational	1,026	Interview	FFS vs salaried physicians employed by central organisation	FFS characterised by significantly more trust in physician, more humaneness and committed doctors, greater appreciation of technical competence, and higher satisfaction
Calnan *et al.*, 1993[301]	UK	Empirical Observational	1,688	Mail	Relationship between satisfaction with NHS and having private medical insurance	Subscribers less satisfied with NHS than non-subscribers, but membership was primarily because it was a job-related perk
Corney, 1999[300]	UK	Empirical Observational (Natural experiment)	120	Mail	GP fund-holding vs non-fund-holding	No significant differences in satisfaction or willingness to change practices Waiting times for referrals and appointments lower in fund-holding
Davis *et al.*, 1995[305]	USA	Empirical Observational	1,000	Telephone	FFS vs managed care (HMO)	Overall satisfaction significantly higher in FFS than HMO FFS more satisfied on choice, access, waiting HMO more satisfied on costs, paperwork, preventive care HMO lack of choice related to lower satisfaction Respondents rated physicians more highly than plans
Etter and Perneger, 1997[250]	Switzerland	Pragmatic Observational (Natural experiment)	720	Mail	Primary care gatekeepers vs outside specialists	Patients consulting specialists more satisfied overall, and with access and technical aspects of care
Fox and Storms, 1981[297]	USA	Theoretical Observational	2,582	Telephone	Regular source of care	Satisfaction related to having personal physician and regular source of care
Gray, 1980[202]	USA	Theoretical Observational	821	Telephone	FFS vs prepaid plan	FFS more satisfied on quality of care, courtesy, follow-up and personal interest of physician
Halpin Schauffler *et al.*, 1996[270]	USA	Empirical Observational	5,432	Mail	FFS vs HMO vs mixed model	Greater satisfaction with physicians in FFS than HMO
Hjortdahl and Laerum, 1992[280]	Norway	Empirical Observational	3,044	Mail	FFS vs salaried physicians	FFS more satisfied
Holloway *et al.*, 1989[292]	USA	Empirical Observational	1,142	Questionnaire in clinic	FFS vs prepaid plan	No difference between prepaid plan and FFS for satisfaction, personalised care, quality of care
Hsieh and Kagle, 1991[194]	USA	Empirical Observational	401	Mail	FFS or prepaid plan	FFS more satisfied with physician conduct Prepaid more satisfied with financial cover, less satisfied with access

continued

TABLE 26 contd *Summary of studies investigating the effect of organisational features on satisfaction*

Reference	Country	Context Design	No. responses	Data collection	Organisational feature investigated	Main findings
Hulka *et al.*, 1971[302]	USA	Empirical Observational	254	Interview	Insurance vs no insurance	Overall satisfaction related to having a regular doctor and having insurance
Hulka *et al.*, 1975[303]	USA	Empirical Observational	1,713	Interview	Attitudes to healthcare system	Positive attitudes associated with regular physician and long relationship
Kralewski *et al.*, 1988[312]	USA	Empirical Observational	1,014	Interview	HMO vs FFS vs HMO/FFS mix vs government (Medicare)	Satisfaction levels high over all aspects, regardless of type of plan HMO most satisfied with cost, less satisfied with doctor–patient relationship and choice
Mirowsky and Ross, 1983[205]	USA	Theoretical Observational	1,197	Interview and questionnaire	FFS vs not FFS	Satisfaction high if FFS and have personal physician
Mummaleneni and Gopalakrishna, 1997[306]	USA	Theoretical Experimental	2,891	Mail	FFS vs HMOs	Overall satisfaction highest for FFS HMOs rated as inferior on availability of specialists and hospitals, and superior on cost FFS inferior on waiting time and emergency care Voluntary HMO members more satisfied than those ascribed to HMO
Murray, 1987[309]	USA	Empirical Observational (Natural experiment)	447	Review of records	FFS vs prepaid plan	No difference in overall satisfaction with access, availability, continuity FFS more satisfied on humaneness dimension
Perneger *et al.*, 1996[315]	Switzerland	Empirical Observational	1,027	Mail	Salaried gatekeepers vs FFS in managed care organisation vs FFS in private practice vs hospital outpatient salaried residents	Overall satisfaction ratings (after removing confounding factors): 72.7%, 77.6%, 80.8%, 78.8% respectively Gatekeeping worst for 5 of 7 dimensions Group differences not significant for satisfaction with physician time and explanation
Pernerger *et al.*, 1996[314]	Switzerland	Empirical Observational (Natural experiment)	814	Mail	Patients moving from indemnity insurance to managed care	Managed care joiners' satisfaction fell over 1 year, particularly those in gatekeeper arrangements
Ross *et al.*, 1981[207]	USA	Theoretical Observational	376	Interview	Patients moving into managed care	People joining managed care had low satisfaction, although not based on experience This is revised over time, after good experiences in managed care

continued

TABLE 26 contd *Summary of studies investigating the effect of organisational features on satisfaction*

Reference	Country	Context Design	No. responses	Data collection	Organisational feature investigated	Main findings
Ross Davies *et al.*, 1986[307]	USA	Empirical Observational	2,013	Questionnaire in clinic	FFS vs HMO	Those choosing HMO were as satisfied as FFS counterparts People assigned to HMO were less satisfied Factors favouring HMOs: cost, office waiting Factors favouring FFS: length of appointment wait, availability of hospitals, continuity of care
Rossiter *et al.*, 1989[310]	USA	Empirical Observational (Natural experiment)	3,091	Telephone	FFS vs HMO (Medicare beneficiaries)	HMO enrolees more satisfied with waiting times and claims processing, less satisfied with professional competence of providers and willingness of staff to discuss problems
Rubin *et al.*, 1993[308]	USA	Empirical Observational	17,671	Questionnaire in clinic	FFS vs prepaid	FFS rated higher
Schmittdiel *et al.*, 1997[313]	USA	Empirical Observational	10,205	Mail	Choice of physician	People choosing own physician significantly more likely to record satisfaction as good–excellent
Stein *et al.*, 1989[311]	USA	Empirical Observational	100	Interview	HMO vs FFS	FFS higher satisfaction on doctor–patient relationship (doctor is familiar and caring), convenience of care and choice HMO more satisfied on cost, less satisfied on doctor–patient relationship and choice
Weiss and Ramsey, 1989[304]	USA	Empirical Observational	400	Interview	Regular source of care	Arrangements giving regular source of continuity of care associated with higher satisfaction

FFS, fee-for-service; HMO, health maintenance organisation

appreciate a personalised approach and affective behaviour. They seek a physician who can listen, will provide information and feedback, and whose behaviour emphasises shared decision-making.

There is also evidence that, where choice exists, care provided under FFS arrangements generates greater satisfaction than that delivered through prepaid schemes. Consumers registered with health maintenance organisations report greater satisfaction, mainly on cost and billing dimensions. Gatekeeping arrangements give rise to poor satisfaction scores on access and choice dimensions. Choice is positively associated with satisfaction.

Underlying these findings is a presumption that physician behaviour is affected by systemic incentives. If, for example, managed care remuneration arrangements constrain the time physicians spend with patients, or their ability to refer, this may impact negatively on the patient–provider relationship and on patient satisfaction. On the other hand, if FFS financing encourages physicians to engage in more affective behaviour, this may have a positive effect on reported satisfaction.[294] There is evidence from UK general practice that both patients and doctors prefer more time for consultations because more issues can be addressed. The cost-effectiveness of different lengths of consultation has not been explored.

Further research

Although both the patient–practitioner relationship and the means of healthcare financing are important influences on satisfaction, the links between these two features remain to be fully investigated. Research is required into the implications for patient care and outcomes of alternative means of financing and organising healthcare, and on how different incentive structures impact on physician behaviour. This is particularly important given the current worldwide interest in healthcare reform in the face of rising costs and resource constraints.

Chapter 5
Discussion

Introduction

The development of a consumer orientation in the NHS and the market basis of the US healthcare system have, in separate ways, focused attention on users' views of healthcare. This has become manifest in a surge of publications in the last decade. A synthesis of the existing state of knowledge is timely, to inform future policy making, to identify research needs, and to offer guidance to the ever-increasing number of investigators seeking to measure satisfaction for one reason or another and in a variety of contexts.

The aim of this review was to provide evidence-based guidance for practitioners and managers in the healthcare arena. It focused on methodological issues to inform those wishing to elicit the views of healthcare consumers about the services they offer, and on the determinants of satisfaction. It sought to distinguish the effect of health service factors (policy variables) on satisfaction in different settings, and the extent to which sociodemographic and other individual factors, over which suppliers have limited control, may influence evaluations. The review also aimed to identify gaps in current knowledge that could be addressed by future research efforts. These are discussed in the text that follows, and are summarised in *Box 2* in the order in which they are introduced.

The review method and its main findings and recommendations are summarised in the next section, which is followed by discussion of the implications of the review for the NHS and the main stake-holders (managers, practitioners, public policy analysts and politicians, and users). Concluding issues on consumer evaluations are raised in the final section.

Summary of review method and findings

Search process

The search process covered the satisfaction literature and more general evaluations of healthcare. It revealed an extensive and varied literature that reflects multi-disciplinary interest in the topic.

Various tactics were used to narrow the scope of the review in order to keep it to manageable proportions. In particular, the electronic search was limited to title words, to maximise the chance of identifying studies in which satisfaction was a primary focus, and to exclude those in which satisfaction was one of several outcomes under consideration. Furthermore, studies were included only if they investigated a generic issue. This rule resulted in the exclusion of a large number of condition- and location-specific studies of satisfaction. Careful checking of reference lists and extensive background reading was undertaken as a means of identifying possible gaps.

Many commentators note the lack of a comprehensive and coherent conceptual basis for work on satisfaction with healthcare. To guide the systematic review of the literature, a structural framework was established. This identified:

- healthcare factors, multi-dimensional in nature, that constitute the care experience, and which are judged by consumers in the formation of their views about the satisfaction they derive from the care received
- individual factors, particular to each consumer (their expectations, past healthcare experiences, sociodemographic characteristics and health status), which affect their evaluations of the healthcare they received
- methodological issues (features of the type of instrument used to measure satisfaction and how it is administered) because of the impact these can have on reported satisfaction.

Corpus of papers

A total of 176 empirical papers were analysed for the review; most (60%) had been published since 1990. The majority (56%, $n = 99$) were set in the USA and a further 27% ($n = 48$) were based in the UK. The characteristics of the included studies differ in some ways from those of another recent review[184] owing to differences in inclusion criteria and also to the difficulties of narrowing down such a broad area. In common with other previous work,[14] the review highlighted the predominance of observational studies in the satisfaction literature: 84% of all included studies fell into this category. Few studies (16%) were based on theory;

BOX 2 Areas for future research

- A review is required of evidence of the effects of satisfaction on health behaviours and outcomes in order to establish the importance to health services, and to individuals, of fostering satisfaction
- Methodological issues – investigations are required of:
  - The effect of the timing of surveys on evaluations, particularly the issues of recall, and the effect on outcomes
  - The extent of bias introduced by the use of interviewers
  - Cross-cultural issues, including the translation of surveys into other languages, and the identification of variations in preferences between different ethnic, educational and age groups in society
  - The impact of consumer feedback on decision-making, including the development of approaches such as conjoint analysis, so that relative strengths of preference between health service attributes can be measured and cost-effectiveness issues considered
- How consumers' expectations affect their evaluations of their healthcare experiences:
  - Classify different types of expectations, including ideals, desires, aspirations, entitlements, values, beliefs and standards, and how consumers operationalise these in evaluations
  - Investigate how expectations are formed, particularly the impact of individuals' background, education, past experiences, personality health beliefs, and the influence of family and friends, the media, political initiatives and healthcare professionals
  - Examine the relationship between sociodemographic factors and expectations
- How health status and health outcomes affect evaluations
- The reasons underlying the variation in satisfaction observed in different systems of healthcare delivery, specifically the effect of different incentive structures on physician behaviour; in the UK context this may involve investigating the cost-effectiveness of extending consultation times, so that broader issues, including health promotion, can be addressed
- The nature, cost and impact of local evaluation exercises in the NHS, to enable the identification and dissemination of good practice, to address cost-effectiveness issues, and to provide a context for future policy making

the majority (71%) were empirical and the rest were conducted for pragmatic reasons. The characteristics of included articles are summarised in *Tables 27–33*.

Methodological issues

A total of 37 articles were identified and analysed for the methodological issues that they addressed. The evidence gathered is summarised and discussed in chapter 3. Recommendations arising from the review for researchers seeking to collect

TABLE 27 *All included studies by country*

Country	*n* (%)
USA	99 (56)
Canada	2 (1)
UK	48 (27)
Other Europe	13 (7)
Rest of world	14 (8)
Total	176 (100)

TABLE 28 *All included studies by date of publication*

Date	*n* (%)
Pre-1980	9 (5)
1980–1985	30 (17)
1986–1990	31 (18)
1991–1995	51 (29)
1996–2001	55 (31)
Total	176 (100)

TABLE 29 *All included studies by setting*

Setting	*n* (%)
General practice/primary care	55 (31)
In hospital	39 (22)
Hospital outpatient/ambulatory care	43 (24)
Healthcare in general	34 (19)
Mixed	5 (3)
Total	176 (100)

TABLE 30 *All included studies by context*

Context	*n* (%)
Theoretically based	29 (16)
Empirical (academic)	125 (71)
Pragmatic (management)	22 (13)
Total	176 (100)

TABLE 31 *All included studies by size (no. respondents)*

Size	*n* (%)
<100	23(13)
100–499	62 (35)
500–999	30 (17)
1000–4999	44 (25)
5000–9999	10 (6)
10,000+	7 (4)
Total	176 (100)

TABLE 32 *All included studies by study design*

Design	*n* (%)
Experimental	24 (14)
Observational	148 (84)
Other	4 (2)
Total	176 (100)

TABLE 33 *All included studies by type of journal of publication*

Journal type	*n* (%)
Health service, management, quality	29 (16)
General medicine	93 (53)
Social science	32 (18)
Psychology	11 (6)
Nursing	5 (3)
Other: book, government, thesis	6 (3)
Total	176 (100)

information about consumers' views are that they should pay particular attention to the following issues:

- The implications of alternative ways of conducting surveys (mode, location) for response rates and the evaluations reported by respondents. The objectives of the study and resource considerations are likely to be an important influence on the choice of survey method. Investigators must determine, in the context of their own requirements, whether the extra benefits derived from more costly approaches are worth the extra expenditure.
- Sampling, in particular to ensure that the target population includes adequate representation of disadvantaged groups. This means that efforts must be made to reach people with visual and hearing impairments, learning or physical disabilities, elderly people, children, mentally ill people, and people whose first language is not that of the research, because evidence suggests such people are easily overlooked.
- Response rates, to ensure that findings are robust, and there is no low-response bias.
- Respondents' expectations, prior experiences and desires, because of the potential influence of these variables or evaluations.
- The opportunities for measuring relative preferences between attributes, because this has advantages in a policy-making context.

Qualitative approaches are currently adopted by relatively few investigators, although the importance of their contribution has been noted.[131] In the current review, 7% ($n = 13$) of the studies identified relied exclusively on qualitative approaches, and a further 11% ($n = 19$) used a mixture of qualitative and quantitative methods. Another recent review also showed that qualitative methods had been used in 7% of studies.[184] Although more costly to implement per respondent, qualitative investigations facilitate the participation of groups who may be missed when using self-completion surveys. Moreover, they can allow respondents, rather than managers or healthcare professionals, to set the agenda for the feedback, and they provide individualised, in-depth information that enables people's responses to be interpreted in the light of their particular circumstances and values. In contrast, quantitative approaches can involve superficial and simplistic questions, and reductionism. Open-ended questioning in structured questionnaires may be a compromise. If resources permit, a mix of approaches may be optimal.

Issues for which further methodological research is required are:

- The effect of the timing of surveys on people's evaluations of their healthcare. Of importance here are the issues of recall and the influence that clinical and health-related quality-of-life outcomes may have on perceptions.
- The extent of response bias introduced by the use of interviewers.
- Cross-cultural issues, including the translation of surveys into other languages, and identifying variations in preferences between different ethnic, educational and age groups in society.
- The effect of consumers' expectations on their evaluations of healthcare experiences.
- The use of consumer feedback in decision-making, including the development of approaches such as conjoint analysis, so that relative strengths of preference between health service attributes can be measured and cost-effectiveness issues considered.

Determinants of satisfaction

A total of 139 articles were identified from which evidence was analysed about how individual factors and various health service features affected reported satisfaction. Most of these studies were observational and used correlational methods because manipulating quality of care attributes to measure the impact on reported satisfaction is ethically and practically problematic. Individual factors that affect satisfaction were grouped into three categories: expectations (including desires and prior experiences), health status and socio-demographic characteristics. Although service providers have little direct influence over individual factors, an understanding of the mediating role of

these variables is important for an accurate interpretation of user evaluations of healthcare delivery. Features of healthcare delivery are potential policy variables; evidence of dissatisfaction can be addressed by managers and professionals, subject to resource and cost-effectiveness considerations.

Evidence

Despite theoretical developments and the potential importance of expectations to consumer evaluations, this aspect has received relatively little research attention and evidence is patchy. There is some evidence that poorer health status is associated with lower satisfaction, although this finding may not extend to all chronically ill groups. Sociodemographic factors were investigated by more than half of the empirical studies. Although there is a consistent positive relationship between age and satisfaction, the evidence on other variables (gender, race, education, income) is equivocal.[316]

There is consistent evidence across settings that the most important determinants of satisfaction are the patient–practitioner relationship and interpersonal aspects of care. Detailed investigations of the nature of this relationship show that respondents appreciate: a personalised approach; affective, trust-generating behaviour; and a non-controlling physician who listens, imparts information and actively involves the patient. The importance of a patient-centred approach is now widely recognised.[90,317–319]

If consumer satisfaction is a priority, the available evidence suggests that there is a need systematically to address interpersonal issues in practitioner training, and to ensure that the organisational, financial and regulatory arrangements that influence care delivery are structured in such a way that practitioners are encouraged to foster supportive and interactive relationships with their patients.

There is evidence from healthcare systems where people have choices that choice *per se* is valued. FFS generates more satisfaction, except for billing and cost dimensions, than a variety of managed care organisations. Gatekeeping reduces satisfaction with respect to access and choice. Furthermore, there is evidence that physicians in managed care environments experience lower job satisfaction than their counterparts in FFS.[320] Underlying these studies is a presumption that physician behaviour, and the nature of the patient–practitioner relationship, is affected by the incentives and regulations inherent in different systems.

Areas in which further research on the determinants of satisfaction is required:

- To classify different types of expectations, including ideals, desires, aspirations, entitlements, values, beliefs and standards, and to investigate how consumers operationalise these different concepts when evaluating care.
- To investigate how expectations are formed, particularly the impact of individuals' background, education, past experiences, personality and health beliefs, and the influence of family and friends, the media, political initiatives and healthcare professionals themselves.
- To examine the relationship between sociodemographic variables and expectations.
- To explore how different types of illness and health outcomes affect evaluations.
- To investigate the reasons underlying the differences in satisfaction observed in various healthcare delivery systems, and specifically to explore the effect of different incentive structures on physician behaviour. If trade-offs have to be made between cost on the one hand, and choice, access, technical and interpersonal aspects of care on the other, it is important to know the nature of these relationships so that informed decisions can be made. In the UK context this may involve further research into the cost-effectiveness of extending consultation times so that broader issues, including health promotion, can be addressed.

Implications of the review for the NHS

Measuring satisfaction is important for quality assurance purposes and because satisfaction may affect health outcomes.

The significance of satisfaction as an independent variable affecting healthcare utilisation, compliance or health outcome is mentioned by many authors, but little evidence was encountered in the course of the present review to confirm the strength of the implied relationships. The search strategy for this review did not extend to a consideration of how satisfaction may affect health behaviours and outcomes. It is recommended that further research into the effects of satisfaction on health behaviours and outcomes should be conducted, to establish the importance of fostering satisfaction to the health service and to individuals.

Continuous quality monitoring requires regular feedback from consumers about their perceptions

of the quality of care. In the NHS, information gathering from consumers about their satisfaction, and causes of their dissatisfaction, is essential to the quality assurance process because limited choice means that preferences cannot be expressed by changing providers. This review has synthesised evidence concerning the methods of obtaining evaluations from users and on the determinants of satisfaction. In this way it addresses the needs of both managers and practitioners. The national and local policy context of satisfaction research in the NHS, and more general issues of relevance to public policy analysts and politicians, are discussed further below. This chapter concludes with a discussion of user interests in the measurement of satisfaction.

NHS policy: national initiatives

The package of quality improvement measures introduced by the new Labour Government in 1998[85] included an annual survey of patients and users, to probe their experiences of the NHS. It was argued that this problem-centred approach would elicit more reliable, meaningful and actionable responses than a survey based around satisfaction ratings.[264]

The survey is in two parts: the use of a sample of 50,000 people identified from electoral rolls across the country to monitor varied aspects of NHS care in general (including general practice, referrals, inpatient care, day care, outpatient care, community care); and a rolling programme of obtaining information from recently discharged patients to monitor selected clinical areas, which began with coronary heart disease and cancer. For confidentiality reasons, a mail-in method of data collection was chosen.

The survey has been criticised on the following grounds: the items selected for inclusion are not sufficiently consumer-orientated, and the essentially quantitative nature of the design involves reductionism. Furthermore, the benefits and costs of the exercise have not been widely publicised, neither have they been compared with the value of other means of collecting feedback involving a more in-depth and qualitative analysis.[321]

The National Plan for the NHS in 2000[90] paved the way for introducing new performance indicators that would enable trusts to be compared on the basis of consumer ratings. National level consumer surveys are conducted in the USA and it has been suggested that the NHS could learn from this experience.

The US experience

A standardised instrument for collecting views from US healthcare consumers was developed in 1996: the Consumer Assessment of Health Plans (CAHPS). This is now a widely used means of comparing the consumer orientation of different health plans. It comprises a number of modules for different patient groups and has been extensively tested.[161,322–334]

Caution should be exercised, however, before US approaches such as CAHPS are implemented in the UK because their applicability to the NHS context may be limited.[335] The underlying philosophies of the market-led US and publicly provided UK healthcare systems are different, and the primary objectives of NHS consumer surveys are not consistent with those of the Agency for Health Care Policy and Research in their administration of CAHPS. The CAHPS system is used in the USA primarily to inform consumer choice on a scale that is not available in the NHS. The incidental effect of CAHPS is to create a natural competitive incentive for quality improvement and client-centred care. It does not replace local initiatives: the market-driven nature of the American healthcare system means that most healthcare organisations are highly consumer orientated and heavily engaged in consumer feedback activities that are serviced by an industry of independent research firms.[336]

CAHPS data are summarised on report cards that are made available to employers and consumers to inform their choice of plan, although there is evidence that price is more important than satisfaction ratings in influencing purchasers' decisions.[337–341] Moreover, the accuracy of report card ratings has been questioned because of the selective use of data and owing to the loss of precision when multiple items are combined to produce summary indicators.[342–344] Such considerations could also be important in the NHS context if attempts were made to derive performance indicators from summary satisfaction measures, particularly if financial incentives were linked to the resultant rankings.

NHS policy: local initiatives

The National Plan for the NHS[90] requires all providers of primary and secondary care to ask patients and carers for their views about the service provided, and to report their findings and the action taken in an annual prospectus. At the time of writing, the balance between local discretion and central direction in this process has not yet been determined. There are continuing concerns about available expertise and the methodological

quality of locally initiated studies,[1,9,62,110] and the desire to derive national-level performance indicators may necessitate some commonality.

There are important advantages of locally initiated studies because they are closer to the consumer experience and better able to action issues of concern. Little is currently known about the extent and nature of local studies within the NHS; such information could usefully be gathered. A survey of 230 (mainly unpublished) consumer feedback studies in 1989 showed that most were concentrated in the hospital sector, and that there was a wide variety of data collection methods in use.[345] A fuller understanding of current practice would provide a context for future policy, and would enable the identification and dissemination of good practice procedures. Data collection is not cost-free and, with many competing uses for scarce NHS resources, it is important to consider cost-effectiveness issues when satisfaction is being measured at the local level.

Local studies can be undertaken in-house or subcontracted to a commercial social research firm to assist with all or part of the process. Either way, local providers can decide, according to local needs, the balance between quantitative and qualitative approaches and points of detail such as who to approach, what to ask about, and how, when and where to conduct the research. There is a need to evaluate alternative approaches to collecting consumers' views in the light of the goals of the exercise and available resources. This would also involve deciding whether to use an existing data gathering instrument or to design a new one.

Instruments

Because of the costs and complexities involved in constructing new instruments, many managers and healthcare professionals may choose to use one of a number of existing instruments. The advantage of this is that these instruments have already been refined in their development process and evidence is available on their psychometric properties. In some circumstances, however, these generic instruments may not be deemed appropriate and investigators may wish to design their own survey to suit their particular requirements. Existing reviews highlight methodological weaknesses in satisfaction research in general and a lack of awareness of important psychometric issues in particular.[184] Deficiencies are most frequently recorded in studies where newly designed instruments are used.[184,346] Of the studies analysed in this review, a narrow majority (52%) devised their own instruments; the rest used a predeveloped and tested survey.

A list of generic instruments encountered in this review, and the frequency of their use, is given in appendix 14. The majority were developed in the USA and are not directly applicable to the UK healthcare system. Several UK instruments, however, are based on adaptations of widely tested and used US surveys. All survey types are represented in the UK-based list, ranging from the Critical Incident Technique, a qualitative approach,[142] through direct measures of satisfaction,[347,348] to experience-based measures.[251,349] No attempt has been made in this review to evaluate the quality of these instruments and no separate searches were undertaken for particular instruments.

Public policy and the NHS

Public policy analysts and politicians seek people's views of the healthcare system in general. Many of the principles underlying local satisfaction studies, which have been discussed in this review, apply equally to macro-level analysis. Population-level surveys of opinion about the NHS show fluctuating levels of (dis)satisfaction, socio-economic, demographic and regional variability in views, and a tendency for the public to be most satisfied with their GP service and least satisfied with hospital appointments.[350] NHS employees express more dissatisfaction with the NHS than the public as a whole.[351] Different surveys at a given point in time have reported different levels of (dis)satisfaction,[352–358] attributable to wording and context effects. Moreover, public opinion has been closely linked to media activity.[355] Before real meaning can be attached to recorded levels of public opinion, however, it is necessary to have an understanding of the public's expectations about the health service.

Recent policy initiatives have stipulated standards against which local performance can be judged. In particular the Patient's Charter itemises "rights" that users can "expect" in carefully chosen and measurable areas. Although some NHS staff are critical of such attempts to condition consumer expectations,[359] there is evidence that many members of the public are unaware of the basic standards being laid down by the Government on their behalf. For example, a third of people are reported to have never heard of the Patient's Charter and less than 20% to have read it.[360]

International comparisons

International comparisons offer public policy analysts and politicians information about the relative popularity of their healthcare systems, but they should be treated cautiously. Comparisons

of per capita expenditure on healthcare and measures of satisfaction in the Organization for Economic Co-operation and Development countries show a positive relationship. Dissatisfaction is similarly correlated with lower healthcare expenditure.[361,362] The exception to this is the USA, where high expenditure is associated with high dissatisfaction. Commentators attribute this to system failures (particularly inadequate insurance cover and high out-of-pocket expenses) because high levels of satisfaction with personal care from doctors and hospitals are recorded.

Data from recent studies (*Table 34*) show few differences in the proportions of people rating their care as good–excellent in five industrialised countries, but larger differences in dissatisfaction (as proxied by the need for system reform) are recorded. In all countries elderly people are more satisfied than the general adult population. Reasons for dissatisfaction vary: waiting times in the national healthcare systems of the UK and Canada, and out-of-pocket expenses in the market-based US system.[363–365]

International comparisons of public opinion about healthcare systems are difficult to interpret because cultural differences affect expectations.[366] For example, although 74% of patients in the USA and 78% in the UK regarded the length of their consultation with their doctor to be about right, the actual consultation times were significantly lower in the UK[345] (*Table 34*). The NHS is known for its low expenditure, and its users' acceptance of lower levels of service than would be tolerated in other industrialised countries.[366,367] Political control of the budget has historically depressed expectations about what the NHS could afford;[220] this situation may be sustained by doctors whose capitation payments are a powerful incentive not to augment patient aspirations. In contrast to the USA, where the free enterprise system generates variety that has extended expectations, the NHS emphasises uniformity of service provision and the British people are willing to accept constraints imposed by government regulation in the interest of social solidarity.[64]

User interests and complaints

In publicly provided healthcare systems where consumers' choices are restricted and "exit" is limited, the ability to express an opinion ("voice") is important for accountability reasons. Although routine evaluation exercises initiated by providers offer an opportunity for feedback on a regular basis, this may not always be sufficient or appropriate. If consumers have serious concerns or causes for dissatisfaction they may spontaneously complain about treatment or service issues. The analysis of complaints is a potentially important source of information for managers and practitioners in the NHS about quality problems. They take complaints seriously because a number of them will result in costly litigation.[368]

Since the early 1990s, there has been evidence from various sources of a steady increase in complaints about the NHS and an acceleration in this trend in recent years.[369–371] This has generally been interpreted to signal the end of a culture of not complaining, rather than as a sign of reduced service standards.[372–374]

Analyses of complaints show causes that vary with the setting.[8,101,103] A frequent trigger, however, is the failure of interpersonal relationships.[7,375] This is consistent with the findings of this review, which showed the importance of the patient–practitioner relationship for satisfaction. Behavioural evidence also shows that disaffected NHS patients explore the complementary medicine sector because it offers them involvement, control and interpersonal care that is not always available through their traditional medical practitioner.[275]

Complaints data do not provide a complete picture of the nature and extent of dissatisfaction in the NHS. There is evidence of significant amounts of concealed dissatisfaction because people are unaware of the complaints system, find it complex and intimidating, and fear reprisals.[373] Moreover, many believe complaining has no impact, so they rely on informal channels instead.[7,8,102,222,376,377]

Concluding issues: consumer evaluations and quality of care

This review has highlighted uncertainties about the measurement of quality of care and the role of consumer evaluations within this. Many unanswered questions remain in both these domains.[377] Although few would disagree that consumers are important judges of the care they receive, concern remains about their ability to judge technical aspects of it, and uncertainty exists about what they are evaluating when they report satisfaction.[378] In market-based systems, consumer opinions count, even if ill-informed.[379] In publicly funded systems they have important political implications.

Satisfaction is a multi-dimensional concept that is not yet tightly defined. It is part of a complex model and there is widespread agreement about

TABLE 34 *Percentage international comparisons of public opinion: general adult population (>65 years in parentheses) (adapted from Donelan* et al.*, 1999[363] and Donelan* et al.*, 2000[364])*

	Country									
	Australia		New Zealand		Canada		USA		UK	
Rate care as good/excellent	85	(94)	83	(95)	84	(92)	82	(90)	81	(94)
Rate hospital care as good/excellent	79	(90)	78	(95)	82	(87)	82	(87)	82	(88)
Want minor changes	19	(34)	9	(22)	20	(38)	17	(25)	25	(39)
Want to rebuild system	30	(24)	32	(31)	23	(18)	33	(26)	14	(15)
Difficulty in getting care in last 12 months	8	(7)	12	(10)	10	(13)	14	(11)	10	(15)
Difficulty in seeing specialist in last 12 months	35	(10)	35	(11)	46	(23)	39	(14)	29	(24)
Waited >4 months (5 weeks) for elective surgery	17	(19)	22	(40)	12	(34)	1	(7)	33	(51)
Problem with paying bills	10		15		5		18		3	
(Had government help with care costs)		(51)		(67)		(62)		(75)		(40)
Out-of-pocket cost >$500	19		10		9		29		1	
(Monthly prescription costs >$50)		(3)		(10)		(14)		(36)		(0)
Length of doctor visit about right	84		84		82		74		78	
Length of doctor visit 10 minutes or less	43		44		33		30		65	

the problems encountered in endeavouring to measure it.[379,380] Indeed, the measurement of satisfaction has been described as "probably a hopeless quest",[345] with many possible sources of measurement and interpretation errors. For this reason, alternative means of recording consumers' evaluations are used.

Whatever evaluative approach is adopted, significant empirical issues need to be resolved: what aspects to investigate, how best to do it, how to allow for expectations, and how to ensure the results are acted upon.[32] The role of expectations is central to the interpretation of the results of surveys. Satisfaction implies that expectations are met, and can be recorded even in the face of poor quality care if expectations are depressed. Similarly, dissatisfaction may reflect unreasonable expectations, even when care is adequate and appropriate.

User interests are served only if user views affect decision-making. Actioned responses to feedback provide a link between consumer evaluations and improvements in quality of care. Better systems need to be engineered into government-run programmes to make information-based corrective action possible.[381] Measures of relative preferences for different attributes and information on the resource costs of proposed changes are required for rational decision-making, which could be facilitated by minimising bureaucratic constraints.[382] To measure quality, standards need to be set against which judgements can be made; this raises issues about choice of criteria and the determination of appropriate evidence-based and cost-effective benchmarks.[221] Consumer views are important in this process because of the particular perspectives they provide and because they are the ultimate evaluators of the care that is subsequently delivered.

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Appendix 1

Previous reviews of the measurement of patient satisfaction (by subject area)

General

Ahorony L, Strasser S. Patient satisfaction: what we know and what we still need to explore. *Med Care Rev* 1993;**50**:49–79.

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Methodology

Sitzia J. How valid and reliable are patient satisfaction data? An analysis of 195 studies. *Int J Qual Health Care* 1999;**11**:319-28.

Primary care

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Hospital care

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Treatment

Weaver M, Patrick D, Markson L, Martin D, Frederic I, Berger M. Issues in the measurement of satisfaction with treatment. *Am J Managed Care* 1997;**3**:579–94.

Doctor–patient communication

Williams S, Weinman J, Dale J. Doctor–patient communication and patient satisfaction: a review. *Fam Pract* 1998;**15**:480–92.

Telemedicine

Mair F, Whitten P. Systematic review of studies of patient satisfaction with telemedicine. *BMJ* 2000;**320**:1317–20.

Appendix 2

Search terms

Patient	**Satisfaction**	**Measurement**	**Health care**
User	Dissatisfaction		**Medical care**
Consumer	Evaluation		
Client	Appraisal		
Customer	Assessment		
Recipient	Judgement		
Society	Views		
People	Opinions		
Group	Perceptions		
	Audit		
	Estimate		
	Acceptability		
	Quality assurance		

Appendix 3

Outreach activities

Mailbase e-mail discussion groups

all-stat
evidence-based-health
admin-health
clinicalaudit
european sociologist
lis-psychol
total-quality-healthcare
healthecon-discuss
healthecon-eval
public health

Many of these lists link to a network of other associations. Seventy-five replies were received from individuals, academics and organisations in the UK and around the world

Notices and fliers

Notices and fliers about the review were taken by team members to a variety of conferences in the UK and abroad.

Conference proceedings

Conference proceedings were scanned; relevant papers were followed up from the following meetings:

Association for Health Services Research, Washington DC (June, 1998)
Health Economics Conference, Cornell University, Ithaca, NY (June, 1998)
NHS Clinical Audit conference, Harrogate, UK (November, 1998)
European Forum on Quality Improvement in Health Care, Stockholm, Sweden (May, 1999)
International Society for Quality in Health Care, Melbourne, Australia (October 1999)
International Society for Pharmacoeconomics and Outcomes Research, Edinburgh, UK (November, 1999)

UK healthcare organisations

UK Healthcare organisations (as listed in the NHS Directory) were contacted by telephone.

Information was received from:

Association of Community Health Councils for England and Wales
British Psychological Society Centre for Outcomes Research and Effectiveness
Carers National Association
Centre for Health Information Quality
College of Health
General Medical Council
King's Fund
National Centre for Clinical Audit
National Consumer Council
Patients' Association

Personal contact

Personal contact was established with the following leading academic researchers and practitioners:

UK

Mr Mark Avis (University of Nottingham)
Professor Mildred Blaxter (University of East Anglia)
Ms Meg Bond (University of Warwick)
Mr Philip Meredith (University of Birmingham)
Ms Wendy Nganasurian (Patients' Association)
Professor Martin Roland (University of Manchester)
Mr John Sitzia (Worthing Southlands Hospitals NHS Trust)

USA

Dr Paul Cleary (Harvard University)
Dr Donald Light (University of Pennsylvania)
Dr Dennis Scanlon (Penn State University)
Dr Alan Zaslavsky (Harvard University)

USA healthcare quality organisations contacted

Health Care Financing Administration, Baltimore, MD (Dr Mamatha Pancholi)
National Council for Quality Assessment, Washington DC (Dr Mark Plunkett)
The Picker Institute, Boston, MA

UK local quality assurance officers contacted

East Surrey Health Authority (Ms Jo Kemp)
Royal Surrey County Hospital NHS Trust
Community Health Council

Appendix 4

Content extraction form: background articles

Measurement of satisfaction with healthcare: background articles

Ref. no. _____ Review category _____ Reviewer _____ Checker _____

Author Source and year

Title

Country

Summary of main points:

Other references to collect:

Appendix 5

Data extraction form: empirical articles

Ref. no. _____ Reviewer _____ Checker _____

Review Category Main Sub

Authors

Title

Source
Year Volume Pages

Country

Background/context

Objective

Theoretical basis

Population and setting

Sample size and attrition

Data and data collection

Measurement of satisfaction
Direct/indirect/experience/recommend or return
Instrument: own/generic – which?
Multi-dimensional/global/both
Comments

Method of analysis
Quantitative/qualitative

Results

Conclusions

Comments

Other references to collect

Appendix 6

Assessment of quality of evidence on basis of methodological considerations

Study ID ref. _____ Reader _____

First author _____

Study type:

❑ Experimental (independent variable manipulated) **See below**

❑ Observational/correlational/quasi-experimental (no manipulation of independent variable) **Go to page 2**

❑ Qualitative **Go to page 3**

❑ Other (e.g. meta-analysis) please specify _____ **Go to page 4**

Experimental checklist

_____ Randomised Y/N
_____ Control groups: "placebo" group/no treatment group
_____ Blinding – single/double/treble – subjects/experimenters
_____ Sampling: representativeness? Participation
_____ Attrition rate
_____ Follow-up?
_____ Sample size? Power of study
_____ Comparability of groups at baseline?
_____ Valid and reliable measures?
_____ Same treatment except experimentation (confounds)
_____ Appropriate methods of statistical analysis

Overall

Acceptable ❑ Marginal ❑ Poor ❑

Any further comments

(Page 1)

Observational/correlational/quasi-experimental checklist

_____ Cross-sectional/longitudinal/cohort (panel)
_____ Sampling: representativeness?
_____ Participation rate?
_____ Attrition rate
_____ Follow-up
_____ Sample size? Power of study
_____ Valid and reliable measures? Or own?
_____ Confounding factors: avoided/adjusted?
_____ Appropriate methods of statistical analysis

Overall

Acceptable ❑ Marginal ❑ Poor ❑

Any further comments

_____

_____

(Page 2)

Qualitative Guidelines

Does the article include the following information?

1. The methods by which data were produced: Y/N
2. Evidence of mechanical means for recording data, where appropriate, and standardised procedures for transcribing material: Y/N
3. Design takes account of existing knowledge of field: Y/N
4. Design incorporates accounts from all members of the setting (i.e. not just privileged or disadvantaged groups): Y/N
5. Evidence of search for disconfirming data (e.g. by extended period of time in the setting, systematic use of theoretical sampling etc.): Y/N
6. Reflection on the contribution of the researcher's presence to the data obtained: Y/N
7. Clear account of the processes of coding and categorisation: Y/N
8. Clear definitions of concepts and categories such that meaning and application are each unequivocal: Y/N
9. Demonstrates that the conclusions are justified in relation to the data generated: Y/N
10. Sufficient data presented to allow reader to assess interpretations from the data: Y/N
11. Evidence for, and consideration of, disconfirming instances: Y/N
12. Consideration of alternative explanations for the data: Y/N
13. Consideration of generalisability of findings: Y/N

Overall

Acceptable ❑ Marginal ❑ Poor ❑

Any further comments

(Page 3)

Checklist for other (e.g. meta-analysis): **please specify** _____

Overall

Acceptable ❑ Marginal ❑ Poor ❑

Comments and justification of decision (use criteria from other study types above as appropriate)

_____

_____

_____

_____

_____

_____

(Page 4)

Appendix 7

Summary table for articles reporting methodological evidence

Study: ref. ID, author, journal, year, setting, country	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions

Appendix 8

Summary table for articles reporting evidence on the determinants of satisfaction

Study: ref. ID, author, journal, year	Determinants investigated	Sample and data collection	Results
		Measurement of satisfaction	
Setting	**Context**		**Conclusions**
Country	**Design**		
		Method of analysis	

Appendix 9

Articles excluded as a result of the quality assessment process

Methodological articles

Ho P, Stegall M, Wan T. Modeling two dimensions of patient satisfaction: a panel study. *Health Serv Manage Res* 1994;**7**:66–76.

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Appendix 10

Details of SPSS database summarising the features of articles containing methodological evidence

Background variables *(variable name)*

Reference identification number *(refid)*
First author *(author)*
Type of journal *(journal)*: health services/management/quality; general medicine; nursing; social science; psychology; other, including government, book, thesis
Year of publication *(date)*
Country of study *(country)*
Setting of study *(setting)*: primary/GP; inpatient; outpatient/ambulatory care; healthcare in general
Context of study *(context)*: theoretical; empirical; pragmatic
Study design *(studtyp)*: experimental; observational; other

Measurement variables *(variable name)*

Method of analysis *(analysis)*: quantitative; qualitative; both
Measurement of satisfaction *(measure)*: multi dimensional – list; global; both
Instrument used *(instrum)*: generic – name; own
Number of respondents *(number)*

Study aim variable *(variable name)*

Study focus *(focus)*: survey method; response rate; design issue

Outcome variables *(variable name)*

Reported satisfaction *(rptdsat)*
Response rate *(rsponse)*
Cost *(cost)*
Other *(other)*
Confounding factors *(confound)*

Appendix 11

Details of SPSS database summarising the features of articles containing evidence on the determinants of satisfaction

Background variables *(variable name)*

Reference identification number *(refid)*
First author *(author)*
Type of journal *(journal)*: health services/management/quality; general medicine; nursing; social science; psychology; other, including government, book, thesis
Year of publication *(date)*
Country of study *(country)*
Setting of study *(setting)*: primary/GP; inpatient; outpatient/ambulatory care; healthcare in general
Context of study *(context)*: theoretical; empirical; pragmatic
Study design *(studtyp)*: experimental; observational; other

Measurement variables *(variable name)*

Method of analysis *(analysis)*: quantitative; qualitative; both
Measurement of satisfaction *(measure)*: multi dimensional – list; global; both
Evaluative approach *(evalapp)*: direct; indirect; experience; recommend/return
Instrument used *(instrum)*: generic – name; own
Mode of administration *(admin)*: telephone; interview; questionnaire on site; mail; mixed; other
Number of respondents *(number)*

Individual variables *(variable name)*

Expectations *(expect)*
Health status *(hlthstat)*
Sociodemographic *(socdem)*
Other *(other)*

Health service variables *(variable name)*

Primary care *(prim)*
Inpatient *(inhosp)*
Outpatient/ambulatory *(outpat)*
Organisation/structure *(orgstruc)*
Patient–practitioner relationship *(relate)*

Appendix 12

Empirical studies investigating methodological issues

(Main reference list numbers (see pp. 79–90) are given after each citation)

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Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Barkley and Furze, 1996[168] USA In hospital	To assess effect of low response rate on satisfaction scores Empirical Observational	Random sample of patients from 76 hospitals, 6–14 weeks after discharge *n* = 19,556, of which 58% responded Mailed structured questionnaire Comparison of satisfaction scores for first 30% of responses received and all responses	Patient Viewpoint Survey (from Patient Judgement of Hospital Quality) 11 scales, 69 items: admission, daily care, information, nurses, physicians, ancillary staff, living arrangements, housekeeping, food, discharge, buildings	50% of items showed significant differences in satisfaction scores between first 30% of responses and all responses	Decisions made on basis of low response rate data will not match decisions made using higher response rate data in about 50% of cases Recommend target response rate of about 50% pending further empirical observation
Bowman *et al.*, 1992[148] USA Family practice	1) To compare three different methods of administration: in person, telephone, mail 2) To compare responses at time of consultation and 1 month later Empirical Experimental	91 patients approached; 1 refused 64 (70%) of patients completed both surveys Random assignment to returning questionnaire in person before leaving clinic, returning through postage-paid envelope, responding by telephone the next day 1-month follow-up conducted by telephone/mail/telephone respectively Correlation	Patient–Doctor Interaction Scale (PDIS), 19 items	No significant difference in PDIS scores by age, sex, race, visit characteristics, physician PDIS score significantly lower at 1 month follow-up ($p < 0.05$) People not completing 1 month of follow-up were not significantly different from original sample in sociodemographic characteristics Test-retest reliability showed instrument to be stable across mail ($p < 0.001$) and telephone ($p < 0.01$) methods Telephone: 85% response, lowest PDIS scores (76.8) at baseline ($p < 0.05$) but remained stable at 1 month Mail: 52% response, PDIS score was 84.6 at baseline and declined to 81.6 over 1 month ($p < 0.05$) In person: 69% response, PDIS score was 83.7 at baseline and declined to 78.5 at 1 month telephone follow-up ($p < 0.05$)	PDIS appears to fulfil the requirements of a valid, reliable and useful instrument to assess patient satisfaction in family practice settings

continued

Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference **Country** **Setting**	**Objective** **Context** **Design**	**Sample** **Data collection** **Analysis**	**Measurement of satisfaction**	**Results**	**Conclusions**
Cohen *et al.*, 1996[162] Scotland In hospital	To compare interview and mail survey to see how wording and presentation of questions influence responses Empirical Observational	Hospital users in last 12 months from: 2 Scottish interview surveys, n = 1187, n = 1498 Lothian mailed health survey, n = 2569 Structured questionnaires Descriptive statistics	Various questions on information, involvement and treatment common to all surveys, although wording of questions differed	No significant differences between samples Higher dissatisfaction in mail survey ($p < 0.01$) Fewer respondents agreed with a negative statement about care than disagreed with a positive statement about same aspect of care ($p < 0.01$)	Method of administration and wording is important
Ehnfors and Smedby, 1993[167] Sweden In hospital	To investigate methodological issues affecting sampling, non-response and other losses Pragmatic Observational	5 studies A–E: 5 hospitals, 60 wards A–D, questionnaires distributed routinely to patients on discharge E, questionnaire distribution on discharge tightly controlled by researcher Descriptive statistics	Spri's questionnaire widely used in Sweden 63 items cover: information, care, environment	Response rates: A–D: 25% E: 50% Large numbers of patients never given questionnaires in routine studies: reduces response ("invisible losses") Many excluded patients in difficult situations: old, confused, seriously ill, immigrants with language problems	Important to monitor procedures for survey implementation to ensure higher response rates and cover of disadvantaged groups
Etter *et al.*, 1996[188] Switzerland Hospital outpatient	To investigate effects of sponsorship on response rate and satisfaction ratings Empirical Experimental A: University letterhead; n = 200 B: Medical practice letterhead; n = 189 Reminders sent	389 patients contacting a physician over 1-week period randomly selected and assigned to 2 groups Mailed Chi-squared *t*-tests Regression	22-item questionnaire Statements of opinion adapted from published studies 5-point scale 7 areas: 1) Care in general 2) Admission 3) Access 4) Interpersonal manner of physician 5) Time with physician 6) Technical competence 7) Information	80.5% response in both groups 6 of 7 satisfaction scores higher in B, but not statistically significant ("obliging" responses had been expected in B) Late responders less satisfied: cumulative satisfaction ratings decreased over time in both groups ($p < 0.05$), possibly due to irritation from constant reminders	Sponsorship has little effect on patient satisfaction surveys, despite market research evidence that university sponsorship can raise response rates

continued

Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Fowler *et al.*, 1999[161] Healthcare in general USA	To compare telephone and mail responses to Consumer Assessment of Health Plans (CAHPS) Part of process of testing CAHPS with respect to: Reporting of experiences Response rate Empirical Experimental	3 sets of respondents: 1) Medicare beneficiaries in California: mail, *n* = 97; telephone, *n* = 217 2) Adults with chronic conditions insured through State of Washington: mail, *n* = 109; telephone, *n* = 98 3) Adults (cross-section) insured through State of Washington: mail, *n* = 609; telephone, *n* = 446 Mail non-respondents received telephone follow-up Chi-squared	CAHPS First 2 studies used pretest instrument Third study used revised instrument	Pretest of instrument resulted in numerous significant differences by mode ***Revised instrument:*** 9 of 58 items differed significantly by mode ($p < 0.05$) Only 3 of these could significantly affect reported results, and the two most important of these went in opposite directions: personal doctor rating more favourable by phone Composite item about paperwork more favourable by mail Response rates were similar by both protocols in each study	Need further steps to reduce mode effects, but, with revised instrument, mode of data collection will have little effect on results
Goldsmith, 1983[149] USA General practice	To compare feedback using: a) Self completion questionnaire in clinic b) Telephone interview based on same questionnaire plus interviewer probing c) Open-ended questions and interactive telephone interview Pragmatic Experimental	a) *n* = 100 b) *n* = 48 c) *n* = 50 All from same practice, mainly women on Medicare Groups (b) and (c) samples chosen to match sociodemographics of group (a) Qualitative	Groups (a) and (b) structured questionnaire: 23 multiple choice questions, Likert scales b) Involved interviewer probing c) Open-ended questions used in interactive interview	(a) and (b) compared: Telephone probing revealed objective ratings but little resemblance to the subjective satisfaction patients expressed (c) Although still reporting high levels of satisfaction, more complaints and irritations offered	Written questionnaires inexpensive and easy to administer, but responses may be ambiguous – they need to be interpreted in light of respondents' frames of reference and value systems Interaction yields more information but is time-consuming and costly

continued

Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference **Country** **Setting**	**Objective** **Context** **Design**	**Sample** **Data collection** **Analysis**	**Measurement of satisfaction**	**Results**	**Conclusions**
Hall, 1995[158] USA In hospital	Telephone vs mail, with particular reference to acquiescence bias Pragmatic Experimental A: telephone B: mail (no follow-up)	All discharges, alternately assigned to A or B within 10 days of discharge A: *n* = 200 (48.7% response rate) B: *n* = 206 (41.1% response rate) Structured questionnaire *t*-tests	14 sections, 72 items Range of response modes	Telephone survey: significantly less criticism Mail survey: greater range of responses	Telephone: acquiescence bias, but mail survey may suffer response/selectivity bias (e.g. dissatisfied people more motivated to participate)
Harpole *et al.*, 1996[146] USA Hospital ambulatory care	To assess impact on dissatisfaction of method of data collection after controlling for patients' sociodemographic and clinic features Empirical Experimental A: mail (1 reminder) B: on site (could be mailed back)	All patients attending 5 general medicine and multi-specialty clinics on 2 × 2-day periods A: *n* = 606, of which 42% responded B: *n* = 602 of which 69% responded. Structured questionnaire Chi-squared *t*-test Logistic regression	23-item, visit-specific questionnaire, specially designed for study 3 domains of service quality: 1) Courtesy of staff 2) Timeliness of care 3) Communication with provider 5-point scales	Low dissatisfaction: Courtesy 9% Timeliness 6% Communication 7% Mail respondents significantly more dissatisfied Dissatisfaction significantly related to patient and clinic factors	Mail: lower response, more dissatisfaction; may reflect social pressures in clinic and mail response bias (i.e. dissatisfied people more likely to participate)
Hayes and Baker, 1998[181] USA Hospital outpatient	To compare reliability and validity of English and Spanish versions of a patient satisfaction measure Empirical Experimental A: Spanish B: English	Interview 1 week after emergency room consultation 852 patients eligible 77% of English speakers and 91% of Spanish speakers participated (50% of Spanish respondents subsequently disqualified because they had used an interpreter) Structured questionnaire Chi-squared Wilcoxon rank sum test	Interpersonal Aspects of Care Examiner Scale: 8 items, rated on 5-point scale to assess satisfaction with healthcare workers Translation: back translation, with centring used to develop Spanish version	Spanish respondents used the fair–poor categories less, and good categories more than English speakers ($p < 0.05$) No differences in use of very good and excellent categories Significant differences in satisfaction levels were found depending on how scaled responses were dichotomised	Potential problems arise when investigations collapse responses into dichotomous variables, so non-parametric tests of response distributions should be used

continued

Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Hays and Ware, 1987[174] USA Healthcare in general	To test hypothesis that ratings of personal medical care are consistently higher than ratings of medical care in general as a result of socially desirable response set bias (SDRS) Empirical Observational	Rand Health Insurance Experiment: n = 3918 adults; 1 year after enrolment; measured patient satisfaction and SDRS (from Comrey personality scale) Correlation	2 items on 43-item Patient Satisfaction Questionnaire differed only in referent Respondents asked to rate their level of agreement: 1) There are things about the medical care I receive that could be better (personal referent) 2) Most people receive medical care that could be better (general referent)	Satisfaction scores higher on personal referent ($p < 0.001$) Significant correlation between SDRS and ratings for personal referent item ($p < 0.01$) but not for general referent item	Personal referent items more biased for SDRS than general referent
Jackson *et al.*, 2001[150] USA Ambulatory care	Relationship between satisfaction immediately after visit and 2 weeks and 3 months later Empirical Observational	500 patients of 38 doctors agreed to participate Refusers (n = 28) similar to participants in age, sex, race, symptoms All patients had physical symptoms Chi-squared Multivariate analysis	After consultation: unmet expectations and Visit Specific Questionnaire completed in clinic Mailed questionnaire at 2 weeks and 3 months: global satisfaction, symptom outcomes, health-related quality of life	Proportion fully satisfied increased over time: 52% immediately after visit, 59% at 2 weeks, 63% at 3 months Satisfaction immediately after visit predicted by aspects of doctor–patient communication and information giving ($p < 0.001$)	Temporally varying components of patient satisfaction suggest attention should be paid to timeframe when questions about satisfaction are asked To measure satisfaction with specific physician behaviour, questions should be asked immediately after the visit Satisfaction outside the context of an immediate visit may be a proxy for symptom or functional status improvement, rather than a measure of satisfaction Study suggests 2 separate models for patient satisfaction: 1) Immediate post-visit satisfaction = age + patient's expectations + functioning + doctor–patient relationship 2) 2-week/3-month satisfaction = age + patient's expectations + functioning + symptom improvement

continued

Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference **Country** **Setting**	**Objective** **Context** **Design**	**Sample** **Data collection** **Analysis**	**Measurement of satisfaction**	**Results**	**Conclusions**
Jones *et al.*, 1993[151] UK (Scotland) Hospital outpatients	To compare three methods of measuring consumer opinion Pragmatic (to avoid missed appointments) Experimental A) Questionnaire B) Comment card C) Personal interview	Consecutive follow-up patients: A) *n* = 200 B) *n* = 200 C) *n* = 50 Descriptive statistics Correlation	A) 18 statements and 1 open-ended question to complete while awaiting appointment B) Headed paper asking for comments and prepaid envelope to mail in C) Semi-open interview	Response rates: A) 100% B) 23% C) 96% All three methods produced similar frequency ranking of problems Positive comments to open-ended questions: A) 35% B) 44% C) 78% Younger, higher social classes had lower satisfaction in all studies	Comment cards cheaper Impersonal methods focus on negative aspects Mail-in gives lower response Combination of methods allows balanced view of consumer opinion As performance indicator to compare clinics, closed rating scales approach easier
Kinnersley *et al.*, 1996[152] UK Family practice	Compare scores of patients completing questionnaires immediately after consultation in GP surgery with those completing questionnaire at home Empirical Experimental	316 patients from 8 practices given instruments on 2 different occasions: 1) For in-surgery response 2) For mailed response 63% (*n* = 198) completed and returned questionnaires: In-surgery response rate 67% Home response rate 54% Correlation	Medical Interview Satisfaction Scale and Consultation Satisfaction Scale bound as single instrument with order of presentation determined at random	No significant differences between responders and non-responders with respect to age and sex Older patients reported higher levels of satisfaction that younger patients Distributions of satisfaction similar on both scales Lower levels of satisfaction expressed when patients completed questionnaire at home, and response rate lower	Study does not identify one particular scale as psychometrically superior

continued

Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Kloetzel *et al.*, 1998[178] Brazil Ambulatory care	To compare 4 ways of measuring satisfaction with last appointment: 1) Icons depicting happy, neutral and sad faces 2) Numerical scores 0–10 3) Agree–disagree response to negatively worded questions (e.g. "the doctor did not inspire me with confidence") 4) Agree–disagree response to positively worded questions (e.g. "the doctor inspired me with confidence")	1) n = 135 (whole sample); home interview up to 10 days after consultation 2) n = 36 from sample 3) n = 74 from sample 4) n = 61 (members of sample not completing third group of questions) Descriptive statistics Chi-squared	Respondents asked about same 12 aspects of consultation for each method: access, wait time at appointment, warmth of reception staff and doctor, attention received, clinical care, confidence in doctor and medication; explanations about illness and treatment, satisfaction with treatment plan, overall satisfaction	No significant differences between methods Significant differences in responses to negatively and positively worded versions of same question (p = 0.001)	Patient satisfaction measures are useful objective measures that can be used to reformulate the delivery of healthcare
Lasek *et al.*, 1997[153] USA In hospital	To assess effect of non-response bias on satisfaction ratings Empirical Observational	Mailed questionnaire to random sample of patients from 29 hospitals, 8–12 weeks after discharge; n = 16,267, of which 54% (n = 8802) responded Telephone interview with non-respondents sought after 8 weeks; n = 1011, of which 60% (n = 602) secured Structured questionnaire Chi-squared Analysis of variance Multiple regression	Patient Viewpoint Survey from Patient Judgement of Hospital Quality 9 domains: Mail 41 items Telephone 25 items 5-point scales	Respondents to mailed questionnaire were younger, and more likely to be men and unmarried, than non-respondents (p < 0.001) Mail non-respondents: longer length of stay and more likely to have medical diagnosis than respondents (p < 0.001) Telephone responders more likely to have shorter length of stay, and be unmarried, non-white and have lower education, than mail respondents (p < 0.001) Negligible differences in satisfaction between mail responders and telephone responders	Impact of non-response bias appears small, although 40% of non-responders were not covered and differences in survey timing and mode of administration may have affected findings

continued

Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Levin and Devereux, 1986[170] Canada In hospital	To gain feedback from patients, after discharge, concerning inpatient stay Pragmatic Observational	10% of discharges from rehabilitation unit over 3-month period, randomly selected *n* = 50 52% of sample were >65 years of age 62% of sample were women Descriptive statistics	Questionnaire interview at home (10 with proxies) 18 scaled questions; 3 open-ended questions	84% satisfaction Interview format and open-ended questions resulted in: high response rate, reaching people unable to respond to self-completion questionnaire, enhanced quality of feedback (more detailed and descriptive) from open-ended questions No differences between patient and proxy responses	Although more expensive, face-to-face interviews produce more reliable feedback
Lewis and Williamson, 1995[163] UK General practice	Compares 2 types of data: quantitative (numerical) from questionnaire survey, and quantitative (narrative) from interviews, with respect to: Validity of data (extent that it reflects patients' concerns) Usefulness to practitioners and managers Empirical Observational	3 general practices (of 6 invited to participate: 2 declined) 30 interviews and 100 questionnaires per practice, completed in waiting room Questionnaires and interviews *t*-tests	Survey: Baker's Consultation Satisfaction Questionnaire, and Surgery Satisfaction Questionnaire Interviews: critical incident technique	Critical incident method presented more favourable picture Questionnaires are standardised and allow comparisons	Both methods favourably received, but have different practical implications

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Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Marshall *et al.*, 1993[175] USA Healthcare in general Ambulatory care	To explore the relationships: 1) Between each domain summary and a global measure 2) Between (direct) summary of domain-specific scores and a single (indirect) global satisfaction measure 3) Between a global visit-specific satisfaction measure and global satisfaction with medical care over an extended period Empirical Observational	n = 2226; part of Medical Outcomes Study Visit-specific measure completed at screening Other measures collected by mailed questionnaire 3 months later Structural equation modelling	At visit: global satisfaction measure After 3 months: Patient Satisfaction Questionnaire, 50 items with 6 factors: 1) Interpersonal manner 2) Communication 3) Technical skill 4) Time with doctor 5) Finance 6) Access to care Also a global measure of general satisfaction	6 factor scores correlate significantly with global satisfaction measure ($p < 0.001$; 0.95, 0.97, 0.98, 0.90, 0.4, 0.83 respectively) Summary score across factors correlates significantly with global satisfaction (0.93, $p < 0.001$) Global visit-specific measure correlates significantly with 3-month global satisfaction (0.35, $p < 0.001$)	Data consistent with hierarchical model: satisfaction can be simultaneously represented by overarching domain (useful to compare providers) and a set of discrete dimensions (useful to monitor quality of aspects of service delivery) These two methods of measuring general satisfaction are highly correlated Visit-specific satisfaction significantly but modestly correlated with general satisfaction and needs to be measured separately
Meredith, 1993[172] UK In hospital	To investigate how communication and information problems are rationalised and reported by patients Empirical Observational	Pilot study: n = 30 interviews after general surgery, in hospital n = 57 interviews with surgeons, hospital doctors and nurses Qualitative	Interviews using in-depth questioning from bank of 100 questions Audio-tapes, transcribed and analysed	It is questioned whether patients rationalise their difficulties in terms of "dissatisfaction" in the way required by survey research	Qualitative study used to develop self-completion questionnaire for subsequent validity testing against qualitative results
Meredith and Wood, 1996[171] UK In hospital	To compare the results of quantitative and qualitative methods of collecting data about patient satisfaction with communication Empirical Experimental A) Qualitative B) Quantitative	A) n = 30, pilot study B) 6 hospitals, n = 789, of which 89% responded Chi-squared	74-item questionnaire covering all aspects of surgical experience from outpatient visit, admission, surgery, discharge	High degree of confirmation between interview and questionnaire approaches in most areas Interviews enable emphasis and detail not possible with questionnaire	Methods are complementary: one acts as check on meaning attached to other Interviews focus on the force of what people are saying

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Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference **Country** **Setting**	**Objective** **Context** **Design**	**Sample** **Data collection** **Analysis**	**Measurement of satisfaction**	**Results**	**Conclusions**
Nelson *et al.*, 1990[154] USA In hospital	To investigate factors influencing response rate, including patient demographics, method of data collection, type of incentive Empirical Experimental	Pilot study: n = 2113 recently discharged patients from 10 hospitals	Patient Judgment of Hospital Quality	Respondents were younger ($p < 0.05$) and more likely to be women ($p < 0.05$) than non-respondents Crude response rates: mail 67%; telephone 62%; overall 65% Adjusted response rates after exclusions: 72%, 70%, 71% Mail distribution involved telephone follow-up for non-respondents, but at a marginal cost of $94 per additional completed questionnaire No differences between responses of those offered no incentive and those offered a Susan Anthony dollar Patients who were mailed a pen had 10% greater response than no-incentive patients (63–53%, $p < 0.05$) Cost per additional completed questionnaire $10	Variable response rates across hospitals, but no consistent mode of administration effects
Neumann and Neumann, 1984[176] Israel Healthcare in general	To test predictive powers of 3 models for deriving general assessment of medical care from different facets of satisfaction with health services: A) Traditional – linear, compensatory B) Conjunctive – high score on one facet will not compensate for a low score, and satisfaction on multiple facets is required to increase overall satisfaction C) Disjunctive – high satisfaction on one facet is enough to outweigh low satisfaction on all other dimensions Empirical Observational	Random sample of adults registered at public primary care clinic; n = 225 Home interview Structured questionnaire Multiple regression	1 global item and 8 specific items regarding doctor–patient relationship: attentiveness (2 items), thoroughness, time allowed, wait, information, referral, access	Most correlations between general score and each facet significant ($p < 0.05$) R^2 when regress overall satisfaction on 8 facets: A) Men: 0.39 A) Women: 0.40 B) Men 0.34 B) Women: 0.42 C) Men: 0.34 C) Women: 0.31 $p < 0.001$ in all cases	Non-linear, non-compensating models predict overall satisfaction as well as linear compensating models

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Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Osterweis and Howell, 1979[164] USA Ambulatory care	To determine whether a newly developed questionnaire would yield comparable results when administered by mail, telephone and on site, or whether method of administration would influence results Pragmatic Experimental	3 practices: health maintenance organisation, prepaid group practice, medical school-based fee-for-service clinic Independent random sampling at each test site for mail and telephone surveys: n = 250, n = 250, n = 175 On-site samples: n = 200, n = 200, n = 150 Chi squared	Questionnaire used direct questions, not indirect measures, of: Perceived accessibility of care Acceptability of system function, medical care and costs 12 aspects probed	Response rates: Mail 38%, 46%, 54% Telephone 32%, 50%, 50% Difference between mail and telephone not significant Non-respondents were newer enrolees ($p < 0.10$) On-site surveys had higher proportions of recent enrolees ($p < 0.001$) Areas of dissatisfaction were the same regardless of how questionnaire was administered Amount of dissatisfaction expressed on site slightly lower, and may reflect over-representation of certain groups	Given consistently low telephone and mail response rates, on-site questionnaires are adequate, except for studying low utilisers
Parker and Kroboth, 1991[166] USA Hospital inpatients and outpatients	To describe practical problems of conducting a patient satisfaction survey, especially response rate Pragmatic Observational	Target of 640 responses (20 patients for each of 32 interns) for comparative study Descriptive statistics	Own 14-item instrument, piloted and validated	More than 90% of patients expressed willingness to participate, but: 42% of inpatients too ill to participate or were cognitively impaired, and a further 16% could not complete the questionnaire owing to comprehension problems 50% of outpatients failed to attend for an appointment, and a further 10% could not complete the questionnaire	Owing to response problems, results of surveys must be treated with caution
Rhee *et al.*, 1998[159] USA Emergency department	Telephone vs mail, with particular reference to response rate Pragmatic Experimental: A) Telephone (3 attempts) B) Mail (+ reminder)	8 patients per day randomly selected (× 90 days) and n = 360 assigned to each group Structured questionnaire Chi-squared Mann–Whitney U-test	Instrument development – own, covered: 1) Overall service 2) Nursing bedside and technical performance 3) Physician bedside and technical performance 5-point scale	No significant differences between groups, or in satisfaction between groups Telephone survey: 10% higher cost and higher response rate (41.4% compared with 19.7%, $p < 0.01$) Mail survey: lower response from uninsured people ($p < 0.01$)	Telephone: higher response, including uninsured, at higher cost

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Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference **Country** **Setting**	**Objective** **Context** **Design**	**Sample** **Data collection** **Analysis**	**Measurement of satisfaction**	**Results**	**Conclusions**
Ross *et al.*, 1995[179] USA Ambulatory care	To examine variability in satisfaction evaluation related to 7 different measures of patient satisfaction, and to explore effect of response bias on the results Empirical Observational	Veterans' Administration patients randomly selected for interview *n* = 308, of which 233 (84%) completed all 7 measures Mean age 62 yr Descriptive statistics Correlation	1) Global measure on 100 mm visual analogue scale Anchors: best/worst possible healthcare 2) Multidimensional measure based on 29-item, 6-dimension, Patient Satisfaction Questionnaire; 5-point scale 3) 2-item evaluation: quality and outcome of care 4) 6-item attitude measure of general satisfaction; 5-point Likert agree–disagree format 5) 4-item attitude measure of satisfaction with physician, using agree–disagree format 6) 4-item measure of behavioural intention: to return, to refer, to recommend, to follow doctor's recommendations 7) Willingess to pay	Favourable evaluations of care ranged from 63% to 82% for measures 1–6 Willingness to pay correlated poorly with other measures Correlations highest between measures with similar response formats Acquiescent response bias (respondent agreed with both of a pair of statements for which content the same but direction of statement reversed) detected in 48% of cases, reducing validity of multiple-item measures 4, 5 and 6 Highly acquiescent respondents were older, less well educated, with lower income, in poorer health More acquiescence on negatively than positively worded items means use of balanced scales is not a solution	Different measures produce different results Best measures in terms of distribution of responses and resistance to acquiescence bias were 1, 2 and 3
Savage and Armstrong, 1990[169] UK General practice	Effect of either directing or sharing style of consultation on patient satisfaction: 1) Immediately after consultation (89% response) 2) Mail back 1 week later (58% response) Empirical Experimental	*n* = 359, randomly selected from 1 group practice 9 patients refused or were excluded Completion rate 89% at time 1 and 58% at time 2 Wilcoxon paired tests	Questionnaire covered: GP's understanding of problems Explanation received If thought that consultation had helped	Patients with physical problems more satisfied with directing style of consultation ($p < 0.02$) No significant differences in satisfaction for patients with chronic and psychological problems and those receiving longer consultations Feeling of being helped declined significantly 1 week later ($p < 0.001$)	Decline over 1 week in feeling of being helped greater than difference between styles

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Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Senf and Weiss, 1991[147] USA Medical care in general	To investigate the effect of the referent of items on reported satisfaction, and its relationship with intentions to change and actual changes in plan Pragmatic Observational	University employees sent satisfaction questionnaire 10 weeks before open enrolment *n* = 8450, of which 59.3% responded Respondents contacted after open enrolment to see if that had changed their plan; 78.9% responded Factor analysis Correlation	3 dimensions: 1) Medical care in general (18 items) 2) Personal medical care (28 items) 3) Most recent medical care encounter 5-point scales 3 items common to personal and general dimensions	Of items common to general and personal dimensions, general referent elicited more dissatisfaction ($p < 0.001$) Personal dimensions best predictor of intention to change/actual change in behaviour (measure with general referent not significant)	Personal/direct referent scales may be influenced by individuals' tendency to respond in a socially acceptable way and may therefore be less reflective of actual satisfaction
Sitzia and Wood, 1998[160] USA 38% UK 29% Other Europe 16% Canada 7% Australia/New Zealand 6% Various settings	To investigate: Extent of non-response bias Factors contributing to response rates Empirical Observational	Search of 5 health databases in 1994 (peak year for satisfaction-related studies) identified 200 English language articles with 210 data sets Analysis of variance Chi-squared	Various	64% self-report questionnaire 26% interview questionnaire 10% unstructured interview 47.6% of studies reported a response rate 25% discussed issue of non-response bias Overall mean response rate 72.1% Face-to-face and telephone recruitment or data collection had significantly higher response rate (>76%) than mail (67%) ($p < 0.05$) No association between response rate and length or type of instrument	Patient satisfaction studies generally show poor awareness of importance of methodological issues relevant to the response rate Incomplete response casts doubts on generalisability of findings
Thomas *et al.*, 1996[156] UK In hospital	To investigate usefulness of open-ended qualitative questions in structured quantitative surveys Also compares responses from patients completing questionnaire in hospital and from those recently discharged Empirical Observational	Patients in hospital (*n* = 397) and recently discharged (*n* = 394), with response rates of 70% (*n* = 314) and 64% (*n* = 252) respectively Qualitative Chi-squared	Newcastle Satisfaction with Nursing Scale: 1) Experiences of nursing care 2) Satisfaction with nursing care 3) Demographic information	42% of returned questionnaires included qualitative comments Women more likely to answer open-ended questions than men ($p = 0.02$), but no differences with respect to age or education Younger patients more likely to comment on perceived problems Patients completing questionnaire at home were significantly more critical of some aspects of hospital experience than those completing it in hospital	Overall, a general question asking patients for comments generates bland and general answers Specific comments on nursing services are rare

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Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Thomas *et al.*, 1995[173] UK In hospital	To compare focus group and individual interview methods with respect to: Range of issues raised Depth of data generated Aim to assess relative efficacy of 2 methods of generating concepts relevant to research Empirical Observational	1) Patients nearing discharge recruited from 17 medical and surgical wards in 5 hospitals (n = 101) 2) Recently discharged patients from 6 family practices (n = 49) Focus groups (of 3–4 people) and individual interviews were organised from each group Data collection for inpatients took place in hospital Discharge patient focus groups occurred on family practice premises, and interviews occurred in homes Tape-recordings were transcribed verbatim and content lists created Qualitative Chi-squared	Focus groups and interviews using a topic guide (on nursing care) for both types of interview	Some factors more likely to be raised in focus groups than in interviews; no differences in depth of data generated	Concepts can be generated with fewer focus groups than individual interviews Focus groups are not always practical in a hospital setting
Thomas *et al.*, 1996[155] UK In hospital	To assess whether the place where questionnaire is given affects response rates and expressed levels of satisfaction Investigation of this issue was subsidiary to tests of validity of the questionnaire Empirical Experimental	2 medical and 2 surgical units selected at random from each of 5 hospitals in northeast England (n = 20) Patients recruited on day of discharge and asked to complete questionnaire before leaving hospital Subsample (n = 102) sent second copy at home 20 days after discharge *t*-tests	Newcastle Satisfaction with Nursing Care Scale, 3 sections: 1) Experiences of nursing care 2) Satisfaction with nursing care 3) Demographic information	92% of eligible patients agreed to participate (n = 1920), of which 81% responded Non-respondents were more likely to be women and older Response rates varied between wards and hospitals 74 patients returned both questionnaires No significant differences in either experience or satisfaction questionnaires, possibly reflecting small sample size	Questionnaires can be given before patients leave hospital or at home 3 weeks later without affecting scores

continued

Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference Country Setting	Objective Context Design	Sample Data collection Analysis	Measurement of satisfaction	Results	Conclusions
Trandal-Korenchuk, 1997[165] USA Family practice	To compare 4 methods of data collection: 1) Receptionist distributed at check-in 2) Student distributed at check-in 3) Mail 4) Telephone Empirical Experimental	Systematically selected sample of 1840 patients at Nalle Clinic Analysis of variance	3 patient surveys covering responsibility, accessibility, patient satisfaction rating, provider recommendation, and demographic data: 1) Health Outcomes Institute questionnaire 2) Nalle Clinic survey 3) A commercially marketed survey	925 surveys completed (50%): Health Outcomes Institute questionnaires scored higher on reliability and validity than the Nalle Clinic survey and the commercially marketed survey	Mode of administration did not significantly affect patient satisfaction indicators
Walker and Restuccia, 1984[157] USA In hospital	Telephone vs mail Pragmatic Experimental: A) Telephone B) Mail and telephone follow-up	Systematic random sample 7 days after discharge A) n = 355 (67.6% response rate) B) n = 172 (58.1% response rate) Structured questionnaire Chi-squared	7 areas, 70 items: Admission Room Food Nursing care Medical care Other personnel Discharge 5-point scales	No significant differences between respondents and non-respondents in age, gender, length of stay Telephone survey: 20% higher cost Higher response rate Non-respondents more likely to be non-white, unmarried ($p < 0.05$) More responses in most positive category ($p < 0.05$) More use of proxies ($p < 0.05$) Proxies (both methods) more dissatisfied than patients ($p < 0.05$)	Telephone: higher response rate but more chance of biased responses

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Table summarising empirical studies that investigated methodological issues in the measurement of satisfaction contd

Reference **Country** **Setting**	**Objective** **Context** **Design**	**Sample** **Data collection** **Analysis**	**Measurement of satisfaction**	**Results**	**Conclusions**
Ware, 1978[180] USA Healthcare in general	Acquiescent response set: the tendency to agree with statements of opinion regardless of content: Occurrence Effect on satisfaction ratings (acquiescent response set bias) Correlation with socio-economic characteristics Empirical Observational	3 previous independent studies, n = 1280 Structured questionnaire Descriptive statistics Correlation	Patient Satisfaction Questionnaire: statements of opinion with 5 response choices ranging from strongly agree to strongly disagree Acquiescent response set bias occurs when respondent agrees with 2 statements defining opposite ends of same satisfaction continuum 11 matched pairs available	4–10% of participants made ≥4 illogical responses 40–60% made ≥1 illogical response: Acquiescent response set resulted in upward bias in satisfaction scores computed from favourably worded items, and downward bias in scores from unfavourably worded items ($p < 0.01$) Biases greater in lower income and education groups, but unrelated to gender No significant acquiescent response set in balanced scales (equal favourably and unfavourably worded items)	Acquiescent response set is a source of bias, especially in studies of disadvantaged populations; it can be reduced by using balanced scales
Ware and Hays, 1988[183] USA Specific medical encounters	To compare: S6 (6-point scales: very satisfied to very dissatisfied), and E5 (5-point scales: excellent to poor) on basis of: Response variability Reliability Validity Empirical Experimental	Random assignment of questionnaires to outpatients in fee-for-service (n = 136) and prepaid (n = 363) systems of care Structured questionnaire t-tests Coefficients of variation, correlation	Visit Specific Questionnaire experimentally manipulated E5 and S6 questions	Both scales yielded internal consistency reliability of 0.9 for multi-item scales E5 showed more response variability and better predicted behavioural intentions (to return, recommend and comply) than S6 ($p < 0.05$)	Order of administration effects: both formats yielded less favourable ratings when administered after other items (significant for S6)

Appendix 13

Empirical studies investigating the determinants of satisfaction

(Main reference list numbers (see pp. 79–90) are given after each citation)

Reference list

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Table summarising empirical studies that investigated the determinants of satisfaction

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Abramowitz *et al.*, 1987[193] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Seeks to identify which of a variety of factors contribute most to overall satisfaction with hospitalisation and role of confirmation of expectations (measured on 5-point scale) ***Context:*** Pragmatic study to test newly developed instrument as management (marketing) tool Instrument design based on causal model and factor analysis ***Design:*** Observational	***Sample/data collection:*** Random sample (9%) of patients discharged from surgery, obstetrics/gynaecology, general medical and paediatric departments of a New York hospital over 3-month period n = 841, of which 91.3% responded, giving sample of 767 Telephone survey ***Measurement of satisfaction:*** 37 items (direct and indirect) across 10 sets of services; each measured on 4-point scale: admission, attending physicians, house staff, nurses, nurses' aides, housekeeping, food, escort, other staff, miscellaneous Three global measures: 1) Overall satisfaction (4-point scale) 2) Intention to return if necessary (yes/no) 3) Intention to recommend hospital to others (5-point scale) Own instrument ***Method of analysis:*** Quantitative	***Results:*** Factor analysis identified 12 factors accounting for 68.6% of variance 10 had construct validity: expectations; explanations from nurses; and satisfaction with: staff, house staff, medical care, nurses' aides, noise, food, housekeeping, escort services 24% of variance in overall satisfaction accounted for by satisfaction with nursing service and expectations 34% of variance in intent to recommend accounted for by overall satisfaction, satisfaction with nursing staff and expectations Intent to return not related to other factors Standardised regression beta coefficients, representing strength of pathways between: 1) Expectations about hospital care and intent to recommend/overall satisfaction: 0.18/0.32 2) Satisfaction with nursing services and intent to recommend/overall satisfaction: 0.22/0.29 ***Conclusions:*** Patient expectations and satisfaction with nursing care are important determinants of satisfaction with hospital care
Al-Bashir and Armstrong, 1991[232] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** To identify the priorities of different groups of patients: women aged 16–44 yr; patients aged over 65 yr; people scoring their health poor/not good; people scoring their health excellent/good ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 760 patients in 4 general practices (consecutive patients) 62 people declined (not significantly different from participants) ***Measurement of satisfaction:*** Indirect: respondents evaluated the relative importance of 20 statements describing different aspects of general practice Features evaluated derived from audio-taped open-ended interviews with stratified sample of 20 people Own instrument ***Method of analysis:*** Qualitative and quantitative	***Results:*** People rating their health not good more likely to value early second opinions ($p < 0.01$) People reporting good health preferred GPs that provide regular check-ups ($p < 0.01$), prescribe inexpensive drugs ($p < 0.05$) Age affected preferences: older people preferred a doctor who allows an early second opinion ($p < 0.01$), protects their relationship with the hospital ($p < 0.05$), is kind and attentive ($p < 0.01$), has friendly staff ($p < 0.05$), and visits elderly people regularly ($p < 0.01$) Younger people prefer an emphasis on vaccinations ($p< 0.001$), and a GP who provides regular check-ups for healthy people ($p < 0.05$) ***Conclusions:*** Vulnerable groups have some different preferences from younger, healthier members of the population

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Anderson and Zimmerman, 19932[87] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Impact of: 1) Patients' perceptions of their relationship with their physicians (authoritarian – guidance/physician controlled; patient–physician partnership; independent decision-making 2) Physicians' perceptions of that relationship (same categories as patients) 3) Demographic and treatment factors on patient satisfaction ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 134 patient–physician interactions audio-taped to determine length of consultation at Veterans' Affairs diabetes clinic Mean age 64.3 yr 12 physicians ***Measurement of satisfaction:*** Follow-up telephone interview: 9-item measure, 6-point Likert scale, indirectly to measure satisfaction with care provided by physician (specific to diabetes) Own questionnaire ***Method of analysis:*** Quantitative	***Results:*** Physicians in study were representative with respect to age, sex, years in practice and beliefs Patients were representative with respect to age, education, ethnicity, marital status Only 3 encounters where physician described relationship as independent Patients/physicians described 74%/67% of encounters as partnerships Agreement between patient and physician pairs no better than by chance Better educated patients more likely to agree with physicians ($p < 0.001$) Patient education level significantly related to satisfaction ($p < 0.04$): less well educated more satisfied Age, race, disease state and years of practice of doctor were not significant Encounters described by physicians as partnerships lasted longer ($p < 0.001$), but time spent was not related to satisfaction Physicians who had been in practice longer were more likely to describe encounters as partnerships ($p < 0.02$) ***Conclusions:*** Practical implications for chronic disease management include: increase attention to physicians' perceptions of their relationship with patients, and expose new physicians to partnership types of relationship

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Annandale and Hunt, 1998[222] ***Country:*** UK (Scotland) ***Setting:*** Healthcare in general	***Determinants:*** 1) The nature of felt disagreements 2) The relationship between felt disagreement and actions 3) Whether relationships between felt disagreement and actions are socially patterned ***Context:*** Empirical study explores dissatisfaction that has not been formed into formal actions, such as complaints, litigation Why do some people with grievances act on them while others do not? ***Design:*** Observational	***Sample/data collection:*** Sample taken from a longitudinal study of 3 age cohorts in West Scotland Starting ages 15, 35 and 55 yr at 1997/98 baseline 1000 participants per cohort Accounts of felt disagreement requested only from 35-yr-old group; participants (n = 985) were interviewed in their own homes by nurse interviewers who also collected socio-economic data and assessed health status ***Measurement of satisfaction:*** Open-ended Respondents were asked if they had ever felt disagreement about a treatment or diagnosis from a doctor for themselves or a family member; if so, the details of each disagreement were recorded ***Method of analysis:*** Qualitative	***Results:*** 86% were very or quite satisfied with their GP 33.7% reported a disagreement 57% of reported disagreements referred to the respondents' own healthcare; 29% to that of a child or other relative 87% of disagreements were with a GP There were no differences in the likelihood of reporting a disagreement by gender, age at which left school, housing tenure, employment status, income, or private insurance holding Characteristics associated with reporting a disagreement were: member of a non-manual household ($p < 0.001$); perceiving oneself as having a greater vulnerability to illness ($p < 0.01$); worrying more about one's own ($p < 0.01$) or family's ($p < 0.05$) health; having a long-standing illness ($p < 0.001$); being relatively dissatisfied with a GP ($p < 0.001$) Those reporting a disagreement had more GP consultations ($p < 0.001$) 75% of the disagreements centred on diagnosis, treatments or interventions 25% related to doctor's style or manner in dealing with the patient 78% acted on the disagreement, 44% sought a second opinion, 9% changed doctor, 35% verbally challenged the doctor Only 4 of 307 complaints (1.3%) went to formal action; actions taken were not related to social class or gender The tendency to take no action was most likely when the problem was the doctor's interactional style A second opinion was sought in more than half the cases where the problem was diagnosis or treatment other than drugs 70% discontinued treatment when the problem was prescribed drugs ***Conclusions:*** There is a complex relationship between perceptions of disagreements, action taken and sociodemographic factors

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Avis *et al.*, 1995[195] ***Country:*** UK ***Setting:*** Hospital outpatients	***Determinants:*** Patients' pre-consultation expectations and post-consultation experiences of satisfaction and dissatisfaction ***Context:*** Empirical study to collect information relevant to service delivery development from patient perspective Authors see a danger of relying too heavily on prestructured satisfaction surveys in that they encourage patients to respond passively and superficially to their care, rather than promoting an involvement in evaluation that would challenge the *status quo* ***Design:*** Observational	***Sample/data collection:*** 51 (from population of 77) new angina referrals interviewed before and after consultation 30 (from population of 48) new obstructive airways disease referrals interviewed before and after consultation ***Measurement of satisfaction:*** Semi-structured interviews ***Method of analysis:*** Qualitative	***Results:*** In general, patients said that the concept of satisfaction was meaningful with reference to the outpatient service they had received: 85% satisfied; 78% said that it met their expectations; 72% said that they got all that they wanted from the consultation 1 in 3 patients expressed disappointments Factors that influenced patients' judgements of satisfaction or dissatisfaction were mainly related to humanity, efficiency, ease of obtaining information, and continuity of communication (with GPs and concerning subsequent appointments) ***Conclusions:*** The study demonstrated that unstructured approaches to service evaluation can be employed to develop services that genuinely take account of users' views
Avis *et al.*, 1997[116] ***Country:*** UK ***Setting:*** Hospital outpatient	***Determinants:*** 1) Confounding factors measured at baseline: Sociodemographics Wait time for appointment Knowledge of diagnosis Restrictions in activities of daily living 2) Preconsultation; expectations 3) Consultation features observed and analysed ***Context:*** Tests theoretical model that suggests patients' prior beliefs, experiences and knowledge influence their judgement about satisfaction ***Design:*** Observational	***Sample/data collection:*** *n* = 89 patients at first consultation in cardiology and respiratory medicine outpatient clinics ***Measurement of satisfaction:*** Interview immediately after consultation: questionnaire, 7 questions (1 global) Medical Interview Satisfaction Scale, 3 dimensions: Cognitive Affective Behavioural Indirect measures ***Method of analysis:*** Quantitative	***Results:*** Expectations not always well formulated: wanted new treatment, diagnosis, reassurance, advice Deference to doctor and feared worst Consultation: 33% asked questions spontaneously Immediate post-consultation relief and high satisfaction (85%) No correlation between satisfaction and gender, activities of daily living, knowledge; also mismatch between expectations met and expressions of satisfaction, partly accounted for because some patients had unexpected outcomes (e.g. tests) Patients unwilling to make negative comments because they depend on the healthcare system and have little control over it Most disappointment with information exchange Later interviews enabled an evaluation of care (at follow-up appointment and 4–6 months after consultation at home): 33% satisfied, 33% waiting to see what would happen, 33% unsatisfied because not clear what was happening (care evaluation related to individual situations) ***Conclusions:*** Expectations provide limited understanding of the way patients evaluate care Satisfaction is not necessarily because expectations have been met The way care is evaluated alters over time

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Baker and Streatfield, 1995[262] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Characteristics of general practice: total list size, number, age and sex of practice partners, training status, fund-holding status, presence of a practice manager and whether there was a personal list system ***Context:*** Empirical study explores the features giving rise to patient satisfaction in the context of the changing nature of general practice ***Design:*** Observational	***Sample/data collection:*** 220 patients in each of 89 general practices (16,015 responses) Controlled multi-centre survey through distribution of Surgery Satisfaction Questionnaires, which included questions about age and sex of respondents ***Measurement of satisfaction:*** Surgery Satisfaction Questionnaire – 26 questions or statements: strongly agree–strongly disagree 5-point scale Six main issues addressed: general satisfaction, accessibility (ease of getting to surgery), availability (appointments and telephone service), continuity of care (seeing same GP), medical care (careful doctors), premises (comfortable, up-to-date) ***Method of analysis:*** Quantitative	***Results:*** 82% response rate 1) Increasing total list size of patients registered with practice associated with decreasing levels of general satisfaction and decreased satisfaction with accessibility, availability, continuity of care, medical care ($p < 0.001$) and premises ($p < 0.05$) 2) Presence of personal list system associated with increased levels of general satisfaction and increased satisfaction with accessibility, availability, continuity of care and medical care ($p < 0.01$) 3) Training practices associated with decreased levels of general satisfaction and decreased satisfaction with availability and continuity of care ($p < 0.05$) 4) Satisfaction with medical care higher with older GPs ($p < 0.05$) ***Conclusions:*** Most important variables influencing satisfaction were total list size and personal list system Practice organisation should be reviewed to ensure trend towards larger practices that provide a wider range of services does not lead to a decline in patient satisfaction Practices should have personal list systems and consider creation of several personal teams Study re-emphasises importance of personal care

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Baker, 1996[267] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Sought to identify the characteristics of patients, practices and GPs that influence satisfaction with consultations Questionnaires used to collect information about practice (total list size, training status, fund-holding status, presence of a personal list system) and about GPs (age, sex, training, number of patients booked per hour) ***Context:*** Empirical study to identify structural and organisational characteristics that have an impact on satisfaction with consultations ***Design:*** Observational	***Sample/data collection:*** 75 patients attending each of 126 GPs in 39 practices completed a Consultation Satisfaction Questionnaire after consultation, in respect of that consultation and sociodemographic details Mean response rate 76.6% ***Measurement of satisfaction:*** Own validated measure – 18 questions in 4 scales: general satisfaction, professional care (examination and information), depth of relationship (doctor's knowledge of patient), and perceived time Five responses: strongly agree–strongly disagree Scores summed and converted to a scale of 0–100: 0 = complete dissatisfaction, 100 = complete satisfaction ***Method of analysis:*** Quantitative	***Results:*** Practice characteristics associated with falls in satisfaction were increasing total list size, absence of a personal list system, and it being a training practice If more patients booked in the appointment system per hour, satisfaction with the perceived length of consultations fell Patient characteristics associated with falls in satisfaction were increased age and an increased proportion of male patients The only characteristic of GPs associated with lower levels of satisfaction was increasing age; the sex of the GP did not influence satisfaction All reported relationships significant at 5% level or lower Variables explained 25–33% of variations in satisfaction scores ***Conclusions:*** Findings give further support to the importance of a personal service in determining patient satisfaction in general practice GPs need to review the organisation of practices to ensure an acceptable balance between the requirements of modern clinical care and the wishes of patients

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Bartlett *et al.*, 1984[288] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Effect of physician interpersonal skills and teaching on: patient satisfaction, patient recall of medication, adherence to regimen Interpersonal skills assessed on validated 14-item scale (inter-rater reliability = 0.52) Teaching assessed by counting information and instruction using predesigned categories (inter-rater reliability = 0.71) ***Context:*** Empirical investigation of relationship between communication skills of the physician and patient satisfaction ***Design:*** Observational	***Sample/data collection:*** 63 patients (of 5 medical residents): video-tapes of resident sessions with patients, health records reviewed to determine medications prescribed Patients were telephoned 1–2 weeks after visit to assess satisfaction, recall of medication regimen, and adherence to regimen ***Measurement of satisfaction:*** Eight items assessing physicians' interpersonal skills, information sharing and quality of care on a 5-point Likert-type scale, from very satisfied to very dissatisfied Own instrument ***Method of analysis:*** Qualitative and quantitative	***Results:*** Satisfaction, recall and adherence all >78% Quality of physicians' interpersonal skills significantly correlated positively with satisfaction ($r = 0.24$, $p < 0.05$) but quantity of physicians' teaching statements negatively related to patient satisfaction ($r = 0.24$, $p > 0.06$) Secondary analysis revealed that all the effects of physicians' communication skills on patient adherence are mediated by patient satisfaction and recall ($p < 0.05$) Physician communication did not have a direct effect on adherence Better educated patients less satisfied ***Conclusions:*** Patient satisfaction may be pivotal to the care of patients with chronic illness because of its effect on adherence
Ben-Sira, 1990[294] ***Country:*** Israel ***Setting:*** Healthcare in general	***Determinants:*** The implications for the doctor–patient relationship and for patient satisfaction of unlimited universal entitlement for free healthcare provided by salaried physicians employed by centralised establishment-controlled organisations such as governments, compared with private fee-for-service physicians Investigates patients' trust/confidence in physicians, the latent goals of the care-providing organisation, and physician affective and instrumental behaviour ***Context:*** Hypothesis that affective behaviour generates mutual trust and promotes confidence ***Design:*** Observational	***Sample/data collection:*** A secondary analysis of data from a comprehensive study of primary care practitioners ($n = 134$), ex-patients ($n = 436$) and a randomly selected cross-sectional sample of adults ($n = 590$) in major urban areas Data were collected in respondents' homes over a 3-month period using closed-ended interview schedules ***Measurement of satisfaction:*** Measures were used from author's own earlier studies and applied to a recent doctor visit Two composite indices: the instrumental component (the medical treatment) and the affective component (time, interests, listening, explanations by doctor) Indirect measures of satisfaction ***Method of analysis:*** Quantitative	***Results:*** Patient survey showed: affiliation with (non-political) service orientated organisation characterised by trust in physician, satisfaction with treatment, appreciation of professional competence, and humane concern and commitment Members of Labour Sick Fund characterised by less trust, lower satisfaction, lower appreciation of technical skills and humaneness of doctors or their commitment ($p < 0.001$), and also recurrent visits Physicians' affective behaviour was prime determinant of trust (explains 11% of 23% of variation explained) and professional competence (explains 18% of 55% of variation explained) Physicians rated trust (75%) to be significantly less important than compliance (88%) and physician competence (85%) in patient recovery ***Conclusions:*** Type of prepaid care influences trust and hence satisfaction with physicians Likelihood of demonstrating affective behaviour confined to private practitioners exposed to commercial competition for clients Politically orientated sick fund affects nature of exchange relationships between physician and patient Physicians under cross-pressure between entitled patients and agency Burdened by large patient loads, they sacrificed affective behaviour (a time-consuming luxury) Self-perpetuating because workload heightened by repeat visits (vicious circle)

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Bertakis *et al.*, 1991[234] ***Country:*** USA, Canada ***Setting:*** Primary care	***Determinants:*** 1) Specific interviewing behaviour measured using audio-taped consultation and analysed using Roter Interaction Analysis System 2) Sociodemographic variables 3) Physician characteristics ***Context:*** Empirical study that seeks evidence of relationship between physician communication styles and satisfaction in established patients at various sites ***Design:*** Observational	***Sample/data collection:*** Chronic disease patients (n = 550) on return visits Mean age 60 yr Physicians (n = 127) at 11 different sites in North America ***Measurement of satisfaction:*** Questionnaire after visit: 43 items, measured on 5-point Likert scale (low scores indicated more satisfaction), reduced to 5 factors by principal components analysis: 1) Task-directed skills 2) Interpersonal skills 3) Attentiveness 4) Emotional support 5) Partnership 55% of variance in patient satisfaction accounted for by 5 factors Own instrument ***Method of analysis:*** Quantitative	***Results:*** Task-directed skills accounted for 31% of explained variation in global satisfaction Skewed distribution of satisfaction scales Interaction about biomedical topics negatively related to satisfaction ($p < 0.05$ to $p < 0.001$), while interaction on psychosocial issues positively related to satisfaction ($p < 0.026$ to $p < 0.001$) The more the physician talked relative to patients, the less satisfied patients were ($p < 0.002$) Physicians' dominance had a negative effect on patient satisfaction ($p < 0.012$) Friendliness/interest expressed by either party – positively related to patient satisfaction ($p < 0.06$ to $p < 0.008$) Older and white patients – greater satisfaction ($p < 0.025$ to $p < 0.002$) Health status, physician gender: no effect on satisfaction Multiple regression: communication and sociodemographic variables explained 10% of variance in patient satisfaction, and sociodemographic variables accounted for 2% of this variation ***Conclusions:*** Patients more satisfied by consultations that encouraged them to talk about psychosocial issues in atmosphere characterised by absence of physician domination, yet less than 10% of consultations on average were given over to psychosocial issues

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Bishop *et al.*, 1991[260] ***Country:*** UK ***Setting:*** Outpatient	***Determinants:*** Patients' views and expectations about outpatient visits, especially appointment systems, staff need for chaperoning, attitudes to medical students, continuity of care, information ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Self-selected patients in 2 studies: n = 90, n = 52 (re-attenders); completed questionnaires in clinic ***Measurement of satisfaction:*** Views sought on various features of outpatient system Own instrument ***Method of analysis:*** Quantitative	***Results:*** Patients wanted fixed appointment times, to see the same doctor on successive visits, staff to be formally dressed, and to have chaperones at an examination ***Conclusions:*** The efficient management of outpatient clinics is an essential part of hospital services and must be presented in an acceptable and professional manner
Brody *et al.*, 1989[208] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** 1) The types of interventions patients received 2) The congruence between patient desires for specific interventions and the interventions they perceived they received (interventions: technical – examination, ordering lab test, medications, non-pharmacological therapies; non-technical – education, negotiation, stress counselling) 3) Sociodemographic characteristics and type of insurance ***Context:*** Empirical analysis that includes test of a desires-fulfilment model of satisfaction ***Design:*** Observational	***Sample/data collection:*** 118 symptomatic patients from population sample of 130 (12 refused) Pre-visit measure of desires Post-visit measure of perceptions of what interventions had been received Questionnaire included list of technical and non-technical intervention categories ***Measurement of satisfaction:*** 10-item version of Ware's Patient Satisfaction Scale; 5 items relate to patients' perceptions about physicians' art of care (social and psychological) and 5 to physicians' technical quality of care (e.g. doctor should have been more thorough) Scored agreement (Likert 1–5 scale); 50 represented maximum satisfaction and 10 minimum satisfaction ***Method of analysis:*** Quantitative	***Results:*** Patients who indicated that they received non-technical interventions (education (p < 0.001), stress counselling (p < 0.05) and negotiation (p < 0.01)) were significantly more satisfied than those who did not Patient perceptions about receiving technical interventions were not related to patient satisfaction Association between satisfaction and education and negotiation independent of whether patient expressed desire for it Congruence between patients' desires and perceptions about interventions generally not related to satisfaction, except for medication (p < 0.001) ***Conclusions:*** A series of multiple regression analyses revealed that, in general, perceptions about non-technical aspects of care were better predictors of patient satisfaction than perceptions about technical interventions Possible reasons advanced: 1) Patients unable to comment on technical aspects 2) Uniformly high standards of technical care provided (80% of patients' desires were fulfilled for both types of care) 3) Non-technical aspects more personally meaningful

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Bruster *et al.*, 1994[251] ***Country:*** UK ***Setting:*** In hospital	***Determinants:*** Pre-admission procedures, admission, communication with staff, physical care, tests and operations, help from staff, pain management and discharge planning ***Context:*** Pragmatic study: focus on patients' experiences to help to identify problems ***Design:*** Observational	***Sample/data collection:*** 86% response rate 5150 randomly chosen NHS patients recently discharged from acute hospitals with 7200 beds in England (not maternity, paediatric, psychiatric and geriatric) Interview using a questionnaire that covered: 1) All aspects of in-hospital experience 2) Patients' responses to general questions about their degree of satisfaction ***Measurement of satisfaction:*** Own questionnaire, which probed patients' experiences ***Method of analysis:*** Quantitative	***Results:*** Problems reported: communication with staff (56% not been given written or printed information); pain management (33% of those suffering with pain were in pain all or most of the time); discharge planning (70% not told about warning signs and 62% not told when to resume normal activities) Hospitals failed to reach the standards of the Patient's Charter Answers to questions about patient satisfaction were highly positive Significantly more problems reported in: southwest and southeast of country, emergency rather than elective admissions, surgery patients, women, non-white patients, younger patients ($p < 0.001$) No significant differences between type of hospital, social class or income ***Conclusions:*** Survey highlighted several problems with treatments in NHS hospitals Asking patients direct questions about what happened rather than how satisfied they were with treatment can elucidate the problems that exist and so enable them to be solved
Bryson, 1996[352] ***Country:*** UK ***Setting:*** Healthcare in general	***Determinants:*** NHS in general Features of specific services: GP, NHS dentists, hospital service, outpatients Private health insurance Patient involvement ***Context:*** Pragmatic: report for UK Department of Health ***Design:*** Observational	***Sample/data collection:*** British Social Attitudes Survey Representative sample of adults aged 18 yr or over using Postcode Address File Multistage design with 3 separate stages of selection Interview followed by self-completion questionnaire Survey undertaken annually $n = 3633$ for interview; $n = 3145$ for questionnaire ***Measurement of satisfaction:*** Specifically designed questionnaire for national survey 1983–1995 Global satisfaction with services (NHS, GP, dentist, inpatient, outpatient) measured using 7 categories: very satisfied–very dissatisfied, as well as "don't know" and refusal Sources of dissatisfaction and need for improvement in healthcare ***Method of analysis:*** Descriptive statistics	***Results:*** 45% dissatisfied with NHS in 1995 – a 7% increase since 1994 Health was first priority for government expenditure for 49% of respondents and first or second for 77% Satisfaction increased with age and was higher among women Primary healthcare: GP service remains popular (79% satisfied) but for dentists only 55% satisfied GP appointment systems – greatest dissatisfaction (43% see need for improvement) followed by amount of time, and being able to choose a GP (29% each) Hospital service: Fall of 7% in satisfaction with inpatient services and of 3% in satisfaction with outpatient services since 1994 Areas needing improvement (in order of importance): waiting times, staffing levels and condition of buildings More people believed NHS had deteriorated rather than improved in previous 5 years ***Conclusions:*** Descriptive study No specific conclusions reported

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Buller and Buller, 1987[282] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** 1) Two general physician communication styles: affiliation (designed to establish and maintain a positive relationship) and control (behaviours that establish and maintain physician's control) 2) Demographic and general information about respondent 3) Physician and visit details ***Context:*** Based on a theoretical model Communication styles of physicians linked to patient satisfaction with healthcare and mediated by situational, demographic and psychosocial variables ***Design:*** Observational	***Sample/data collection:*** Randomly selected patients who had visited 2 clinics in last month Response rate at each clinic 23% and 67%: $n = 219$ ***Measurement of satisfaction:*** 16 items for satisfaction with interpersonal communication, 5 items for satisfaction with care at visit, derived from other published communication scales 5-point Likert scales (strongly agree–strongly disagree) ***Method of analysis:*** Quantitative	***Results:*** Significant positive relationship between patient evaluation of physician communication and patient satisfaction ($p < 0.05$) Satisfaction with physician communication explained 70.6% of variance in satisfaction with medical care Highly affiliative physicians produced more satisfaction with healthcare ($p < 0.05$) Negative relationship between physicians' expression of control and satisfaction ($p < 0.05$) Time spent with patient did not affect satisfaction but wait times impacted negatively ($p < 0.05$) Mediating variables: physician's dominating communicating style was important (negatively) in evaluation of less severely ill patients, but not of severely ill patients ($p < 0.05$) Affiliative behaviour of younger physicians affected patient satisfaction positively, but that of older physicians did not ($p < 0.05$) Physician age in general positively related to satisfaction ($p < 0.05$) Physician specialty affected satisfaction: obstetrics/gynaecology more favourably received than family practitioners or specialists Communication style more important to patients who visit less frequently ($p < 0.05$) ***Conclusions:*** Competence in communication may be a facet of medical competence

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Calnan *et al.*, 1993[301] ***Country:*** UK ***Setting:*** Healthcare in general	***Determinants:*** This study investigates why people opt for private health insurance, and the extent to which this is because of dissatisfaction with the NHS or certain aspects of it It explores whether there is a typical subscriber and if use of the private sector reflects specific political beliefs and cultural perceptions Dissatisfaction with the NHS may stem from resource constraints, higher expectations, and growth of neoliberalism, which emphasises personal control and individual responsibilities ***Context:*** Empirical study of attitudes A range of socio-economic-political approaches (reviewed by authors) underlie the public vs private healthcare debate and influenced questionnaire design ***Design:*** Observational	***Sample/data collection:*** 1688 of 3060 men completed postal questionnaires: age range 35–55 yr, selected from age-sex registers of 4 general practices in Kent, for high likelihood of having private medical insurance Questionnaire included details about: subscription to private health insurance and use made of it; sociopolitical beliefs about the health service and satisfaction with patterns of health service use Also included questions about health status and sociodemographic characteristics 29% of respondents to the postal questionnaire had private health insurance The second stage of the study involved tape-recorded interviews with 60 men, including subscribers to different sorts of schemes and non-subscribers ***Measurement of satisfaction:*** Questionnaire included global items such as "How satisfied would you say you are with the way in which the NHS runs nowadays" and need for improvement ***Method of analysis:*** Quantitative and qualitative	***Results:*** Lower satisfaction with NHS among subscribers than non-subscribers (no significance tests) Subscribers paying jointly with their employers were more dissatisfied than those with individual schemes or those whose employer paid the full cost Subscribers were different to non-subscribers in terms of sociopolitical beliefs and their beliefs about the advantages and disadvantages of private medicine However, the qualitative data shows that dissatisfaction with aspects of the NHS does not necessarily impact on broad principles about the organisation and funding of healthcare as a whole Most respondents had strong regard for the NHS and a desire to see the service continue and be relieved of problems ***Conclusions:*** The main reason for having private health insurance is not dissatisfaction with the NHS; it is often accepted as a job-related "perk"; it is taken out because of the perceived advantage in terms of individualised treatment, for example, and it is also believed to minimise the risk of not being treated immediately and the consequent loss of time and money caused by being on an NHS waiting list It is also seen as a rational response to deterioration in the subscriber's or other family member's health status

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Calnan *et al.*, 1994[261] Countries: England Greece USSR Yugoslavia ***Setting:*** Primary care	***Determinants:*** 1) To compare levels of satisfaction with specific and general aspects of primary care in different countries 2) To assess relationship between specific dimensions of healthcare and overall level of consumer satisfaction with primary care Questions on: use of services, sociodemographics, access and availability, professional skills, health provision, prescribing, communication, doctor–patient relationship, general satisfaction. ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Canterbury: *n* = 735 from electoral roll; 62% responded Moscow: *n* = 754 residents in 3 districts; 73% responded Belgrade: *n* = 500 residents in one district; 47% responded Ioannia: *n* = 500 residents in one district; 82% responded ***Measurement of satisfaction:*** Self-administered by mail in Canterbury, Moscow, Belgrade; interview in Ioannia Indirect approach: multi-dimensional and global questions Own instrument ***Method of analysis:*** Quantitative	***Results:*** Focuses for concern in all countries: 1) Wait in GP's surgery 2) GP information-giving and health promotion 3) Time with GP On professional skills, Moscow patients most dissatisfied Correlates of general satisfaction are more to do with patient–doctor relationship and professional skills and less to do with access, availability and types of service Authors argue this finding is not surprising because general practice is relatively low-tech ***Conclusions:*** Relatively high satisfaction in Canterbury, although this disguises dissatisfaction with specific aspects, especially in doctor–patient relationships Very different systems and cities (Canterbury and Ioannia – small, provincial; Moscow and Belgrade – large) but convergence rather than divergence of views
Campbell, 1994[268] ***Country:*** UK (Scotland) ***Setting:*** General practice	***Determinants:*** The relationship between: 1) Measures of how GP appointments systems work (number of unbooked "available" appointments, percentage of patients seen as extras, appointment provision) 2) Patients' views of the arrangements for seeing a GP (dissatisfaction reported with surgery wait times, perceived availability of doctors for urgent/non-urgent appointments) 3) Practice self-referral rates to accident and emergency department (A&E) ***Context:*** Empirical study investigates whether dissatisfaction with GP appointments results in increased inappropriate attendance at A&E	***Sample/data collection:*** Questionnaires were distributed to patients in 18 GP practices, resulting in 5310 returns; 26 practices invited to participate; 375 questionnaires completed at A&E corresponding with the GP district GP practices supplied details of appointment systems Data from computerised A&E records concerning referral source and GP of attending patients ***Measurement of satisfaction:*** Direct questions about satisfaction and dissatisfaction with arrangements for seeing a GP (5-point scale) Own instrument ***Method of analysis:*** Quantitative	***Results:*** 25% of patients attending GPs and 36% of A&E patients were dissatisfied with arrangements for seeing GPs Large differences between practices in appointment systems and patient dissatisfaction Significant negative association between practice list size and satisfaction ($p = 0.002$) Patient dissatisfaction with arrangements for seeing a doctor correlated significantly with perceived availability of a doctor to deal with a non-urgent problem within 2 days ($p < 0.001$) or with an urgent problem on the same day ($p < 0.003$) and start of day appointment availability ($p = 0.001$) List size significantly associated with doctor availability for non-urgent ($p < 0.02$) and urgent ($p < 0.04$) problems There was a negative association between self-referral rates to A&E and the distance of a patient's GP practice from A&E ($p < 0.001$) None of the measures of GP appointment system function correlated significantly with A&E self-referral rates after adjustment for practice distance 94% of the variance in dissatisfaction between practices was explained by the perceived availability of a doctor to respond to urgent or non-urgent consultation requests, and by the proportion estimating that they normally waited longer than 15 minutes to be seen The percentage of patients seen as extras was related positively to in-surgery wait times

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Campbell, 1994[268] *contd*			***Conclusions:*** Practices with a high rate of appointment provision or a high rate of appointment availability at the start of the working day had a lower proportion of dissatisfied patients
Carmel, 1985[241] ***Country:*** Israel ***Setting:*** In hospital	***Determinants:*** Relationship between satisfaction and patient characteristics: 1) Sociodemographic (sex, ethnicity, education, housing density, years in Israel) 2) Psychosocial (social network) 3) Situational: attitudinal (type of ward, length of stay, type and severity of illness, health improvement, chances of recovery) ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 476 patients interviewed in 6 wards of 1 hospital (drop-out rate 6.3%) ***Measurement of satisfaction:*** Single question on general satisfaction and other direct measures 31 items referred to services of physician, nurses, support services Own instrument ***Method of analysis:*** Quantitative	***Results:*** Sample over-represented men and young people and under-estimated those aged over 64 yr Satisfaction with physicians ($p < 0.01$) is better predictor of general satisfaction than satisfaction with nurses ($p < 0.05$) Over 80% satisfied overall Best predictors of satisfaction are: perceived improvement in health, larger social networks, satisfaction with organisation in the past, older age ($p < 0.05$) Type of ward (medical vs surgical) predicts satisfaction with physicians and nurses only ($p < 0.05$) Health improvement predicts more satisfaction with services in general in medical wards than in surgical wards ($p < 0.05$) ***Conclusions:*** Satisfaction is a complex phenomenon When clients perceive their main goals are achieved (i.e. health improves) they attach little importance to deficiencies of process of achieving it
Cleary *et al.*, 1989[238] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Investigate relationship between satisfaction and patient characteristics (age, gender, health status, source of payment, length of stay) ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** All medical ($n = 255$), surgical ($n = 347$) and obstetric ($n = 329$) patients discharged in 1 week Mailed questionnaire 3 weeks after discharge ***Measurement of satisfaction:*** Factor analysis revealed 4 factors that formed the basis of scales that measure satisfaction by indirect methods: Physician Nursing Food Room ***Method of analysis:*** Quantitative	***Results:*** 598 questionnaires returned; response rates 68.3%, 56.9%, 65% respectively Overall satisfaction of medical patients determined more by physicians and nurses than other groups Length of stay, age, gender, type of insurance had no effect on satisfaction Perceived health was positively correlated with satisfaction ($p < 0.01$) ***Conclusions:*** Questionnaire acceptable to patients and useful to managers

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Cleary *et al.*, 1991[239] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Effect of sociodemographic characteristics, health status and insurance coverage on problems scores ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** National telephone survey: 6455 (76%) recently discharged adult patients from 62 (of 141) hospitals ***Measurement of satisfaction:*** For each respondent, index of quality of care calculated from number of problems reported in 52 questions across 5 areas: 1) Patient education and communication with providers 2) Respect for patients' needs and preferences 3) Provision of emotional and physical comfort 4) Family involvement 5) Discharge preparation Picker-Commonwealth Survey of Patient-centred care ***Method of analysis:*** Quantitative	***Results:*** No significant differences in participating and non-participating hospitals In 50% of questions, problems were reported in fewer than 10% of patients Areas where several problems were reported: Lack of trust in non-physician staff Lack of information Discharge details Higher problem scores for sicker, lower income and non-white patients ($p < 0.01$) Older patients had fewer problems ($p < 0.01$) Health status strongest predictor of problems after controlling for confounding factors (race, insurance, type of admission), then income, and age ***Conclusions:*** Regressions accounted for only 9% of variance in problem score, suggesting other factors (e.g. institutional characteristics) may be important Scales such as these enable comparisons of performance across clinical units in a given hospital, and types of hospitals, and provide clinicians and managers with information about where care needs to be improved

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Cleary *et al.*, 1992[237] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** 1) Specific events (problems) in hospital care: communication, financial, physical/emotional support including pain, family involvement, discharge 2) Patients' preferences for being involved in decision-making and being given information 3) Self-rating of health (4-point scale) 4) Sociodemographic characteristics: age, sex, race, education, income ***Context:*** Empirical approach to investigate relationship between reported problems and patients' summary evaluations of hospital care ***Design:*** Observational	***Sample/data collection:*** 1989 nation-wide telephone interview survey Probability sample of adults discharged in previous month from not-for-profit hospitals with >100 beds 62 hospitals (of 141 eligible) participated. 6455 patients responded (76% response rate) ***Measurement of satisfaction:*** Evaluation of care: Picker questionnaire (5-point scales) based on: 1) Courtesy and helpfulness of doctors and nurses 2) Availability of nurses 3) Organisation of hospital staff and services 4) Cleanliness and comfort of room 5) Overall evaluation of care High internal consistency (Cronbach's alpha = 0.6–0.78); responses averaged to create one score ***Method of analysis:*** Quantitative	***Results:*** Overall: >80% said care excellent/very good; 11% said care too short; 15% were angry with care; 6% would not recommend hospital again Less good evaluation of care correlated with: 1) Worse perceived health status ($p < 0.001$) 2) Older age ($p < 0.001$) 3) Lower income ($p < 0.001$) 4) Preference for more involvement and information ($p < 0.001$) Number of reported problems correlated with: 1) Less good evaluation of care ($p < 0.001$) 2) Worse perceived health ($p < 0.001$) 3) Older age ($p < 0.001$) Regression analysis: Strongest predictor of overall evaluation of care was total problems with care ($b = –0.59$) Also significant: age ($b = 0.05$), health status ($b = –0.11$), preferences for information ($b = –0.04$), and involvement ($b = –0.05$); $R^2 = 0.41$ Number of problems reported predicted by perceived health status and age: $R^2 = 0.07$ ***Conclusions:*** Confirms earlier work: health status is more important predictor of problem reporting than race, length of stay or care by personal physician, but small proportion of variance explained So problems are accounted for by factors other than the patient and hospital characteristics measured in this study More work is required

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Cohen, 1996[223] ***Country:*** UK (Scotland) ***Setting:*** Hospital care: inpatient, outpatient, and accident and emergency	***Determinants:*** How satisfaction/dissatisfaction varied with: 1) Age 2) Social class 3) Self-reported health status: 9 scales – physical functioning, physical role limits, social functioning, pain, mental health, vitality 4) General health 5) Change in health ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Postal survey, Lothian region Sample drawn from Community Health Index, based on proportions (by age group) hospitalised in previous year, but to cover elderly people disproportionately *n* = 6212 (response rate 78%), of which 2569 analysed because had to have been in hospital in previous year ***Measurement of satisfaction:*** 13 indirect items on personal treatment and communication with doctors, drawn from other surveys Focused on proportion of patients expressing dissatisfaction with various items ***Method of analysis:*** Quantitative	***Results:*** Main sources of concern: Opportunity to ask questions (24%) Choices explained (21%) Doctors no time to listen (13%) Doctors ignore what you say (13%) Being patronised (11%) Older patients less dissatisfied Slight tendency for women to be more dissatisfied than men, but not significant in logistic regressions Small social class differences, although manual groups more likely to feel patronised Poorer health associated with dissatisfaction for 3 scales: pain, mental health, social functioning ($p < 0.05$) but health effects small by comparison with age effects No significant links between health measures and satisfaction ***Conclusions:*** Age and health status (and for some items social class) are significantly related to dissatisfaction
Comstock *et al.*, 1982[279] ***Country:*** USA ***Setting:*** Hospital outpatient	***Determinants:*** 1) Caring behaviour 2) Observation of consultation through one-way mirror using a 30-item checklist that included 26 verbal and non-verbal scales and covering: information-giving, listening, empathy, physical attention, and courtesy; ratings on a 4-point scale; 2 observers for each consultation to establish reliability 3) Sociodemographic characteristics 4) Physician and visit characteristics ***Context:*** Empirical study, in the context of compliance Examines the importance of caring skills for doctors, and which caring skills impact on patient satisfaction ***Design:*** Observational	***Sample/data collection:*** *n* = 15 internal medicine residents: 11 male, 4 female *n* = 150 patients Over a 10-week period, 10 physician–patient interactions were observed per physician for a total of 150 observations ***Measurement of satisfaction:*** After clinic, 8-item questionnaire – satisfaction with interpersonal skills – formed from 23 items using indirect questions 7-point interval scale combined scores for summary satisfaction ratings Own instrument ***Method of analysis:*** Quantitative	***Results:*** Mean satisfaction scores high (i.e. >6 on 7-point scale) Significant correlation between patient satisfaction and physician courtesy ($p < 0.001$), information giving ($p < 0.001$), listening ($p < 0.01$), empathy ($p < 0.05$) No difference in satisfaction between patients of different ethnic origins or sex, but those aged over 40 yr rated global satisfaction significantly higher than those under 40 yr ($p < 0.01$) Verbal skills correlated significantly with patient satisfaction, while non-verbal behaviours (eye contact, body positioning, physical contact) did not No effect of physician gender or appearance on satisfaction Weak correlation between time spent with physician and satisfaction ($r = 0.17$, $p < 0.05$) Female patients expressed more satisfaction with female physicians than male patients expressed with female doctors ($p < 0.05$); this was not related to differences in caring skills ***Conclusions:*** Patient satisfaction correlated strongly with ratings for physician courtesy and information giving Non-verbal behaviours did not correlate with patient satisfaction, and the correlations between physician behaviour and patient satisfaction did not hold for the female physicians studied

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Corney, 1999[300] ***Country:*** UK ***Setting:*** General practice and hospital outpatients	***Determinants:*** General practice fund-holding and its effect on: satisfaction with primary care; patients' views on GPs' reluctance to prescribe and refer; use of private healthcare; waiting time; and satisfaction with secondary care ***Context:*** Empirical study of practical changes in patient care through introduction of fund-holding ***Design:*** Observational	***Sample/data collection:*** 120 patients from each of 4 practices preparing for second-wave fund-holding and 4 non fund-holding practices Postal questionnaire with a follow-up 30 months later Patient sample: recent attendees, 20 women and 20 men from different age groups (16–40 yr; 41–60 yr; 61 yr and over) 50 of the 120 patients had been referred during previous year to NHS secondary care Different sample and those referred to secondary care increased to 100 in a follow-up survey ***Measurement of satisfaction:*** Questionnaire specifically designed for survey to test impact of fund-holding General patient satisfaction questions (direct) and willingness to change practice Experiences with respect to referral and secondary care ***Method of analysis:*** Quantitative	***Results:*** Response rates: 70% in 1992, 66% in 1994/1995, but much variability between practices No differences in demographic details between fund-holding and non-fund-holding and between 1992 and 1994 Satisfaction levels were generally high and changed little over time No significant differences between fund-holders and non-fund-holders in satisfaction with primary care services or willingness to change practices No evidence to suggest fund-holding GPs were less inclined to prescribe or refer to secondary care services Waiting times for the first appointment with a consultant in secondary care had reduced between 1992 and 1994 for patients referred from fund-holding practices ($p < 0.05$); however, no differences in the time patients had to wait for subsequent treatments or further investigations One-fifth of fund-holding practice patients referred to secondary care were seen by a specialist in their doctor's surgery, which was preferred by these patients ***Conclusions:*** Patients perceived no major difference in primary care services over the period between the two surveys There was some evidence of preferential treatment for patients of fund-holding practices, but only in waiting times for the first appointment with a secondary care specialist

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Covinsky *et al.*, 1998[242] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Health status: 1) Self-reported global health (4-point scale) 2) Independence in activities of daily living: dressing, bathing, toileting, transferring, eating 3) Changes in health status and activities of daily living between admission and discharge ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Cleveland Medical Service of teaching hospital Interview survey on discharge Medical patients ≥70 yr, *n* = 592, 75% of responses useable, giving sample of 445 38% African-American, 68% women ***Measurement of satisfaction:*** Five items on 5-point scale adapted from Ware and Hays' Visit Specific Questionnaire: 1) Technical care by doctors and nurses 2) Attentiveness and kindness of doctors and nurses 3) Overall satisfaction Indirect measures: total satisfaction score was sum of 5 items, transformed to scale 0–100 ***Method of analysis:*** Quantitative	***Results:*** Controlling for admission health status, changes in health status and activities of daily living between admission and discharge positively associated with satisfaction (p = 0.01 to 0.08) Those patients with most/least improvement recorded highest/lowest satisfaction Controlling for discharge health status, change in health status no longer significantly associated with satisfaction (p = 0.40 to 0.63) Patients reporting better health at discharge recorded higher satisfaction and *vice versa* ***Conclusions:*** Satisfaction linked positively to health status on discharge rather than to improvements in health after treatment

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Coyle *et al.*, 1992[263] ***Country:*** UK ***Setting:*** Primary care	***Determinants:*** General health, use of service, access and availability of GP, practice premises, interpersonal and professional skills of GP, practice nurse, preventive care, expectations, sociodemographic details ***Context:*** Empirical study to assess whether implementation of GP contract in 1990 improved quality of care for consumers ***Design:*** Observational	***Sample/data collection:*** Random sample of 2783 patients in Canterbury and Thanet in 1991 sent postal questionnaire ***Measurement of satisfaction:*** Overall satisfaction with variety of aspects of care Majority of direct questions rated on 5-point ordinal scale: 1 = very satisfied to 5 = very dissatisfied; or 1 = agree strongly to 5 = disagree strongly Own instrument ***Method of analysis:*** Quantitative and qualitative	***Results:*** High levels of overall satisfaction with professional and technical skills of GPs (>95%) and practice nurses (>85%) Satisfaction good or very good with primary care overall in 86% of responses Older, less well-educated people significantly more satisfied ($p < 0.05$) but no gender differences in overall satisfaction Detailed questions revealed dissatisfaction in some areas (e.g. wait times, lack of advice on health promotion, and ability to discuss personal problems) Satisfaction increased from 1988 with waiting times in doctor's surgery and with respect to the time taken to obtain an appointment (70% in 1988 to 84% in 1991 for same-day appointment) Doctor–patient relationship: satisfaction with time available for consultation ($p < 0.001$) and amount of information given improved significantly ($p < 0.001$) Proportion of respondents who believed that they could not discuss personal problems remained fairly high (well over one-third), representing little change Strong association between overall satisfaction and doctor being understanding ($r = 0.68$, $p < 0.01$), GP's medical skills ($r = 0.58$, $p < 0.001$), practice out-of-hours arrangements ($r = 0.58$, $p < 0.001$), and preventive care ($r = 0.51$, $p < 0.001$) Evidence of consumers' lack of knowledge of preventive services provided ***Conclusions:*** Evidence from study would seem to suggest that consumers appreciate an understanding and technically skilled doctor who is close at hand and who provides some measure of preventive care Link tenuous between improvements noted and new contracts

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Davis *et al.*, 1995[305] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** To investigate enrolees' views of health plans and physicians Compares managed care with fee-for-service Includes analysis of sociodemographic characteristics ***Context:*** Empirical study in the context of the move to managed care in the USA ***Design:*** Observational	***Sample/data collection:*** Survey of insured adults in 3 US cities in 1994 about choice of plan and satisfaction with it 20-minute telephone interview Random digit dialling used to assemble a quota sample Approx 500 fee-for-service and 500 managed care enrolees selected in each city ***Measurement of satisfaction:*** Satisfaction measured on 4-point scale (excellent, good, fair, poor) with plan in general and aspects of it: quality of services, choice, access, availability, wait times, costs, paperwork, preventive care Questions drawn from other instruments ***Method of analysis:*** Quantitative	***Results:*** Managed care enrolees are younger, have lower income and education than fee-for-service enrolees No difference in health status between groups Overall satisfaction was significantly higher amongst fee-for-service patients than health maintenance organisation patients ($p < 0.01$) A higher percentage of fee-for-service patients than managed care patients rated as excellent: quality of service, choice of physicians, access to specialty care, availability of emergency care, waiting time for appointment, premium paid More managed care patients than fee-for-service patients rated their plan as excellent: on out-of-pocket costs, paperwork and coverage of preventive care ($p < 0.01$) There was evidence that low income is related to lower satisfaction levels in managed care High rate of involuntary plan changing and less choice of physicians in managed care Generally, respondents rated their physicians more highly than their plans 29% of managed care enrolees did not have a choice of plan; lack of choice was significantly related to low satisfaction ($p < 0.01$) ***Conclusions:*** Low-income families are vulnerable; they cannot afford to enrol in fee-for-service and their choice of physician is restricted in managed care; this is related to lower satisfaction

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
De La Cuesta, 1997[209] ***Country:*** Colombia ***Setting:*** Ambulatory care	***Determinants:*** Aimed to establish an understanding of satisfaction with care received from patient perspective ***Context:*** Empirical study to establish, by qualitative means, the factors that patients report give rise to satisfaction ***Design:*** Observational	***Sample/data collection:*** 364 structured interviews in 3 cities with patients who were prescribed benzodiazepines 65% women 85% of sample receiving free healthcare (social security) ***Measurement of satisfaction:*** 3 open questions about care and the information received Responses transcribed, coded, grouped and sorted ***Method of analysis:*** Qualitative	***Results:*** 3 features generate satisfaction: 1) A good relationship that arises from: (a) doctor imparting information; (b) a sense of being known and treated in a personal way; (c) alertness of doctor; believing he/she is on top of problem 2) Expectations that were met: (a) congruency with medical care – believed what doctor did was right; (b) positive outcomes 3) Trust: mediating factor in satisfaction ***Conclusions:*** Interpersonal relationships and patients' expectations play an important role in satisfaction and relate to: knowledge about illness; a sense of being known and treated as a person; the alertness of the doctor Trust in the doctor was found to mediate satisfaction Expectations are met when there are positive outcomes and a congruency with medical care
Department of Health, 1999[264] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** To monitor delivery of quality standards locally To enable local managers and health professionals to take account of users' views ***Context:*** Pragmatic study for policy making and evaluation ***Design:*** Observational	***Sample/data collection:*** Random selection of 100,000 adults from electoral registers Postal questionnaire, 54.5% response rate, 81% of whom had seen GP in last 12 months (*n* = about 50,000) ***Measurement of satisfaction:*** 20-page questionnaire covered utilisation, experiences with: contacting GPs, waiting times for appointment and at surgery, choice of GP, consultation length, GP–patient communication, GP knowledge and skill, out-of-hours care, referrals, complaints ***Method of analysis:*** Descriptive analysis	***Results:*** Most had favourable views of GPs, who took opinions seriously, were easy to understand, and kept patients well informed To the extent that patients were critical, most discontent had to do with accessibility (obtaining appointment) and waiting Among people referred to hospital, 36% said their condition worsened while waiting Less satisfied groups: aged under 45 yr, those living in London, ethnic minorities Few differences in satisfaction between social classes People in full-time work or education least satisfied with access to surgery Contains descriptive data about: length of wait, if thought GP had taken appropriate action, if GP had given clear information etc. ***Conclusions:*** Reports on experiences used as basis of quality assessment

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
DiMatteo and Hays, 1980[290] ***Country:*** USA ***Setting:*** Family practice	***Determinants:*** Assess patient satisfaction with physicians in relation to their perceptions of: 1) Proficiency at communicating and listening 2) Capability of providing affective care 3) Technical competence 4) If asks about family and job Effect of patient sociodemographic characteristics on satisfaction ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Questionnaire administered to 329 low-income patients (81.4% response rate) of 54 residents; responses completed in clinic ***Measurement of satisfaction:*** 27 statements for agree/disagree and 5-point Likert scale in 4 factors: general, communication, affective, technical, family and jobs Items derived from Medical Interview Satisfaction Scale and Patient Satisfaction Questionnaire ***Method of analysis:*** Quantitative	***Results:*** Scores for communication, affective and technical skills closely correlated and significantly related to general satisfaction ($p < 0.001$) Older patients more satisfied ($p < 0.05$) Satisfaction of patients in higher socio-economic groups depended more on perceived technical aspects than in lower socio-economic groups ($p < 0.05$) Patients with greater continuity of care from doctor rated technical competence a less important determinant of satisfaction than patients with less continuity ($p < 0.05$) ***Conclusions:*** Raises issues of whether patients can accurately judge technical aspects of care
DiMatteo *et al.*, 1998[289] ***Country:*** USA ***Setting:*** Ambulatory and in hospital	***Determinants:*** Physicians' non-verbal encoding and decoding skills (their ability to communicate and understand facial expressions, body movement and voice tone cues to emotion) measured using validated scales ***Context:*** Empirical study based on importance of understanding determinants of patient satisfaction because this impacts on adherence ***Design:*** Observational	***Sample/data collection:*** $n = 71$ residents, $n = 462$ patients Combines results of 2 studies Internal medicine All residents participated No information on participation rate of patients ***Measurement of satisfaction:*** Interview Technical care and socio-emotional aspects (art) of care (sensitivity, explaining, listening, caring) Own instrument ***Method of analysis:*** Quantitative	***Results:*** Satisfaction with art and technical aspects moderately correlated Significant proportion of variance in patient satisfaction accounted for by non-verbal communication skills of physicians Physicians who were able to decode (i.e. more sensitive to body movement and posture cues) received higher ratings from patients on the art of care than less sensitive physicians ($p < 0.05$) Physicians successful at encoding (i.e. expressing emotion through non-verbal communication) rated higher by patients ($p < 0.05$) ***Conclusions:*** Physician conduct important in patient satisfaction: most work done on verbal communication Role of non-verbal communication needs shown as important by this study

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Eguskiza *et al.*, 1995[247] ***Country:*** Spain ***Setting:*** Primary care	***Determinants:*** How doctors' characteristics affect patient satisfaction, particularly the effect of training in interpersonal skills ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Structured population sampling of patients who had visited their GP 3 times or more in the past 12 months *n* = 420 patients interviewed in own homes *n* = 30 doctors asked about training, demographic details, skills ***Measurement of satisfaction:*** Validated questionnaire, 16 items, 5-point Likert-type scale, covered: trust, knowledge, continuity, information, accessibility, interest, time, participation Items summed for general index ***Method of analysis:*** Quantitative	***Results:*** Satisfaction levels high: 50% had >73/80 points Satisfaction was significantly correlated with older age, less education, and length of time registered with doctor ***Conclusions:*** No relationship between satisfaction and doctor's training in doctor–patient relationship
Esteban de la Rosa *et al.*, 1994[235] ***Country:*** Spain ***Setting:*** Healthcare in general	***Determinants:*** 1) Perceived morbidity 2) Health service usage 3) Lifestyles 4) Environment 5) Personal, sociodemographics ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** North Granada Health Area Multistage random samples in 24 areas *n* = 2483 (0.6% of population) Questionnaire about previous year's events: 2 versions – adults and children Interview ***Measurement of satisfaction:*** Global satisfaction (3-point scale) and reasons for dissatisfaction ***Method of analysis:*** Quantitative	***Results:*** 64%, 26%, 9% of users were very, fairly, poorly satisfied Most satisfied: those hospitalised Least satisfied: emergency room users Intermediate: office consultations Significantly lower satisfaction among young, single, educated, non-religious, urban dwellers and those with unhealthy lifestyles (smoke, drink alcohol, do not eat fruit, poor environment) No relation between perceived health or gender and satisfaction Most important reasons for dissatisfaction (in order): waiting, time afforded in consultation, information given, bureaucracy ***Conclusions:*** Satisfaction varies with sociodemographic characteristics

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Etter and Perneger, 1997[250] ***Country:*** Switzerland ***Setting:*** Ambulatory care	***Determinants:*** To monitor patient satisfaction during the first 18 months of a managed care plan, during which time improvements were implemented: To compare satisfaction of patients visiting GPs at the plan's clinic with that of patients visiting specialists in an independent clinic To detect consumer characteristics associated with satisfaction To explore differences in satisfaction over time and between groups Confounding factors included: age, gender, country of birth ***Context:*** Pragmatic study was part of an evaluation of care in a managed plan that introduced gatekeeping to address financial deficits of the previous fee-for-service system ***Design:*** Observational	***Sample/data collection:*** All participants were patients in the plan for the University of Geneva All patients who consulted a gatekeeper in March 1993 (n = 196), October 1993 (n = 258), and March 1994 (n = 294), or who had been referred to specialists in March 1994 (n = 151), were sent a mailed questionnaire Up to 4 copies were sent out together with reminders Interviews with plan staff and enrolees ***Measurement of satisfaction:*** The questionnaire dealt with satisfaction with last visit 18-item questionnaire with a short statement and a 5-point scale ranging from "strongly agree" to "strongly disagree" Summary rating was mean of 18 scores Patients were also asked to write a few comments Own instrument ***Method of analysis:*** Qualitative and quantitative	***Results:*** Participation rates were high (n = 79–87%) Most were born outside Switzerland Factor analysis produced 3 factors accounting for 55% of total variance: technical aspects of care, interpersonal aspects of care, access to medical services Satisfaction scores for technical and interpersonal aspects of care improved over the period of the survey but not at a statistically significant level Patients who consulted an outside specialist were more satisfied globally ($p < 0.001$), with technical aspects ($p < 0.001$), and with access to healthcare services ($p < 0.001$) than those consulting plans' gatekeepers Age and sex were not associated with satisfaction ratings Satisfaction with the technical aspects of care was lower among students than non-students People born outside Switzerland had lower satisfaction ratings than those who were Swiss born Patients who wrote negative comments had a lower global satisfaction score than those writing positive, mixed or no comments ***Conclusions:*** The authors speculate from the interview results about why there was little change in satisfaction levels over the course of the survey (e.g. inexperienced doctors recruited as gatekeepers, budget pressures, and high expectations of patients)

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Evans *et al.*, 1987[276] ***Country:*** Australia ***Setting:*** General practice	***Determinants:*** Study examined effect of communication skills training for doctors on patients' satisfaction with: 1) Amount and clarity of information received 2) Doctors' expression of caring and respect using Doctor–Patient Communication Survey Also monitored patient post-consultation anxiety (State-trait Anxiety Inventory), and controlled for patient sociodemographic characteristics Training comprised 2 × 3-h seminars and accompanying booklet ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Doctors who volunteered for project (20% of all GPs) randomly selected and allocated to: 1) Training (n = 20) 2) Control (n = 20) n = 400 patients 10 patients of each doctor in study asked to fill in questionnaire post-consultation, pre- and post-training ***Measurement of satisfaction:*** Doctor–patient communication survey devised by author: Length of consultation Information and explanations Doctor caring and sympathy Intentions re compliance Overall satisfaction (rating on 100-point analogue scale) ***Method of analysis:*** Quantitative	***Results:*** Groups of doctors and patients comparable at baseline Patients of trained doctors reported significantly higher satisfaction than patients of control doctors on each cognitive and emotional component of satisfaction, and on overall satisfaction ($p < 0.001$) Patients of trained doctors displayed higher trait anxiety but lower state anxiety than patients of control group doctors ($p < 0.001$) ***Conclusions:*** Short-term gains in patient satisfaction were achieved by training, which consisted of a simple discussion with GPs of variables that affect patients' perceptions of consultation

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Fitzpatrick *et al.*, 1983[218] ***Country:*** UK ***Setting:*** Outpatient	***Determinants:*** Personal and management factors related to dissatisfaction with consultation for headache due to non-structural causes Preconsultation interview probed symptoms, worries and expectations ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 95 new patients of 18 neurologists in 11 hospitals interviewed before consultation and at home 2–3 weeks later 75 traced and interviewed again at home 1 year later ***Measurement of satisfaction:*** Degree of satisfaction determined by researchers from views expressed in home interview ***Method of analysis:*** Qualitative and quantitative	***Results:*** Patients uniformly uncertain and hesitant in expressing firm expectations prior to consultation 2 themes emerged: 1) Specialist is expert 2) Specialist would have time to spend on problem After consultation 36% dissatisfied with some aspect of it: medical actions, communication, or both; many believed that doctor had been superficial in approach After 1 year, considerable improvement reported by sample and 56% had improved by objective measures Improvement associated with satisfaction with consultation ($p < 0.02$) and having had investigative tests ($p < 0.02$) Interaction between satisfaction and having tests Drug effects modest and independent of improvement ***Conclusions:*** Most improvement at 1 year not due to treatments but attributed to patients' responses to clinic attendance Interpret the immediate "satisfied" response and subsequent improvement in terms of general levels of expectancy about visit, and sense of control achieved by obtaining referral to a specialist, which directly enhanced recovery Disappointment with doctor reduced non-specific therapeutic benefits
Fitzpatrick and Hopkins, 1983[245] ***Country:*** UK ***Setting:*** Outpatient	***Determinants:*** Impact of satisfaction with outpatient consultation on long-term (1 year) health outcome controlling for symptom severity and socio-economic characteristics ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Patients consulting neurological outpatient clinics for headaches not due to serious structural lesion 95 patients interviewed at time of first consultation; 75 of these traced and re-interviewed at home 1 year later to collect information on symptom progress, medication and health service use ***Measurement of satisfaction:*** Degree of satisfaction assessed by researchers from tape-recordings of interviews after initial consultation ***Method of analysis:*** Qualitative and quantitative	***Results:*** 18/75 patients had been dissatisfied or disappointed after initial consultation owing to superficial attention to problem 71% of sample reported symptom improvement after 1 year On scales, 56% showed improvement ***Conclusions:*** Satisfied patients improved significantly more than dissatisfied ones, independently of whether medication had been prescribed

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Fitzpatrick and Hopkins, 1981[291] ***Country:*** UK ***Setting:*** Outpatient	***Determinants:*** Effect of (dis)satisfaction with communication on compliance ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 95 patients (from 11 hospitals) with headache not due to structural causes interviewed at time of initial consultation 75 of these traced and interviewed at home 1 year later ***Measurement of satisfaction:*** Global satisfaction assessed by researchers from tape-recording of interviews of initial consultation ***Method of analysis:*** Qualitative	***Results:*** 36% of sample dissatisfied with some aspect of doctor's actions: 8% not receiving tests or examination, 11% with doctor communication, 17% with both actions and communication Dissatisfaction was not associated with sociodemographic characteristics (age, sex, education, social class) Patients with very clear views of their illness significantly more dissatisfied ($p < 0.01$) ***Conclusions:*** Non-compliance at 1-year follow-up related to dissatisfaction with communication expressed 1 year earlier ($p < 0.05$)
Fitzpatrick and Hopkins, 1981[244] ***Country:*** UK ***Setting:*** Outpatient	***Determinants:*** Personal and management factors related to dissatisfaction with consultation for headache due to non-structural causes Preconsultation interview probed symptoms, worries and expectations ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Newly referred patients of 18 neurologists in 11 hospitals: 109 patients interviewed before consultation; 95 (87%) of whom were interviewed in their homes 2 weeks later ***Measurement of satisfaction:*** Global measure determined by researchers from views expressed in home interview ***Method of analysis:*** Qualitative	***Results:*** 25% of patients dissatisfied: in half the cases they thought doctor too superficial Dissatisfaction was not related to socio-economic variables or to patient management (e.g. whether patient seen by consultant or junior doctor, whether follow-up arranged) Dissatisfaction was related to longer history of headache ($p < 0.01$), migraine rather than tension headache ($p < 0.02$), psychiatric symptoms ($p < 0.02$), holding strong views about the nature of their problem ($p < 0.001$) People critical of the information received were most likely not to have been reassured by the visit ($p < 0.01$) ***Conclusions:*** In the year after referral, consultations with GPs for headaches dropped, even though only 17 patients reported their headaches had disappeared

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Fitzpatrick and Hopkins, 1983[110] ***Country:*** UK ***Setting:*** Hospital outpatient	***Determinants:*** Preconsultation: symptoms and expectations ***Context:*** Based on theoretical premise that patients' evaluations of care are influenced by the degree to which prior expectations are met by experiences ***Design:*** Observational	***Sample/data collection:*** Migraine patients (n = 95) from 11 hospital outpatient clinics Average age: 37 yr 69% women Consultations observed and analysed Measurement of patient satisfaction: Non-schedule standardised interviews (audio-recorded) in own home 2–3 weeks after consultation ***Method of analysis:*** Qualitative	***Results:*** Expectations were hesitant and non-committal Evaluations were often critical, especially: inadequate information, investigation and treatment Global judgements ranged from disappointed/annoyed to impressed 39% (25%) viewed visit as successful (unsuccessful); the rest had mixed feelings Variation in reactions could not be explained by content of interaction, prior expectations or sociodemographic variables ***Conclusions:*** Qualitative analysis illustrates lack of fit between patients' accounts of experiences and assumptions about patients in satisfaction research Authors express theoretical and methodological reservations about validity of survey approaches that often record high levels of satisfaction Positive or negative comments rarely expressed as satisfied or dissatisfied
Fleming, 1981[229] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** 1) Environment: urban/rural, sociodemographics of catchment area 2) Structure – hospital type: government operated, for profit, not for profit, teaching, specialised institution, size 3) Process: average length of stay, occupancy, growth, employee turnover 4) Outcomes: measures of quality of care, efficiency, satisfaction ***Context:*** Theoretical model constructed to link satisfaction, environment, structure, process and outcome ***Design:*** Observational	***Sample/data collection:*** National survey of access to healthcare 1976 Household interviews about preceding year 7787 survey respondents, of which 589 had been hospitalised in >300 hospitals ***Measurement of satisfaction:*** 5 items from factor analysis: 1) Overall evaluation of care 2) Courtesy and consideration of medical staff 3) Courtesy and consideration of nursing staff 4) Courtesy and consideration of aides, orderlies and other staff 5) Getting questions answered Own instrument ***Method of analysis:*** Quantitative	***Results:*** Satisfaction correlated significantly ($p < 0.01$) with teaching status Patients in teaching hospitals most dissatisfied Teaching status significantly associated with bed numbers Private hospitals generate significantly higher satisfaction than government owned institutions ($p < 0.05$) The greater the number of days a patient spends in hospital the greater the satisfaction ($p < 0.01$) Older patients significantly less critical ($p < 0.01$) Suburban dwellers more critical than inner city and rural dwellers ($p < 0.05$) People with regular source of care more satisfied ($p < 0.05$) More worried individuals less satisfied ($p < 0.05$) ***Conclusions:*** Teaching status has independent effect on satisfaction; this may be a result of the priority given to the training goal in teaching hospitals, which affects the patterns of behaviour among personnel that may offend some patients and be translated into poor quality of care

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Fox and Storms, 1981[297] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Relationship between individuals' conditions of care and orientations toward care, and whether satisfaction results when these match Conditions of care refer to physician behaviour (affective, technical) and organisation of care (health maintenance organisation, fee-for service) Orientations include socio-economic and demographic characteristics for their influence on knowledge and health beliefs ***Context:*** Theoretical Presents and tests model that proposes two intervening variables that may explain inconsistencies in the relationships between sociodemographic variables (race, age, sex, income etc.) and satisfaction ***Design:*** Observational	***Sample/data collection:*** 3398 residents of Baltimore sampled for telephone interviewing; 2582 (78%) responses ***Measurement of satisfaction:*** One overall question to rate quality of medical care, for respondents who had received healthcare in last 12 months (80% of respondents) ***Method of analysis:*** Quantitative	***Results:*** Respondents matched Baltimore's racial composition and national income distribution; however, sample did under-represent men, less well educated people, and people aged 18–20 yr; and over-represented higher educated people and people aged >65 yr Utilisation rates were representative Satisfaction scores skewed to upper end of scale Higher satisfaction associated with women ($p = 0.005$), less education ($p < 0.005$), older age ($p = 0.005$), not in employment (i.e. retired, homemaker) ($p < 0.01$), lower income ($p < 0.005$) Race not significant Overall satisfaction related to having regular place of care ($p = 0.005$), having a personal physician ($p < 0.001$), having preventive care visits ($p < 0.005$), living close to care ($p < 0.005$), having recent visit(s) ($p < 0.005$), chronic condition ($p < 0.02$) After controlling for healthcare conditions, only age and gender remain significant determinants of satisfaction ***Conclusions:*** Some sociodemographic variables cross-cut others to create more widely-shared healthcare orientations and thus more stable sociodemographic/satisfaction correlations Age and gender are strongest sociodemographic predictors because they correspond highly with utilisation and may create differing orientations to healthcare Women and elderly people may expect and/or receive different affective relationships

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Froehlich and Welch, 1996[210] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** To examine relationship between meeting expectations for tests and visit satisfaction Previsit measured: age, health status, baseline satisfaction and expectations for common tests After visit, measured visit-specific satisfaction, provider interpersonal behaviour, and whether tests were offered Independent variable: proportion of expectations for tests that were met Common tests included blood, radiographs, cholesterol Also medication, referral, health promotion discussion ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Walk-in patients at a Veterans Affairs facility surveyed before and after consultation 149 male veterans; 109 completed both questionnaires ***Measurement of satisfaction:*** Based on Visit Specific Questionnaire: 9 items Indirect measures: rating items excellent–poor Global satisfaction also measured ***Method of analysis:*** Quantitiative	***Results:*** 62% expected one or more tests Nearly one-half did not get them Provider interpersonal behaviour was sole predictor of satisfaction Meeting expectations for tests not related to satisfaction ***Conclusions:*** Providers do not need to offer tests in an effort to increase patient satisfaction

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Gottlieb *et al.*, 1994[107] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Relationships among disconfirmation of expectations, perceived quality, satisfaction, perceived situational control, and behavioural intentions Two types of expectations: focal (courtesy, efficiency, competence of service personnel); contextual (environment – room, meals) Disconfirmation (better/worse than expected) on 7-point scale Perceived quality based on SERVQUAL (tangibles, reliability, responsiveness, assurance, empathy) Situational control: how much influence over care Behavioural integration: would use hospital again ***Context:*** Theoretical model ***Design:*** Observational	***Sample/data collection:*** Random sample (n = 849) 10 days after discharge; 27% (n = 232) responded (no difference between responders and non-responders) Mailed questionnaire ***Measurement of satisfaction:*** 3 global items, 7-point scale ***Method of analysis:*** Quantitative	***Results:*** Focal and contextual dimensions of disconfirmation of expectations affect perceived quality ($p < 0.01$, $p < 0.05$) en route to their influence on behavioural intentions Perceived quality affects satisfaction ($p < 0.01$), and satisfaction affects behavioural intentions ($p < 0.01$) Perceived situational control not related to satisfaction: 73% of satisfaction explained by perceived quality, disconfirmation of focal and contextual dimensions ***Conclusions:*** Explores complex cognitive processes through which consumers develop perceived quality/satisfaction Results support expectancy-value theory

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Gray, 1980[202] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** 1) Concurrent assessment of: availability of services; wait for appointment; waiting time in office; availability out of hours 2) Healthcare delivery system: fee-for-service or prepaid plan (complex variable includes benefit cover and reimbursement method); having own physician or not 3) Self-reported health status 4) Prior satisfaction 5) Health service utilisation 6) Background (indirect) factors: age, sex, race ***Context:*** Based on carefully constructed theoretical model ***Design:*** Observational	***Sample/data collection:*** Federal employees Systematically derived sample Initial personal interview followed by monthly telephone interviews over 12 months *n* = 821 (from initial sample of 1124) ***Measurement of satisfaction:*** Scores on 7 physician-related items (isolated from 13-item scale by factor analysis), and overall summed score: 1) Quality of medical care 2) Time doctor spends 3) Amount of information doctor gives 4) Doctor courtesy 5) Doctor explanation of home care 6) Doctor follow-up 7) Doctor's personal interest Own instrument ***Method of analysis:*** Quantitative	***Results:*** No difference in satisfaction at baseline between included and excluded patients Fee-for-service higher levels of satisfaction ($p < 0.05$) for: quality of care, courtesy, follow-up and personal interest Cross-sectional: satisfaction mostly explained by availability ($r = 0.37$) and by having personal physician ($r = 0.18$) Longitudinal: satisfaction in second period associated with prior satisfaction ($p < 0.01$) Margin of difference on satisfaction between fee-for-service and prepaid plan increased over time Possibly related to having own physician Health status unrelated to satisfaction ***Conclusions:*** Concurrent assessment of availability has dominant effect on satisfaction
Greene *et al.*, 1994[284] ***Country:*** USA ***Setting:*** Hospital outpatient	***Determinants:*** 1) Features of consultation audio-taped and coded using Multi-dimensional Interaction Analysis system 2) Physician post-visit questionnaire on attitude to patient ***Context:*** Empirical study looking at patient satisfaction with consultation in older patients ***Design:*** Observational	***Sample/data collection:*** *n* = 18 doctors participated (2 refused) *n* = 110 patients participated (28 refused); aged over 60 yr, visiting physician for first time ***Measurement of satisfaction:*** Post-consultation: 14-item satisfaction scale adapted from others: 1) Overall satisfaction with visit 2) Satisfaction with physician attentiveness, task directed skills, interpersonal skills, partnership building ability ***Method of analysis:*** Quantitative	***Results:*** Older patient satisfaction positively correlated with physician questioning, supportiveness, patient information giving, length of visit, shared laughter, physician satisfaction ($p < 0.10$) ***Conclusions:*** Older patients prefer encounters with the following features: 1) Supportiveness and laughter 2) Questioned and given opportunity to provide information on their own agenda items 3) Physician provides structure

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Greenley *et al.*, 1982[230] ***Country:*** USA ***Setting:*** Various organisations (primary care, general and special clinics)	***Determinants:*** Sociodemographics: attitudes; help-seeking experiences; psychological symptoms (10-item Crandall and Dohrenwend symptom scale) ***Context:*** Tests empirically the relationship between psychological distress and satisfaction/ dissatisfaction, and investigates 4 hypotheses concerning the underlying causal factors ***Design:*** Observational	***Sample/data collection:*** Personal interviews in home 366 anxious and depressed patients from 10 organisations; 56% response rate ***Measurement of satisfaction:*** 1) Humaneness index: courtesy, friendliness, warmth, staff interest 2) Competence index: 4 items 3) General quality of service: 7-point scale Own instrument ***Method of analysis:*** Quantitative	***Results:*** Gender, age, income, education and household role significantly related to psychological distress and satisfaction ($p < 0.01$) After controlling for these factors, psychological distress significantly associated negatively with all 3 satisfaction measures ($p < 0.05$) Older and less well educated patients more satisfied ($p < 0.01$) Patients who perceived worsening problems less satisfied ($p < 0.01$) Maximum of 4% of variance in patient satisfaction explained ***Conclusions:*** Dissatisfaction concentrated in group of patients with psychological distress who deny problems No support for hypotheses that individuals with psychological distress are more dissatisfied because they are more dissatisfied with their lives, receive negative responses from professionals, or do not have their psychological needs met by professionals
Gross *et al.*, 1998[224] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Satisfaction with time spent with family physician related to: 1) Sociodemographic characteristics 2) Patient characteristics 3) Physician characteristics 4) Visit length 5) Visit type: well-care, acute, chronic 6) Time use during visits: chatting, structuring the interaction, counselling, history taking, eliciting family information, negotiation, providing feedback, physical evaluation, responding to patient questions, assessing patient compliance, delivering preventive services, health education, promotion, planning treatment, performing procedures 7) Patient health status: 5-item index ***Context:*** Empirical study to investigate relationship between satisfaction and time use during consultation ***Design:*** Observational	***Sample/data collection:*** 138 family physicians and consecutive (not new) patients aged >17 yr, each observed on 2 observation days ($n = 2315$): 1) Direct observation of visit using Davis Observation Code 2) Patient exit questionnaire 3) Medical record review Observation of 20 different behavioural categories during every 15-second interval of each patient visit ***Measurement of satisfaction:*** Questions taken from Visit Specific Questionnaire – 9 items measured on a 5-point Likert scale: 1 = poor, 5 = excellent ***Method of analysis:*** Quantitative	***Results:*** 80% of patients rated visit as very satisfactory or excellent Patients who were white ($p = 0.013$), older ($p < 0.001$) or healthier ($p = 0.008$) more likely to be satisfied with time spent Education and gender not significant Time spent correlated with satisfaction ($p < 0.001$) Patient and physician characteristics not related to satisfaction Visits for well-care more likely to be associated with satisfaction with time spent Visit behaviours that correlate significantly with greater satisfaction: chatting ($p < 0.001$), doctor evaluation and feedback ($p < 0.003$), planning treatment ($p < 0.05$) and nutrition ($p < 0.05$) ***Conclusions:*** Physicians can enhance patient satisfaction by spending more time with them and taking a small proportion of time chatting about non-medical topics They should allow sufficient time for exchange with the patient, particularly if feedback is necessary Results illustrate dilemma under managed care, where consultations are time constrained

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Hall *et al.*, 1988[130] ***Country:*** International ***Setting:*** Healthcare in general	***Determinants:*** Relation between provider behaviours in medical encounters and patients' satisfaction 5 major groups of provider behaviours: information giving, questions, competence (technical and interpersonal), partnership building, socio-emotional behaviour (body movements, social conversation) ***Context:*** Empirical ***Design:*** Review	***Sample/data collection:*** MEDLINE review 1965–1985 yielding 55 publications covering 41 datasets ***Measurement of satisfaction:*** Based on data from investigations included in the review ***Method of analysis:*** Quantitative	***Results:*** Satisfaction highly significantly ($p < 0.001$) associated with more information giving, perceived technical and interpersonal competence, providers' partnership building, non-verbal behaviour, social conversation, and more communication time Overall satisfaction was negatively associated with negative talk Satisfaction was not significantly related to question asking by providers ***Conclusions:*** Of all the patient variables considered, satisfaction has the most consistent relation to provider behaviour Satisfaction most dramatically predicted by information imparted by providers Uses findings of meta-analysis to propose a theoretical approach to predicting patient outcomes from physician behaviour Study also investigated effect of provider behaviour on compliance, recall, age, gender and social class of patients, but these results are not reported in this review
Hall and Dornan, 1990[316] ***Country:*** International ***Setting:*** Healthcare in general	***Determinants:*** Sociodemographic characteristics of patients: age, ethnicity, sex, social status, income, education, mental status, family size ***Context:*** Empirical study ***Design:*** Review	***Sample/data collection:*** Electronic database search *n* = 110 articles met inclusion criteria ***Measurement of satisfaction:*** 11 aspects considered: access, cost, overall quality of care, provider humaneness, provider competence, information giving by providers, bureaucracy, physical facilities, physician attention to psychological problems, continuity of care, outcome of care Items summed for global score ***Method of analysis:*** Quantitative	***Results:*** More satisfied patients tended to be older, white and married (i.e. modal direction of correlations in >76% of studies) Greater satisfaction associated with older age and less education, and marginally significantly associated with being married and higher social class No overall relationships found for ethnicity, sex, income, family size Distributions of correlations significantly heterogeneous ***Conclusions:*** Finding weak correlations with socio-economic variables lends support to validity of satisfaction instruments that are designed to measure perceptions of events Authors perplexed that results for education and social status go in opposite directions

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Hall *et al.*, 1990[233] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Relationship between older patients' satisfaction and their health status as measured by self-report, chart reviews, physician ratings Other factors: primary care physicians' characteristics, sociodemographic characteristics of the patients, social contacts ***Context:*** Empirical ***Design:*** Observational	***Sample/data collection:*** 532 patients aged >70 yr in a health maintenance organization Uses baseline data from a randomised controlled trial Interview study ***Measurement of satisfaction:*** Developed and piloted a 12-item balanced scale Subjected to factor analysis that revealed a strong satisfaction scale Also included a global measure Instrument based on other validated scales ***Method of analysis:*** Quantitative	***Results:*** Greater satisfaction associated with better self-rated health and physical function, less emotional distress, more social acuity ($p < 0.001$ to $p < 0.05$) Satisfaction not related to physician health ratings, number of diagnoses, cognitive function, sociodemographic characteristics People who had been in a health maintenance organisation longer were less satisfied ($p = 0.02$) People with higher recent utilisation more satisfied ($p = 0.01$) Satisfaction varied significantly between physicians ($p < 0.005$) ***Conclusions:*** Authors argue that there is a need to investigate whether observed relationships are mediated by expectations
Halpin Schauffler *et al.*, 1996[270] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Whether patient satisfaction related to healthcare professional discussing health education topics (exercise, nutrition, smoking, injury prevention, motor vehicle safety, alcohol and substance abuse, sexually transmitted disease) with them during last 3 yr Sociodemographics, and co-payments collected as confounding variables Health plans categorised as: 1) Staff/group model health maintenance organisations (salaried physicians as gatekeepers) 2) Mixed models 3) Fee-for-service ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Part of 1994 Health Plan Value Check by Pacific Business Group: 5432 employees in 21 health plans offered by 4 large corporations Mail survey ***Measurement of satisfaction:*** Overall satisfaction with physician recorded on a 5-point Likert scale Direct measure using own instrument ***Method of analysis:*** Quantitative	***Results:*** 52% response rate Responders were likely to be older and women 62% of respondents reported that one or more health education topics had been discussed Topics most frequently discussed were: exercise (49%), nutrition (42%), smoking (21%) Vehicle safety least frequent (<3%) Highest rates of health promotion discussions in staff/group models and for people in poorer health Patients reporting health promotion discussions nearly twice as satisfied as those reporting no discussions Age and education not related to satisfaction Women and people in fee-for-service more satisfied with physician than men and people in staff/group health maintenance organisations ($p < 0.001$) ***Conclusions:*** Findings extend work that shows satisfaction related to patient-centredness to include prevention-orientated practice style as determinant of satisfaction Unclear whether patient or provider initiated discussions about health education, or how lengthy or how in-depth the discussions were Some important covariates omitted: health behaviour, comorbidity

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Hardy *et al.*, 1996[72] ***Country:*** UK ***Setting:*** In hospital	***Determinants:*** Very wide-ranging, including: socialisation process, ward and hospital facilities, staff attitudes, communication patterns Authors seek to identify the primary components of patient satisfaction and those aspects of the hospital environment that predict them They distinguish proximal (personal) and organisational aspects Sociodemographic factors ***Context:*** Theoretical approach, particularly organisational theories of participation ***Design:*** Observational	***Sample/data collection:*** 2 large questionnaire surveys of patients in different general hospitals: 1) n = 700 responses (88% response rate) 2) n = 483 responses (80% response rate) ***Measurement of satisfaction:*** Hospital patient satisfaction inventory: 100-item questionnaire rated on 3- or 5-point scales Own instrument ***Method of analysis:*** Quantitative	***Results:*** 3 components of proximal patient satisfaction: 1) Process of care by doctors and nurses and the hospital environment 2) Improvement in and understanding of health 3) Psychological well-being: anxiety, loneliness, control High process scores associated with staff attentiveness, information, socialisation, patient participation, cleanliness and ward facilities ($p < 0.001$) Predictors of health outcome scale: information, secondary staff attitudes, socialisation ($p < 0.001$) Predictors of psychological well-being: information, socialisation, patient participation, cleanliness, secondary staff attitudes ($p < 0.001$) Second study confirmed robustness of factor structure in first study ***Conclusions:*** Confirms the multifaceted nature of patient satisfaction 3 important areas: information giving, patient participation, socialisation (admission) practices
Harvey *et al.*, 1999[211] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** 1) Relationship between patients' decision-making preferences and decision-making opportunities and satisfaction with medical care 2) Sociodemographic variables ***Context:*** Based on decision-making involvement theory ***Design:*** Observational	***Sample/data collection:*** Cross-sectional design n = 266 veterans attending Veterans Affairs clinic 1 of 6 chronic conditions In-person interview at clinic, and questionnaire (completed at home) on decision-making preferences (7 items), decision-making opportunity (3 items), and satisfaction with care (4 general items) ***Measurement of satisfaction:*** 5-point Likert scales (strongly agree–strongly disagree) with 4 global statements about satisfaction with medical care, 2 negatively worded to control for acquiescent response bias ***Method of analysis:*** Quantitative	***Results:*** Higher preference for decision-making involvement inversely related to satisfaction ($r = -0.3$, $p < 0.001$) Higher decision-making opportunity related to higher satisfaction ($r = 0.32$, $p < 0.001$) Age correlated with satisfaction: older more satisfied ($r = 0.38$, $p < 0.001$) Education not significant Regression: 24% of variance in satisfaction accounted for by age, decision-making preferences and opportunities Decision-making preferences not significantly correlated with decision-making opportunities More educated people had higher preferences for decision-making ($r = 0.2$, $p < 0.001$) ***Conclusions:*** Significantly lower satisfaction associated with high preferences for decision-making and low provider-offered decision-making opportunities Higher satisfaction associated with low preference for decision-making (with either high or low decision-making opportunities) and with high decision-making preference and high decision-making opportunities Findings suggest healthcare providers can increase satisfaction by providing decision-making opportunities for patients who prefer involvement

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Hjortdahl and Laerum, 1992[280] ***Country:*** Norway ***Setting:*** General practice	***Determinants:*** 1) Effect of continuity of care on patient satisfaction with consultation Continuity of care recorded as: duration of relation with doctor; intensity of relationship; patients' perception as to whether present doctor was personal doctor (in Norway patients can change GPs as they wish) 2) Patient sociodemographic characteristics 3) Visit and doctor features ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** *n* = 3918, of which 3044 participated 133 GPs recorded 30 consecutive surgery consultations Questionnaire taken home after consultation; mailed return ***Measurement of satisfaction:*** Satisfaction with doctor measured indirectly – 6-point scale, 10 questions: doctor's communication skills, technical proficiency Global satisfaction Own instrument ***Method of analysis:*** Quantitative	***Results:*** No significant relationship between age and gender of patient and satisfaction with consultation, nor with doctor's age, gender Patients had 40% increased chance of being satisfied with consultation of doctors on fee-for-service compared with salaried doctor (patients did not know doctors' status) Weak significant association between satisfaction and duration of relation ($p < 0.03$) Intensity of relationship not significant When personal relationship established, patients significantly more satisfied; new patients and unscheduled/emergency patients less satisfied Personal patient–doctor relationship increased likelihood of being satisfied sevenfold compared with no personal relationship Patients with psychosocial reasons for consultation less satisfied than patients attending for somatic reasons ($p < 0.001$) ***Conclusions:*** Link between personal, continuous care and patient satisfaction
Holloway *et al.*, 1989[292] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** 1) Specific physician characteristics (communication skills, attitude, affect, affiliative, personal care, accessibility, promptness) 2) Prepaid versus fee-for-service 3) Demographics ***Context:*** Empirical study in context of effect of different payment modes on physician behaviour ***Design:*** Observational	***Sample/data collection:*** *n* = 1142 patients (90% response rate) in 5 family practices Questionnaire at clinic visit gathered data on: 1) Demographics 2) Frequency, duration, reasons for clinic use 3) Physician behaviour 4) Type of health plan 5) Satisfaction ***Measurement of satisfaction:*** Satisfaction measured directly: 8 items, 4-point response scale: billing, waiting room time, examination room time, staff courtesy, treatment by telephone, quality of care, referral process, sensitivity of doctor Own instrument ***Method of analysis:*** Quantitative	***Results:*** 4 physician behaviours significantly more important than rest in accounting for variance in satisfaction: 1) Sensitivity to patient needs and concerns: explained 21.6%, $p < 0.001$ 2) On time for appointments $p < 0.001$ 3) Prompt follow-up $p < 0.001$ 4) Personalised medical care $p < 0.005$ Whole regression model explained 33% of variance ***Conclusions:*** Complex relationships between physician behaviours and competence, and patient satisfaction and clinical outcome, present a challenge for building reliable models of satisfaction and quality of care

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Hopton *et al.*, 1993[225] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** How different patient characteristics influence responses to 31-item survey after consultation Perceived distress measured by Nottingham Health Profile ***Context:*** Empirical ***Design:*** Observational	***Sample/data collection:*** 1599 patients attending 43 GPs 81% completed satisfaction questionnaire 51% completed Nottingham Health Profile (these were significantly younger, healthier and had shorter waits than non-completers) ***Measurement of satisfaction:*** 31-item questionnaire covering waiting time, content of consultation, appearance and manner of doctor Own instrument ***Method of analysis:*** Quantitative	***Results:*** High levels of satisfaction Items with most negative responses were: waiting too long (18%), worries not alleviated (16%), doctor not relaxed (7%), doctor in a hurry (11%), issues not discussed (11%), doctor seemed to disregard patient's opinions (9%), patient disappointed by consultation (7%) Negative responses significantly related to: younger age, longer waiting time before consultation, shorter consultation, whether psychosocial issues dealt with and positive scores on 6 Nottingham Health Profile items of distress and pain Sex, existence of long-term health problems and whether or not prescription was given were not significant ***Conclusions:*** Patients experiencing pain or emotional distress more dissatisfied Interpretation of satisfaction surveys must take account of differing experiences of illness and distress Surgery organisation (waiting time and shorter consultations) influences satisfaction Management of psychological distress is also important
Howie *et al.*, 1991[272] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Length of consultation ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 21,707 consultations: 85 GPs recorded details on all surgery consultations for 1 day in every 15 for 1 year: time, psychosocial issues, health promotion component, doctor satisfaction ***Measurement of satisfaction:*** 33 questions about doctor attitude and effectiveness Own instrument ***Method of analysis:*** Quantitative	***Results:*** Doctors categorised on basis of mean consultation length as: fast (<7 minutes), intermediate (7–9 minutes), slow (>9 minutes) No difference on case loads (based on age and Nottingham Health Profile) for fast/slow doctors Significantly more favourable responses on satisfaction questionnaire in longer consultations (for 11 questions, $p < 0.01$; for 6 questions, $p < 0.05$) Doctors more satisfied with longer consultations ($p < 0.01$) Longer consultations identified more psychosocial problems ($p < 0.001$), dealt with more health problems ($p < 0.05$), and included more health promotions ($p < 0.001$) ***Conclusions:*** Part of broader study on quality of care

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Howie *et al.*, 1998[100] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Tests relationship between authors' concept of patient enablement and patient satisfaction Enablement captures themes of patient centredness and empowerment, and ability to cope with and understand health and illness Earlier work linked this to doctors providing more time in consultation Patient Enablement Instrument (PEI) includes 6 questions scaled on 3 levels ***Context:*** Test of enablement concept and instrument ***Design:*** Observational	***Sample/data collection:*** 818 patients (varied socio-economic mix) attending consultations over 1 week at 3 urban general practices: 74.9% response rate, $n = 613$ Questionnaires contained 2 of 3 instruments in variety of combinations Order of distribution determined by haphazard shuffling ***Measurement of satisfaction:*** Two established measures that use indirect measures: 1) Medical Interview Satisfaction Scale (MISS) 2) Consultation Satisfaction Questionnaire (CSQ) ***Method of analysis:*** Quantitative	***Results:*** No differences between practices Overall mean scores as % of maximum attainable scores: PEI: 44.1% CSQ: 76.9% MISS: 77.6% Rank correlations (complete scores): PEI and CSQ: 0.48 ($p < 0.01$) PEI and MISS: 0.47 ($p < 0.01$) Correlation of PEI and individual component scores: CSQ: 0.14–0.53 MISS: 0.21–0.53 Internal consistency of PEI fell when items of CSQ and MISS added to it ***Conclusions:*** "Enablement" is a primary care outcome measure and is related to, but different from, satisfaction

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Hsieh and Kagle, 1991[194] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** 1) Patients' expectations measured on a 6-dimensional (20-item) anticipation index (same categories as satisfaction measure) 2) Health status 3) Healthcare plan (fee for service or prepaid group) 4) Sociodemographics 5) Rating of importance of items on anticipation and satisfaction scales ***Context:*** Empirical approach searches for factors that best predict satisfaction ***Design:*** Observational	***Sample/data collection:*** Random sample of 650 from 10,573 faculty and staff employees of a university in Mid-West USA Mailed questionnaire: 63.5% responded, n = 401 Sample biased to white people, aged 26–36 yr, highly educated ***Measurement of satisfaction:*** Patient Satisfaction Questionnaire: 6-dimensional indirect measure, 5-point scale ***Method of analysis:*** Quantitative	***Results:*** Generally, women more satisfied than men ($p < 0.05$) Older and younger groups generally more satisfied ($p < 0.05$) Non-white people tend to be less satisfied with healthcare resources Fee-for-service more satisfied on physician conduct ($p < 0.05$) Prepaid group more satisfied on financial coverage and less satisfied with access ($p < 0.05$) Those reporting poor health had lower expectations and satisfaction Satisfaction strongly associated with expectations Higher expectations associated with high satisfaction Those who have positive expectations fulfilled are more likely to express satisfaction The most important determinants of overall satisfaction were patients' expectations of physicians' conduct and convenience Positive evaluation on one dimension did not necessarily carry over to others ***Conclusions:*** Patients' expectations were best predictors of satisfaction Health status, personal characteristics and health system features were not strong predictors The patterns of expectations and levels of satisfaction are complex and vary from one sociodemographic group to another More favourable perceptions of healthcare are not necessarily a result of receiving better care

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Hulka *et al.*, 1971[302] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Sociodemographic details System of healthcare used ***Context:*** Empirical approach: to test instrument and to see how characteristics of respondents influence satisfaction with medical care ***Design:*** Observational	***Sample/data collection:*** Low-income area; 254 people interviewed at home, from 161 randomly selected households 30% ≥60 yr, 56% black, 60% women, 23% <7th grade education, 63% working class, 76% had regular doctor, 83% had lived in community >3 years ***Measurement of satisfaction:*** 23-item questionnaire: 4 scales for 3 content areas, plus total score Cost, convenience (10 items) Personal qualities (7 items) Professional competence (6 items) Own instrument ***Method of analysis:*** Quantitative	***Results:*** Attitudes most favourable to personal qualities, then professional competence, and lastly cost/convenience (difference between means significant, $p < 0.001$) Smaller families and people with insurance more satisfied on cost/convenience ($p = 0.008$, $p = 0.04$ respectively) Higher education and skilled jobs positively related to satisfaction with professional competence ($p = 0.05$, $p = 0.018$ respectively) Overall satisfaction related to having a regular doctor ($p = 0.005$), insurance ($p = 0.05$), and a recent doctor's visit ($p = 0.001$) Differences in satisfaction were not related to age, race, marital status, duration of residence in community, number of symptoms ***Conclusions:*** Even in a relatively homogeneous population, satisfaction correlates with several sociodemographic variables
Hulka *et al.*, 1975[303] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Identify characteristics of respondents and their relation to healthcare system associated with variations in attitudes towards physicians and medical care Characteristics investigated: age, race, sex, marital status, family size, occupation, social class, type of health insurance, regular source of care ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Probability sample of households; $n = 1713$ adults in 1112 households Interview study ***Measurement of satisfaction:*** 1) Professional and technical competence of physician 2) Personal qualities of physician 3) Accessibility to care, including cost and convenience Own instrument ***Method of analysis:*** Quantitative	***Results:*** In general, attitudes more favourable than unfavourable Women more satisfied than men, and black people less satisfied than white people ($p < 0.05$) Black people most dissatisfied with cost and convenience No association between social class and satisfaction Having a regular physician and a long attendance with that physician correlated with positive attitudes Young adult black people expressed most dissatisfaction, especially in area of physician's personal qualities ***Conclusions:*** Problems of cost and accessibility remain for black people

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Jackson *et al.*, 2001[150] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Relationship between satisfaction immediately after visit and 2 weeks and 3 months later and preconsultation symptoms, expectations, functional status, mental disorders, sociodemographic characteristics Physician communication styles measured and doctors' own assessments of relationship with each patient recorded ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 500 patients of 38 doctors agreed to participate Refusers (n = 28) similar to participants in age, race, sex, symptoms All patients had physical symptoms ***Measurement of satisfaction:*** After consultation: unmet expectations and Visit Specific Questionnaire (indirect measures) completed in clinic Mailed questionnaire at 2 weeks and 3 months: global satisfaction, symptom outcomes, health-related quality of life ***Method of analysis:*** Quantitative	***Results:*** Proportion fully satisfied increased over time: 52% immediately after visit, 59% at 2 weeks, 63% at 3 months Older patients and those with better functional status more likely to be satisfied ($p < 0.001$) Satisfaction not associated with symptoms, pre-visit expectations, presence of mental disorder, physician characteristics Unmet expectations decreased satisfaction at each assessment stage ($p < 0.001$) Satisfaction immediately after visit predicted by aspects of doctor–patient communication and information giving ($p < 0.001$) 2-week and 3-month satisfaction reflected functional status and symptom outcome: improved patients most satisfied ($p < 0.001$) ***Conclusions:*** Temporally varying components of patient satisfaction suggest attention should be paid to timeframe when questions about satisfaction are asked To measure satisfaction with specific physician behaviour, questions should be asked immediately after the visit Satisfaction outside the context of an immediate visit may be a proxy for symptom or functional status improvement, rather than a measure of satisfaction Study suggests 2 separate models for patient satisfaction: 1) Immediate post-visit satisfaction = age + patient's expectations + functioning + doctor–patient relationship 2) 2-week/3-month satisfaction = age + patient's expectations + functioning + symptom improvement

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Jakobsson *et al.*, 1994[257] ***Country:*** Sweden ***Setting:*** In hospital	***Determinants:*** Natural experiment: evaluation of satisfaction pre- and post-change in nursing care organisation designed to counter negative impact of reduced budget (e.g. shorter patient stays) Changes: 1) Nursing care organisation (modified form of team nursing) 2) Individually planned care (diagnostic reasoning) 3) Quality assurance for aspects crucial for the quality of nursing care ***Context:*** Pragmatic study ***Design:*** Observational	***Sample/data collection:*** General, vascular and urinary surgery patients Excluded people with dementia or confusion, and non-Swedish speakers May 1991: *n* = 105 (recruited from all patients discharged during a 3-week period, 93% response rate) May 1992: *n* = 137 (recruited from all patients discharged within a 4-week period, 89% response rate) Questionnaire with 51 structured questions given after patients were discharged, but before they left the ward; replies returned in prepaid envelopes ***Measurement of satisfaction:*** Questionnaire widely used in Sweden (SPRI) Measured satisfaction in general and with: information and decision-making; contact; staff–patient relationship; physical nursing care; ward facilities; and physical treatment or examinations Open-ended questions at the end ***Method of analysis:*** Quantitative	***Results:*** No significant differences between the 2 years regarding the respondents' age, gender or other demographic factors Overall satisfaction rose after the intervention: 1991: 89.5% 1992: 95.5% (p = 0.08) Numbers feeling they received appropriate medical care also rose: 1991: 85.7% 1992: 95.5% (p = 0.006) Significant increases in satisfaction with decision-making (p = 0.002), and information about ward facilities (p = 0.07), future prospects (p = 0.003), illness/treatment (p = 0.05) More older patients (>55 yr) satisfied with information received in 1992 than 1991 (p = 0.01) Significantly fewer patients (p = 0.04) worried about violation of professional secrecy; significantly more patients (p = 0.003) thought there was someone to talk to about their personal situation and believed that they had been introduced to their registered nurse (p = 0.05) Other aspects of care where satisfaction improved were: privacy (p = 0.003); possibilities of activity (p = 0.002); possibilities to get to sleep (p = 0.006); pain relief (p = 0.02); assistance with personal hygiene (p = 0.02); assistance with problems coping with daily living at home (p = 0.003) Significantly more patients (p = 0.04) felt partly or completely recovered from illness after intervention ***Conclusions:*** The implemented intervention (nursing care organisations, which support the nurse–patient relationship combined with individually planned care) helped to counteract the impact of the cutbacks and thus contributed to improved satisfaction in several aspects Fruitful to include assessment of patient satisfaction to check the quality of nursing care

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
John, 1992[200] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Effect of prior satisfaction with health-care system in general, and same hospital, on patients' evaluations of current hospital experience Prior satisfaction assumed to determine expectations ***Context:*** Theoretical model presented and tested ***Design:*** Observational	***Sample/data collection:*** Recently discharged patients: n = 500 in each of 3 hospitals surveyed 353 (24%) response (Type of survey not mentioned) ***Measurement of satisfaction:*** Behavioural intent (to return to same hospital) Satisfaction measured indirectly, based on Patient Satisfaction Scale, Patient Satisfaction Questionnaire Measures of perceptions of service quality (11 dimensions) based on SERVQUAL: competence, credibility, security, reliability, courtesy, communicativeness, understanding, availability, responsiveness, physical environment (x2) ***Method of analysis:*** Quantitative	***Results:*** Satisfaction with previous healthcare in general significantly ($p < 0.05$) affected patients' perceptions of overall quality and of 6 of the 11 independent variables: competence, credibility, reliability, communicativeness, responsiveness, physical environment Satisfaction with previous healthcare did not affect satisfaction in general Prior impressions of same hospital had significant ($p < 0.05$) effect on perceptions of overall quality, intention to return, and all 11 service quality variables ***Conclusions:*** Patients' perceptions of quality of medical care influenced significantly by all previous experiences Providers must, therefore, manage expectations before and during hospital stay by external marketing communications and patient education to modify those that are unrealistic
Joos *et al.*, 1993[215] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Relationship between frequency with which physicians meet patients' desires for services and satisfaction Modified version of Patient Request for Services Schedule used to elicit desires for 31 types of service before consultation After consultation, patients indicated what services they received Data on age, education and health status also collected ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 243 male patients with chronic diseases in general medicine completed questionnaire in clinic Physicians blinded to study purpose ***Measurement of satisfaction:*** After visit, rated physician qualities: personal manner, communication skills, technical competence (using American Board of Internal Medicine Questionnaire) ***Method of analysis:*** Quantitative	***Results:*** Patients desired a mean of 11.9 services: 67% were met Desires for physical examinations and prescriptions most frequently mentioned and most likely to be met Many patients' desires for information and most desires for help with emotional and family problems were not met Satisfaction correlated with percentage of desires that were met ($p < 0.002$) Patients with most unmet desires were least satisfied with their physicians ($p < 0.001$) Services desired and received and satisfaction not related to socio-economic features of patients or physician characteristics Number of desires that were met fell significantly when patients cited more than 4 desires ***Conclusions:*** Used study to derive short 16-item Request for Service Questionnaire through factor analysis

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Kane *et al.*, 1997[243] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Health status: General functioning Specific symptoms (from experts): pain, jaundice, food tolerance, bloating 2 measures of outcome: Absolute health status 6 months after surgery Relative health status measured as difference between baseline and follow-up Confounding factors: demographics – age, sex, race, income, education ***Context:*** Develops and tests 2 theoretical models: satisfaction is related to absolute outcome or relative outcome ***Design:*** Observational	***Sample/data collection:*** Cholecystectomy patients in 43 hospitals in Minnesota, Feb 1992 to March 1993 *n* = 2841: completed data for 2116 75% had minimal access surgery, 97% white, 78% women, predominantly higher income groups, mean age 48 yr Interview before surgery; mailed questionnaire 6 months later to ascertain health status and satisfaction ***Measurement of satisfaction:*** 11 items, 4-point Likert scale, covering: operation, doctors, hospital, information, doctor's time, hospital staff Items grouped systematically using factor analysis: 3-factor solution interpreted as: quality of care (including information), hospital setting (including nursing), time with physician Reliability coefficients (alpha = 0.83, 0.84, 0.81 respectively) Own instrument ***Method of analysis:*** Quantitative	***Results:*** Positive relationship between all 3 measures of satisfaction and both absolute and relative versions of outcome Patients with better outcomes more satisfied Coefficients largest for absolute health status ($p < 0.01$) Younger patients more satisfied than older ($p < 0.01$) Patients having open surgery more satisfied than those having closed surgery ($p < 0.01$) Education positively related to satisfaction with physician time ($p < 0.01$) Income not significant Variance explained small: 0.03–0.08 ***Conclusions:*** After 6 months, patient satisfaction is related to how patients feel at that moment, so institutions with a less severe case-mix may expect better satisfaction ratings

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Kasteler *et al.*, 1976[123] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Reasons for "doctor shopping" (i.e. people who had sought to change doctor without being required to do so because of relocation or insurance details) Background details collected: 1) General attitudes, health beliefs: self-reliance, tendency to adopt sick role, hypochondriasis 2) Sociodemographic characteristics ***Context:*** Empirical investigation of doctor shopping ***Design:*** Observational	***Sample/data collection:*** 10% of stratified sample from lower and higher income residential areas (based on rents/property prices): 576 households were interviewed ***Measurement of satisfaction:*** Questionnaire on attitudes to physicians' professional competence and personal qualities, and cost and convenience of care ***Method of analysis:*** Quantitative	***Results:*** 43% of respondents were doctor shopping families (48% of high income, 37% of low income, $p = 0.01$) High scores on professional competence of doctors in general related to more doctor shopping by higher income respondents ($p = 0.07$) Respondents (high and low income) with less confidence in own doctor more likely to doctor shop ($p = 0.05$ to $p = 0.001$) Respondents (high and low income) not favourably impressed by their doctors' personal qualities more likely to doctor shop ($p = 0.05$ to $p = 0.001$) Favourable attitudes towards cost and convenience in both income groups diminished doctor shopping ($p = 0.05$ to $p = 0.001$) Waiting was related to doctor shopping only in lower income group Self-reliance and tendency to adopt sick role not related to doctor shopping Hypochondriasis caused high-income people to doctor shop ($p = 0.01$) ***Conclusions:*** Results suggest that patients are discriminating when choosing doctors
Kenny, 1995[212] ***Country:*** Australia ***Setting:*** Ambulatory: GP or specialist	***Determinants:*** 1) Physician attributes and interpersonal skills assessed using specially constructed questionnaire based on literature review 2) Patient sociodemographic data 3) Characteristics of visit (first time or return) 4) Time of visit 5) Purpose of visit ***Context:*** Empirical study Unique feature was removal of bias because physicians not told their consultations were being assessed Hierarchical framework to questionnaire: satisfaction hypothesised to be positively related to higher level activities of doctor ***Design:*** Observational	***Sample/data collection:*** $n = 272$, selected by multistage sampling stratified by geographical location Questionnaire and interview after consultation 4 types of practice: small group GP, medical centre, hospital outpatient, specialist medical rooms ***Measurement of satisfaction:*** 35 items to assess satisfaction with doctor–patient interview 4-point Likert scales Own instrument ***Method of analysis*** Quantitative	***Results:*** 52% very satisfied with visit 58% of variance in patient satisfaction ratings accounted for by two major factors: interpersonal warmth and respect, and amount of information communicated by doctor Other factors affecting satisfaction: number of patient requests perceived to be met by doctor ($p < 0.001$), length of consultation ($p < 0.005$), first-time visits associated with lower satisfaction ($p < 0.002$) No association between satisfaction and gender of doctor or type of practice No patients communicated dissatisfaction with doctor ***Conclusions:*** Interpersonal skills of the doctor that result in the communication of warmth, friendliness, empathy, respect for and interest in the patient, and the consistency of patient expectations with perceived outcomes of the consultation, can make a major impact on the level of patient satisfaction with medical consultation

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Kent Smith *et al.*, 1981[285] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Selected consultation characteristics, particularly physicians' verbal behaviours (casual conversations, reassurance, suggestions, opinions, information giving, information seeking), length of consultation, time on chart reviews, time on prevention, proximity to patient ***Context:*** Empirical study investigating relationship between patient satisfaction and interview characteristics Also patient understanding and retention of the physicians' instructions, which are necessary for patient compliance ***Design:*** Observational	***Sample/data collection:*** 11 physicians (7 residents and 4 faculty members) 29 patients (20 women) Age range 18–72 yr Patient–physician interview video-taped post-physical examination Post-consultation questionnaire to measure patient satisfaction and understanding Video-recording used to rate physicians' verbal behaviours using a modified Bales Interaction Process Technique (content analysis) ***Measurement of satisfaction:*** 1 global question asking for overall rating of consultation on a 5-point scale ***Method of analysis:*** Quantitative	***Results:*** No difference among physicians on global patient satisfaction and understanding More information giving significantly related to patient satisfaction ($p = 0.005$) and understanding ($p = 0.05$) Higher patient satisfaction associated with greater interview length ($p < 0.001$), increases in the proportional time spent by physician in discussing prevention ($p = 0.001$), information giving ($p = 0.001$), shorter chart review times ($p = 0.001$) Increased patient understanding associated with: proportional time spent presenting opinions ($p = 0.05$), information ($p < 0.05$), close physical proximity ($p = 0.05$), and reduced chart review time ($p = 0.05$) Most verbal categories not significantly related to satisfaction or understanding ***Conclusions:*** Number of interview characteristics that are under the control of the physician may have a significant influence on patient understanding and satisfaction during the initial interview

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Kerr *et al.*, 1998[206] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** The desire to disenrol from a health plan is taken as an indicator of patient (dis)satisfaction with care Study investigates which dimensions of satisfaction predict desire to disenrol; in particular, it explored the importance of access to specialty care, since this has been curtailed by cost-conscious managed care organisations Sociodemographic information was collected ***Context:*** Pragmatic study Survey undertaken by a large health plan Frequent changes in health plan enrolment are hypothesised to lead to discontinuity of care, which may compromise quality of care Understanding the determinants of the desire to disenrol may have implications for the management strategies of managed care organisations ***Design:*** Observational	***Sample/data collection:*** 17,196 enrolees from a large California healthcare plan Survey conducted by telephone Response rate was 45%, completion rate 75% 65% women, 71% white, 41% college graduate ***Measurement of satisfaction:*** The survey was based on the Group Health Association of America questionnaire of consumer satisfaction Rating scale of 1 (unacceptable) to 10 (superior or excellent) Categories included: overall, access, finances, technical quality, communication, choice and continuity, interpersonal care and outcomes Respondents were asked whether they would change plan, given the opportunity 4 satisfaction scales derived (alpha reliability >0.75): 1) Access to hospital emergency room care 2) Convenience of care 3) Doctor quality (includes technical and interpersonal) 4) Access to specialty care Also global measure ***Method of analysis:*** Quantitative	***Results:*** 19% said they would change health plans, given the opportunity 32% of those wanting to leave the plan gave dissatisfaction with the quality of care as the reason for leaving; another 32% cited problems with access to care Persons who wanted to leave their plan were significantly more dissatisfied on all 4 scales than those who did not want to leave or were unsure ($p < 0.001$) Doctor quality and convenience shared 67% of the variance of variables predicting desire to leave Race and age did not predict desire to leave Women ($p < 0.001$) and higher income ($p < 0.002$) more likely to want to leave Lower education less likely to want to leave ($p < 0.001$) Dissatisfaction with access to specialty care is a significant predictor of desire to leave a plan, even after controlling for other satisfaction dimensions and demographic characteristics; this is especially important for people recently denied access to specialist Women with more visits were more likely to want to leave the plan ***Conclusions:*** Healthcare organisations tend to limit access to specialists to control costs, but this seems to have the effect of increasing dissatisfaction and the desire to disenrol from the plan Desires do not always become an actuality because employers can control enrolments

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Khayat and Salter, 1994[71] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Sociodemographic characteristics: age, sex, social class, housing tenure, education ***Context:*** Pragmatic study tests suitability of patient satisfaction survey as management tool ***Design:*** Observational	***Sample/data collection:*** 2173 adults, 69.1% response from systematic random sample from electoral register, Medway District Heath Authority Postal questionnaire, self-completion ***Measurement of satisfaction:*** Directly measured: 1) Generally 2) On last occasion 5-point ordinal scales for: accessibility, overall care, seeing own doctor, waiting times at surgery, getting to surgery, out-of-hours access, time, information, examination during consultation, doctor as a person ***Method of analysis:*** Quantitative	***Results:*** Levels of satisfaction with access and overall care varied with age (younger less satisfied) ($p < 0.05$) Women, higher social classes and home-owners more critical of GP services than men, lower social classes and tenants ($p < 0.05$) Later school leavers, home-owners, higher social classes, more likely to disagree with view that patients are knowledgeable enough to judge technical skills of doctor ($p < 0.01$) Highest dissatisfaction: information giving, then waiting times ***Conclusions:*** Surveys and analyses of this sort can be used for audit and are increasingly important for GPs in the more competitive environment since the 1991 reforms
Koerner *et al.*, 1985[258] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Quasi-experimental evaluative study to compare patients' perceptions and outcomes of collaborative practice and team nursing Two similar 27-bed medical units used team nursing until 31 March 1982, when one moved to collaborative practice, which includes primary nursing and nurse decision-making Outcome differences assessed by retrospective record review ***Context:*** Theoretical analysis based on system theory ***Design:*** Observational	***Sample/data collection:*** All patients in collaborative practical unit (CPU) and team nursing unit (TNU) for selected periods at 4, 8 and 12 months into project CPU, $n = 180$ TNU, $n = 100$ Smaller sample in TNU because looser organisation meant many discharges missed Patients completed questionnaire on day before discharge ***Measurement of satisfaction:*** 44 items measured satisfaction indirectly, 5 dimensions: patient–provider interaction, quality of care, health education, knowledge of practitioners, environment of unit Own instrument ***Method of analysis:*** Quantitative	***Results:*** No significant differences between CPU and TNU patients All 11 items representing patient–provider interaction statistically significant in favour of CPU CPU patients rated provider knowledge significantly higher No significant differences in quality of care CPU patients reported obtaining significantly more information No difference between groups on physical environment, but CPU patients reported significantly more respect, privacy and caring No differences on outcomes such as length of stay, numbers of tests, referrals, cardiac arrests, deaths ***Conclusions:*** No differences in environment or tests, length of stay, complications or deaths, but CPU patients reported significantly higher ratings for interaction with providers and communication

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Korsch *et al.*, 1968[213] ***Country:*** USA ***Setting:*** Ambulatory care (emergency room)	***Determinants:*** Effect of doctor–patient interaction on patient satisfaction, controlling for patient expectations, nature of illness, socio-economic variables In the emergency room there is usually no long-standing relationship between doctor and patient, and no previous treatment of the ailment to confound the clinical situation ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 800 consultations with 64 residents tape-recorded and coded Background details collected from interview with mother and chart review immediately after consultation ***Measurement of satisfaction:*** Semistructured follow-up interviews 14 days after consultation included questions on general satisfaction and what was liked/disliked about the visit ***Method of analysis:*** Qualitative and quantitative	***Results:*** 76% of visits resulted in moderate–high satisfaction No significant differences with respect to social class, education, length of interview, diagnosis Satisfaction with physician significantly associated with friendly manner, and good information giving and communication skills ($p < 0.01$) Failure to have expectations met (e.g. tests, radiographs) or worries handled increased dissatisfaction ($p < 0.01$) More educated more likely to mention worries/expectations and have them handled ($p < 0.01$) ***Conclusions:*** Communication barriers contributed significantly to dissatisfaction
Kottke *et al.*, 1997[271] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** The extent to which patients appear to want preventive services and whether these are offered spontaneously by physicians ***Context:*** Pragmatic: health plan marketing ***Design:*** Observational	***Sample/data collection:*** 6830 adult patients in one clinic Mail survey (stratified random sample) to record: patient-reported rates of being advised to have 8 preventive services; patient satisfaction with preventive services; patient satisfaction with overall healthcare Developed a baseline patient recent-visit questionnaire ***Measurement of satisfaction:*** Group Health Association of America's index of patient satisfaction: a 4-item indirect satisfaction scale measuring overall satisfaction with healthcare received at the clinic ***Method of analysis:*** Quantitative	***Results:*** Self-reports of being advised to have a preventive service when due were correlated with higher levels of satisfaction with that specific service only at levels of $r = 0.16$ to $r = 0.35$ They were correlated less strongly ($r = 0.001$ to $r = 0.27$) with the Group Health Association of America's Satisfaction Index. ***Conclusions:*** Although there is a positive association between being advised to have a preventive service on the one hand and reporting satisfaction with care on the other, this association appears too weak to stimulate physicians spontaneously to recommend preventive services to their patients This suggests that, if preventive services are delivered at higher rates, they must become an explicit component of quality evaluations

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Kralewski *et al.*, 1988[312] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Investigates use of and satisfaction with hospitalisation and physician services in different health plans: 1) Health maintenance organisations 2) Fee-for-service 3) Health maintenance organisations/fee-for-service mix 4) Government/Medicare ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Random sample of 1014 households in Minneapolis/St Paul, USA 1985–1986 Cross-sectional study Participants interviewed ***Measurement of satisfaction:*** Satisfaction (direct measure) with hospitalisation (where relevant, approx. 100 households) and most recent physician visit 4-point scale, 8 aspects of hospital care considered, and 12 aspects of physician services ***Method of analysis:*** Quantitative	***Results:*** 32% health maintenance organisation, 38.5% fee-for-service, 8% health maintenance organisations/fee-for-service, 20% Government/Medicare 5.5% of households (6.4% of respondents) uninsured: largely young, unmarried, unemployed or employed in firms that do not provide health insurance 85% of Medicare recipients have supplementary insurance Satisfaction levels high (between 77% and 99% very satisfied or somewhat satisfied over all the aspects considered) regardless of type of plan No significant differences in satisfaction with hospitalisation between the different insurance plans The only significant difference in satisfaction with physician services between health plans was in cost ($p < 0.001$) Patients with health maintenance organisations were the most satisfied Fee for service patients were the least satisfied ***Conclusions:*** Contrary to anecdotal evidence, respondents did not indicate dissatisfaction with health maintenance organisations
Kravitz *et al.*, 1994[214] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Relationship between fulfilment of expectations and visit satisfaction for subgroups of patients Pre-visit reports of elements of care patients thought necessary compared with patients' and physicians' post-visit reports of elements of care provided, and patients' satisfaction with care List of 28 elements derived from discussions with clinicians and patient pretesting ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 396 patients aged 18–65 yr attending internal medicine clinic 337 (85%) participated and 304 (77%) returned completed questionnaires in clinic ***Measurement of satisfaction:*** Visit Specific Questionnaire: satisfaction in general, and with time spent, explanations, technical skills, personal skills 5-point scales; indirect measurement of satisfaction ***Method of analysis:*** Quantitative	***Results:*** Mean number of elements considered necessary was 9.35 Older, white, less well-educated respondents thought more elements of care necessary ($p < 0.05$) Not receiving care patient thought necessary associated with lower visit satisfaction ($p < 0.02$) Wanting and obtaining items related to satisfaction ($p < 0.001$) Mean number of items thought necessary but not received was 4.8 High agreement between physician and patient about care received ***Conclusions:*** Internal medicine patients had specific expectations for content of physician visits, but routinely failed to receive some items If patients' expectations are not carefully elicited and dealt with, the physician–patient relationship may be adversely affected

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Krupat *et al.*, 2000[298] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** How congruence between doctor and patient affects satisfaction Phase 1: identified 60 primary care physicians whose practice attitudes varied from patient-centred to doctor-centred as measured by Patient–Practitioners Orientation Scale (PPOS) Phase 2: patients completed PPOS and indicated satisfaction with physicians ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 44% of physicians (n = 177) from different delivery system types in Harvard Pilgrim Health Plan responded Scores on PPOS normally distributed, so 20 of each of the most patient- and doctor-centred physicians randomly selected: 20 middle scoring physicians added to sample 670 (67%) of patients returned their questionnaires, of which 453 were useable ***Measurement of satisfaction:*** 10-item American Board of Internal Medicine Patient Satisfaction Questionnaire ***Method of analysis:*** Quantitative	***Results:*** Younger, female, healthier, better-educated patients were more patient centred Female physicians and those taking interviewing courses were more patient centred No patient variables (gender, age, education or patient/doctor centredness) associated with satisfaction Patient-centred physicians associated with higher satisfaction ($p < 0.05$) Satisfaction low when patients more patient centred than doctors Satisfaction higher among less patient-centred patients ($p < 0.05$) ***Conclusions:*** Patients were highly satisfied when their physicians had matching orientation or were more patient centred than they were Satisfaction lower when doctors were less patient centred
Krupat *et al.*, 2000[240] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** To investigate association between patient characteristics and reported problems with obtaining information (30 questions) and evaluations of care Patient characteristics: sociodemographic, health status, desire for involvement, desire for control ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 3602 surgical patients responding to nationwide survey by Picker/Commonwealth Programme for Patient-Centred care 62 hospitals (of 141 contacted) participated Interviews, 3 months after discharge ***Measurement of satisfaction:*** Cleary's 5-item satisfaction index: courtesy and helpfulness of doctors and nurses, availability of nurses, organisation of hospital services and staff 5-point scale, measured satisfaction indirectly ***Method of analysis:*** Quantitative	***Results:*** Surgical patients similar in socio-economic factors to all patients 4 information factors were identified: surgical information, recovery information, general information, sensory information; each was significantly related to evaluations ($p < 0.05$) Largest contribution to satisfaction was general information No correlation between demographic variables and factor scales Older and healthier patients more satisfied ($p < 0.001$) Desire for involvement interacted with information received in determining patients' evaluations: people wanting to be involved more dissatisfied if received less information ($p < 0.001$) ***Conclusions:*** Fewer information problems associated with more positive evaluation of hospital experience Relationship between information and evaluations of quality generalisable across patients, conditions and hospitals, and should be defined more broadly to include that given by a variety of providers to family, and about medications and home recovery

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Kvamme and Hjortdahl, 1997[286] ***Country:*** Norway ***Setting:*** Primary care	***Determinants:*** Patient views: expectations (needs and wishes) and priorities Part of European study ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 830 questionnaires handed to patients in 12 GP practices in Norway; 431 (52%) responded and returned questionnaire direct to research team ***Measurement of patient satisfaction:*** Development of own European measure covering areas: the GP's medical work, the relationship between patient and practitioner, information and support to the patient, availability of practice and practitioner, and organisation of practice 8 statements with each (40 in total) rated 1 (not at all) to 5 (particularly important), giving priority ***Method of analysis:*** Descriptive statistics	***Results:*** Average age of respondents 49 yr; 69% were women Average contact with GPs 3.2 times every year and time with current GP was an average of 9.9 yr Practitioners' time available and skills when it comes to listening, discussing and explaining were valued the highest Next came professional secrecy and the patient's experience of confidence regarding discussing important matters with the practitioners Fast access in illness was ranked next ***Conclusions:*** GPs should have a broad, professional competence They should listen, discuss, and explain and guarantee their professional secrecy Quality improvement on the basis of patients' evaluations of practitioners and their practice should become an integrated and natural part of a professional practice, to improve organisation of the practice, its medical content, and inter-human relations
Leiter *et al.*, 1998[256] ***Country:*** Canada ***Setting:*** In hospital	***Determinants:*** 1) Nurse burnout (change of professional attitudes in negative way because of job strain; includes exhaustion, cynicism, lack of personal efficacy) 2) Nurse intention to quit 3) Nurse meaningfulness of work ***Context:*** Theoretical model postulates nurse burnout symptoms impact on patient satisfaction ***Design:*** Observational	***Sample/data collection:*** 605 patients (58% response rate) and 711 nurses (83% response rate) from 116 patient units in 2 hospitals ***Measurement of satisfaction:*** Patient Judgements of Hospital Quality questionnaire, assessing satisfaction indirectly Patient satisfaction measures include: rating of your nurses (5 items), rating of your doctors (4 items), information provided (4 items), coordination of care (3 items) ***Method of analysis:*** Quantitative	***Results:*** Higher patient satisfaction associated with units where nurses found work meaningful Patients on units where nursing staff felt more exhausted or more likely to express intention to quit expressed lower satisfaction ($p < 0.001$) No statistically significant relationship between patient satisfaction and professional efficacy ***Conclusions:*** Shows the importance of nursing influence on patient satisfaction

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Like and Zyzanski, 1987[216] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Social psychological elements in the clinical encounter: 1) Fulfilment of patient requests (note distinction between requests and expectations) 2) Qualities of encounter Confounding variables: characteristics of patient, physician and healthcare system ***Context:*** Theoretical analytical research model constructed and tested ***Design:*** Observational	***Sample/data collection:*** Convenience sample of 150 adult patients (96% response rate) Administered 23-item Patients' Perspective Interview and 27-item Patients Request For Services Schedule prior to encounter Post-encounter: Patients' Services Received Schedule Physicians (n = 23) completed the 32-item Physicians Clinical Perspective Questionnaire post-visit ***Measurement of satisfaction:*** Part of Patients Services Received Schedule, 5 questions: overall, with time, interaction, services Own instrument ***Method of analysis:*** Quantitative	***Results:*** Regression analysis showed that at least 19% of the variance in satisfaction with the encounter may be attributed to meeting requests Satisfaction not related to patient sociodemographic characteristics, health characteristics, physician encounter characteristics Satisfaction significantly related to female gender, length of time registered with doctor, patient knowledge about condition Strong inverse relationship between satisfaction and desires not met ($p < 0.001$), and positive relationship between satisfaction and meeting desires ($p < 0.001$) ***Conclusions:*** In general, patients were highly satisfied with their encounters Meeting patients' requests increased their satisfaction with the encounter
Linder-Pelz, 1982[196] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Social psychological: expectations, values, entitlement – all rated with respect to aspects of encounter before consultation After encounter, same patients asked about perceived occurrences, and to rate satisfaction with same aspects of encounter ***Context:*** Testing 5 hypotheses as developed in Linder-Pelz, 1982[109] ***Design:*** Observational	***Sample/data collection:*** First-time attendees (to avoid contamination of satisfaction with previous care) for check-up, diagnosis or chronic care n = 125, 64% women, 14% white, median age 54 yr, mean education of 9.5 yr, 70% Medicare or Medicaid ***Measurement of satisfaction:*** 3 dimensions: doctor conduct, convenience, general satisfaction (derived from factor analysis shown in Linder-Pelz and Struening, 1985[346]) Own instrument ***Method of analysis:*** Quantitative	***Results:*** Social/psychological variables together explained <10% of variance in satisfaction Expectation had most influence on satisfaction with doctor conduct ($p < 0.001$), and general satisfaction ($p < 0.05$) Values and feelings of entitlement unrelated to satisfaction Satisfaction greatest among patients with favourable expectations and favourable occurrences; lower for patients with favourable expectations and negative occurrences; least for patients with negative expectations and negative occurrences ($p < 0.001$) ***Conclusions:*** Some support for discrepancy model: the greater the discrepancy between perceived occurrences and prior expectations, the less the satisfaction

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Linder-Pelz and Struening, 1985[346] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Seeks to identify aspects of clinic visit that patients evaluate differently in the areas of: doctor conduct (humaneness and competence), accessibility, general satisfaction with visit ***Context:*** 3 theoretically-based hypotheses regarding factor structure of patient satisfaction tested ***Design:*** Observational	***Sample/data collection:*** Manhattan, 3 clinics; *n* = 155 Adults with chronic condition needing diagnosis or check-up 10% white, median age 54 yr, median education 10 yr, 66% women (15% eligible but refused to participate: not significantly different from participants) ***Measurement of satisfaction:*** 22-item questionnaire developed from published studies and expert opinion, and given to patients after seeing doctor Own instrument ***Method of analysis:*** Quantitative	***Results:*** 4 factors: Doctor conduct (10 items) General satisfaction (7 items) Convenience (4 items) Wait for appointment (1 item) Internal reliability: 0.82, 0.77, 0.53 respectively 18% and 7% of variance in general satisfaction explained by doctor conduct and convenience respectively Critical dimension was doctor conduct; patients wanted more time and information and a better examination No distinction between doctor humaneness and technical competence ***Conclusions:*** Patient satisfaction results from multiple evaluations of distinct aspects of care
Linder-Pelz and Stewart, 1986[197] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Patient and provider characteristics: 1) Sociodemographics of patients 2) Attitudes and perceptions of patients 3) Prior healthcare experiences and present health status 4) Physician sociodemographics ***Context:*** Theoretical model from Linder-Pelz, 1982[109] ***Design:*** Observational	***Sample/data collection:*** 181 first visits to Manhattan clinics over 8-week period, 85% (*n* = 155) participated No significant difference between participants and refusers Pre-encounter interview Post-encounter evaluation questionnaire ***Measurement of satisfaction:*** 4 dimensions: Doctor conduct General satisfaction Convenience Obtaining appointment (derived from factor analysis shown in Linder-Pelz and Struening, 1985[346]) Own instrument ***Method of analysis:*** Quantitative	***Results:*** Sociodemographic variables explained 20% of variation in satisfaction with doctor conduct (notably age [+], education [+] and self-paying) ($p < 0.001$) Sociodemographics explained very little variance in other dimensions of satisfaction, although age and self-paying remained significant ($p < 0.001$) Satisfaction not associated with previous use of facilities, family and friend use, physician age and gender Subjective health status positively related to satisfaction with obtaining appointment ($p < 0.001$) In total, independent variables explained 9–27% of variation in satisfaction scores ($p < 0.01$) Importance of variables fluctuated with nature of model tested ***Conclusions:*** Age was the key sociodemographic variable affecting satisfaction, with older patients being more satisfied Of the social psychological variables, positive expectation had the strongest effect on satisfaction

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Linn, 1975[204] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Relationship between patient characteristics, features of healthcare encounter and patients' evaluation of encounter Patient characteristics: age, sex, race, marital status, education, religion, satisfaction with community Encounter details: time, whether patient seen before, services provided ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Patient questionnaires completed in clinic for 1739 patient–provider encounters in 11 ambulatory care settings (2 solo practices, 2 university student health centres, 2 community clinics, 1 health maintenance organisation, 2 small hospital outpatient clinics, 1 large hospital outpatient clinic, 1 large private group practice) ***Measurement of satisfaction:*** 6 items in a general evaluation; 4 items to assess satisfaction with physician Own instrument ***Method of analysis:*** Quantitative	***Results:*** Independent correlates of general satisfaction: older age ($p < 0.001$), higher satisfaction with community ($p < 0.05$), greater continuity of care ($p < 0.05$) Satisfaction with physician related to: older age ($p < 0.01$), black or Spanish ($p < 0.001$), less education ($p < 0.05$), satisfaction with community ($p < 0.001$) Gender, religion, marital status of patients and type of service received not related to satisfaction Overall levels of satisfaction high ***Conclusions:*** The greatest differences in satisfaction occurred between settings attributed to differences in patient populations
Linn and Greenfield, 1982[226] ***Country:*** USA ***Setting:*** Hospital outpatients with serious chronic diseases	***Determinants:*** 5 measures of health status (closely correlated, $p < 0.01$): 1) Disability days in previous month 2) General health: 4 items, alpha = 0.84 3) Physical abilities and limitations: 9 activities, alpha = 0.85 4) Social health: 4 items, alpha = 0.75 5) Zung depression index, 20 items Situational variables 1) Age, sex, education, race, marital status 2) Employment status 3) Mode of transport to hospital ***Context:*** Empirical analysis of relationship between reported satisfaction and patients' assessments of their health and social circumstances ***Design:*** Observational	***Sample/data collection:*** Self-report, mailed questionnaire (arthritis, cardiology, endocrinology and general medical patients) $n = 804$ 65% response rate ($n = 519$) ***Measurement of satisfaction:*** Indirect measure, 3 dimensions, 5-point scales, based on Patient Satisfaction Questionnaire: 1) Art of care and provider characteristics: 9 items, alpha = 0.84 2) Technical quality: 6 items, alpha = 0.86 3) Efficacy: 4 items, alpha = 0.83 ***Method of analysis:*** Quantitative	***Results:*** 56% in much pain, >60% could not work or walk, 45% depressed Multivariate analysis showed age, ethnicity and health status to be independent significant influences on satisfaction (p-values varied) Older, non-white people and less sick were more satisfied Health status and situational variables explained 12%, 13% and 21% of the variance in the art, technical and efficacy ratings respectively ***Conclusions:*** Health ratings, especially general health, and social factors affect satisfaction This raises some concern about the validity of patient satisfaction ratings as a measure of quality of healthcare delivery

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Malbon *et al.*, 1999[265] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Factual questions about general practice: access, obtaining appointment, waits in surgery, opening hours, emergencies, continuity of care, quality of care, communication with GP, premises, knowledge about changes to NHS ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 1139 adult Londoners interviewed by telephone about satisfaction with GP services, using structured schedule Quota sampling ***Measurement of satisfaction:*** How satisfied overall and whether felt like/had complained Direct, indirect and experience-based measures of various aspects of general practice care ***Method of analysis:*** Descriptive statistics	***Results:*** Satisfaction levels high with all aspects Older people more satisfied than younger people No significant differences in satisfaction across socio-economic groups Most dissatisfaction with waits for appointments and in the surgery Almost 1 in 6 had considered making a complaint, but less than 3% had done so ***Conclusions:*** Authors comment that majority of Londoners think highly of the primary care they receive, even though some objective indicators suggest services are second best (e.g. quality of premises)
McCann and Weinman, 1996[278] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Effect of a leaflet to enhance patient participation in consultation – 2 groups: 1) Intervention leaflet 2) Control leaflet – dietary advice Outcomes measured: 1) Length of consultation 2) Number of questions asked by patient 3) Patient satisfaction score 3) Doctors' feeling about consultation 4) Change in patient's health status in 4 weeks after consultation 5) Number of patient visits to GP in following year ***Context:*** Empirical study to explore the effect of intervention to improve patient participation and doctor–patient communication and satisfaction ***Design:*** Observational	***Sample/data collection:*** Randomised controlled trial, double-blind randomised sample *n*= 120 (74% participation rate) at one GP surgery ***Measurement of satisfaction:*** 26 items, 5-point response format: Medical Interview Satisfaction Scale 3 subscales: cognitive, behavioural, affective ***Method of analysis:*** Quantitative	***Results:*** Groups comparable at baseline: Patients in intervention group: significantly longer consultations, asked more questions ($p < 0.05$) No significant effect on patient satisfaction Doctor reported better understanding of patient ($p < 0.01$) Health improved to a greater degree for patients aged under 40 yr and in higher social classes in the intervention group compared with the control group ($p < 0.05$) However, no significant effect on health-related quality of life scores No effect on number of GP visits in subsequent year ***Conclusions:*** The study showed that a relatively simple leaflet could affect patients' behaviour during a consultation, even though there were no effects on patient satisfaction or utilisation rates

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Meland *et al.*, 1996[299] ***Country:*** Norway ***Setting:*** General practice	***Determinants:*** 127 patients invited to participate in 1-year follow-up intervention, randomised to conventional care (n = 58) and patient-centred, self-directed approaches (n = 69) ***Context:*** Empirical ***Design:*** Experimental	***Sample/data collection:*** Opportunistic screening for cardio-vascular risk 468 male patients aged 30–59 yr attending for various reasons screened to identify high-risk people Questionnaires completed at home ***Measurement of satisfaction:*** General question on satisfaction with care at end of 12-month intervention Own instrument ***Method of analysis:*** Quantitative	***Results:*** Conventional care patients more satisfied (p = 0.02) Self-directed group more satisfied with their own efforts for improvement (p = 0.01) ***Conclusions:*** Intervention aimed at raising patient responsibility and self-direction associated with lower satisfaction with care, but increased satisfaction with own efforts
Miller Bader, 1988[253] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Nursing care behaviours that predict satisfaction Sociodemographic characteristics: age, sex, education, occupation ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Convenience sample of 50 hospitalised individuals: medical/surgical units Questionnaire ***Measurement of satisfaction:*** Patient Satisfaction Instrument covering: 1) Professional/technical competence 2) Interpersonal relationship, trust 3) Nurse as information provider 3 items on general satisfaction, including willingness to return ***Method of analysis:*** Quantitative	***Results:*** Trust and professional/technical competence scores higher than those for information giving 15 nursing care behaviours were related to overall satisfaction and 12 of these were affective (nurse spends time with me explaining, is friendly, sensitive, attentive etc.) Remaining 3 were professional/technical (precise, skilful) ***Conclusions:*** Satisfaction is a legitimate measure of quality of care Patients require further information from nurses, and want to involve themselves in their care Aspects of nursing care giving most satisfaction are affective behaviours

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Mirowsky and Ross, 1983[205] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Paediatric study: 1) Type of practice 2) Child health and quality of technical and psychosocial care (from observation of consultation) 3) Number of visits (from medical records) Federal Employees Health Benefit Program study: 1) Type of plan and if has personal physician 2) Self-reported health status, race, gender 3) Number of visits in 12 months (from medical records) ***Context:*** Develop and test reciprocal model involving satisfaction and utilisation, after controlling for confounding factors Empirical study investigates relationship between satisfaction and doctor visits: self-regulating or self-amplifying system? ***Design:*** Observational	***Sample/data collection:*** 2 data sets 1) Cross-sectional survey of paediatric practices: 71 physicians (61 participated); 7 families per paediatrician; home interview – 86% response rate, *n* = 376 2) Panel survey of Federal Employees Health Benefit Program: 1124 members contacted; 73% completed 2 questionnaires (*n* = 821) ***Measurement of satisfaction:*** 1) Mothers' satisfaction on basis of opinions about paediatricians' care/whether would recommend/change paediatrician 2) Ratings (indirect measure) of 7 dimensions, including information, and courtesy, interest etc. of physician In each study, responses to individual items summed to generate summary score ***Method of analysis:*** Quantitative	***Results:*** Paediatric study: Older and healthier children visit less Better psychosocial care and higher satisfaction increases visits More visits reduce satisfaction Federal Employees Health Benefit Program study: Satisfaction higher if have fee-for-service, personal physician Visits higher for white people, women, not fee-for-service, and if highly satisfied More visits reduce satisfaction ***Conclusions:*** Both studies suggest that satisfaction and visits form a self-regulating system More satisfaction with doctor results in more frequent visits, but, as contact increases, the probability that patients' high expectations will be unmet also increases Patients may become disillusioned if doctor has no easy solution for chronic problems Doctors may seek to deter frequent attendees to reduce dependency

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Morrell *et al.*, 1986[273] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Effect of time booked for appointment and doctor stress on patient satisfaction Patients booked at 5-, 7.5- or 10-minute intervals Clinical content recorded on encounter sheet and audio-tape, especially: nature of physical examination (if any); prescribing; referrals and follow-up; recording of problems ***Context:*** Empirical study Average GP consultations are 5.5–6.6 minutes, and it is important to know the effect of time constraints ***Design:*** Experimental	***Sample/data collection:*** 780 consultations in one practice (275 at 5-minute intervals, 262 at 7.5-minute intervals and 242 at 10-minute intervals) Patients booked as usual into experimental sessions Cardiac monitor used to record doctor's heart rate during session ***Measurement of satisfaction:*** Questionnaire specifically designed to measure patient satisfaction after the consultation, especially regarding adequacy of information provided, and feeling that too little time was available (Direct and indirect measures) ***Method of analysis:*** Quantitative	***Results:*** Times ranged from 1 to >20 minutes for all types of consultation Median times: 5.2, 6.7 and 7.4 minutes respectively Consultations booked at 5-minute intervals compared with 7.5- and 10-minute intervals, doctors spent less time with patients and identified fewer psychological problems ($p < 0.01$), and patients were less satisfied (not significant) Blood pressure was measured twice as often in 10-minute than 5-minute consultations No differences in prescriptions or referrals, or in doctor stress as recorded on cardiac monitor Doctors complained more often of shortage of time with shorter consultations ($p < 0.001$) ***Conclusions:*** Problems in comparability of patients at baseline (patients with acute problems more likely to book into shorter consultations as more were available) Some aspects of modern GP care are likely to suffer if consultations are booked at too frequent intervals (e.g. preventive care, and identification of problems) and some evidence that longer intervals will lead to better care and greater patient satisfaction

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Mummaleneni and Gopalakrishna, 1997[306] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** A comparison of fee-for-service (FFS) and health maintenance organisations (HMOs) on access (office hours, waiting time, convenience), resources (availability of hospitals and doctors), cost and patient satisfaction ***Context:*** Develops and tests conceptual framework Pragmatic purpose: concentrates on managerially controllable variables with marketing interest Experimental study ***Design:*** Observational	***Sample/data collection:*** The study tested its propositions using secondary data provided by the US Department of Health and Human Services large-scale longitudinal study (3 yr) There were 3 groups: voluntary HMO enrolees (control group), an HMO experimental group (previously belonging to FFS plans and randomly assigned to an HMO), and an FFS group Groups were matched on health and sociodemographic factors; those eligible for Medicare payments and those aged over 62 yr were excluded Satisfaction data were collected at both entry and exit from the study Mailed survey n = 2891 responses Response rates ranged from 58% to 70% and participants were partially reimbursed ***Measurement of satisfaction:*** Mix of direct and indirect measures: access, availability, convenience, cost Overall satisfaction 5-point Likert scale ***Method of analysis:*** Quantitative	***Results:*** Group means for FFS and HMO plans were statistically different on 7 of 10 comparison dimensions ($p < 0.001$) HMOs were rated inferior to FFS on availability of specialists and hospitals FFS were found to be inferior on waiting time and emergency care For cost, HMOs were rated superior to FFS, and FFS were rated superior to HMO for overall satisfaction In all cases where there were significant differences between the voluntary and ascribed HMO members, the voluntary group showed a higher level of satisfaction ***Conclusions:*** Cost, access and resource variables account for 35% of the variance in overall satisfaction Levels of satisfaction in both the FFS and HMO groups increased over time Customer satisfaction with different aspects of care varies over time and between health plans

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Murray, 1987[309] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Healthcare plans: prepaid and fee-for service (FFS), 6 months after new containment programme Single clinic site and physician group Natural experiment Prepaid: comprehensive cover, limited to clinic, free to enrolees, providers receive monthly capitation and thereby assume risk FFS: comprehensive cover, enrolees pay monthly premiums and can get treatment at other clinics FFS reduces incentive for cost-effective behaviour by provider Cost containment encouraged by provider education about consequences of risk sharing, utilisation review, financial rewards for reducing patient care costs ***Context:*** Empirical study Author uses patient satisfaction as an indirect measure of quality of care ***Design:*** Observational	***Sample/data collection:*** 1) Audit of 343 patient charts of prepaid and FFS to compare groups Data obtained: individual age, sex, employment status etc. and indirect measures of health (medications, number of visits) and health behaviour 2) Patient satisfaction survey of 447 patients; some before and some after consultation to remove provider bias ***Measurement of satisfaction:*** Modified Rand Health Insurance questionnaire: 26-item direct Likert scale questionnaire Answers included 5 choices ranging from 1 (very dissatisfied) to 5 (very satisfied) ***Method of analysis:*** Quantitative	***Results:*** FFS group slightly older ($p < 0.01$) Minor differences in health and health behaviour between groups: prepaid significantly fewer major problems ($p < 0.05$), take fewer medications ($p < 0.04$), and have more visits to provider ($p < 0.01$) than FFS patients 97.5% response rate No differences in overall satisfaction between groups but significant differences for individual subdimension of humaneness: FFS significantly more satisfied ($p < 0.05$), and prepaid more satisfied with finances, but not significant ($p = 0.1$) No differences on access, availability or continuity Satisfaction lower when measured after consultation, but not significantly so ***Conclusions:*** Cost-containment does not seem to affect overall quality of care. However, of clinical significance is the demonstration that, while overall satisfaction levels do not seem to be affected, cost-containment pressures may compromise the humaneness of the provider Providers may be less motivated to satisfy patients for whom they have already received payment, because patient satisfaction does not enter into the equation for reimbursement

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Nelson and Larson, 1993[199] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Effect on overall satisfaction and behavioural intentions of: 1) Expectancy disconfirmation: "surprises" reported by patients about their hospital stay (open-ended question) 2) Patient sociodemographic characteristics, details of hospitalisation, perceived health benefit 3) Patient evaluations of specific hospital services, from Patient Judgement System: 41 items evaluating performance in 10 areas: admissions, daily care, information, nurses, physicians, ancillary services, living arrangements, housekeeping, discharge, billing ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Selected findings from database of Patient Judgement System that covers responses from 70,000 discharged inpatients in 100 hospitals Quantitative analysis uses patients surveyed by mail in 1 year; n = 15,019 patients in 69 hospitals Qualitative data about surprises from 2160 patients discharged from 12 hospitals ***Measurement of satisfaction:*** 1) Patients' intentions about hospital: to brag about it; to recommend it, and return 2) Overall patient satisfaction scale ***Method of analysis:*** Qualitative and quantitative	***Results:*** 39% of inpatients surprised by some aspect of hospital stay: 16% had good surprise; 13% had bad surprise; 10% had both Most common good surprises: overall quality of care, extras/perks, staff attitudes, outcome of hospital stay Most common sources of bad surprises: staff attitudes, outcomes of hospital stay, value/costs, restfulness of atmosphere, room-mate, treatment of family/friends Good surprises related to overall satisfaction Few patients commented on technical aspects of care Overall satisfaction affected independently by hospital-wide quality, health benefit, patient age (+) and education (–), and receiving a bad surprise (in order of importance) Good surprises also important, but less so ***Conclusions:*** Patients experience surprises and these determine patient satisfaction To provide satisfaction, it is better to prevent bad surprises than to engineer good ones
Patrick *et al.*, 1983[228] ***Country:*** UK ***Setting:*** Healthcare in general	***Determinants:*** How disability is associated with dissatisfaction Disability assessed using Sickness Impact Profile (British version): covers physical and psychosocial morbidity Confounding factors: age, sex, social class, emotional support, and practical support ***Context:*** Empirical approach ***Design:*** Observational	***Sample/data collection:*** Interview study, Lambeth Borough, 1978–1981 n = 1245, of which 1000 completed interviews 726 had disability Age 16–75 yr ***Measurement of satisfaction:*** General satisfaction: attitude towards medical profession – 14 items Specific satisfaction: with patients' own physician – 12 items Indirect measures Open-ended questions (content analysed) Overall satisfaction ***Method of analysis:*** Quantitative and qualitative	***Results:*** Item eliciting most dissatisfaction: information giving by doctor – mentioned by 35% with and 37% without disability Multidimensional scaling yielded an overall measure of general satisfaction and 3 submeasures of specific satisfaction: access, quality, recent experience with doctor Respondents with higher levels of disability more likely to be dissatisfied on all 3 measures of specific satisfaction than non-disabled respondents ($p < 0.05$), but disabled were not more negative about their doctors in general than non-disabled Recent adverse life event, psychosocial disability and poor self-ratings of health significantly increased probability of being dissatisfied ($p < 0.05$), while practical social support and older age reduced it ($p < 0.05$) ***Conclusions:*** Reported satisfaction is affected by physical and psychosocial disability

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Perneger *et al.*, 1996[314] ***Country:*** Switzerland ***Setting:*** Medical care in general	***Determinants:*** Effect of switching enrolees from an indemnity health insurance to managed care on health status and satisfaction ***Context:*** Empirical study ***Design:*** Observational (Natural experiment)	***Sample/data collection:*** 3 groups involved in mailed baseline and 1-year follow-up survey: n = 332 accepting switch to managed care, n = 186 who maintained indemnity coverage, n = 296 who were continuously enrolled in another indemnity plan ***Measurement of satisfaction:*** 25 statements derived from Patient Satisfaction Questionnaire ***Method of analysis:*** Quantitative	***Results:*** No differences in health status between groups after 1 year Significant reduction in smoking among managed care joiners (p = 0.003) Managed care joiners had lower satisfaction at follow-up than baseline; other 2 groups reported increased satisfaction Managed care joiners significantly less satisfied on all aspects except technical (p < 0.05 to p < 0.001) Least satisfied amongst managed care joiners were those who used gatekeepers (p < 0.002 to p < 0.015) Managed care joiners more likely to report deterioration in care over period of study than other groups (p < 0.001), most notably with continuity of care and access to healthcare services ***Conclusions:*** 1-year follow-up may be too short to see true effects
Perneger *et al.*, 1996[315] ***Country:*** Switzerland ***Setting:*** Ambulatory care (Same data set as Etter and Perneger, 1997[250])	***Determinants:*** Measure satisfaction in various healthcare settings in Switzerland: 1) Salaried gatekeepers in managed care organisation 2) Fee-for-service specialists in managed care organisation 3) Fee-for-service private group practice 4) University hospital outpatient clinic staffed by salaried residents ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Cross-sectional survey, attempted census of 1293 fully eligible patients from Geneva in 1993–1994 81% participation rate (n = 1027) Mailed survey 1 month after visit to a setting ***Measurement of satisfaction:*** 16-item questionnaire using indirect methods with 7 dimensions of patient satisfaction (general satisfaction, access, reception staff, physician: relation, time, explanations, technical) Summary score (0–100) calculated on each dimension; open-ended questions also coded positive/negative Own instrument based on validated measures ***Method of analysis:*** Quantitative	***Results:*** Managed care organisation members were younger (p < 0.05) Satisfaction levels for private group practice patients, university clinic patients, patients of independent specialists within a managed plan, and patients of managed plan gatekeepers were 83.2, 79.7, 78.5 and 69.5 (p < 0.0001) After allowing for confounding factors (age, gender, race, urgency of visit, type of doctor) these became 80.8, 78.8, 77.6, 72.7 (p < 0.0001) Gatekeepers scored worst on all 7 independent dimensions of satisfaction in unadjusted analysis, and on 5 dimensions in adjusted analysis (hospital clinic was worst on access, and independent specialists were worst on time with physician) Intergroup differences were largest for general satisfaction, but small and non-significant for satisfaction with explanations given by physicians and time with physician Open-ended responses confirmed quantitative analysis ***Conclusions:*** Patient satisfaction differed between healthcare settings and this remained statistically significant even after allowing for confounding factors Satisfaction differences were only partly attributable to characteristics of patients Residual differences presumed largely due to differences in provider performance The most striking finding was the relative dissatisfaction of patients consulting gatekeepers, possibly related to lack of choice of physician

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Pilpel, 1996[249] ***Country:*** Israel ***Setting:*** In hospital	***Determinants:*** 1) Caregivers' conduct – 3 subscales: doctors' behaviour (empathy, explanations, consideration for the patient and how much the patient liked the doctor); nurses' behaviour (treatment, comfort and patience); behaviours of medical team (professional behaviour, respect for patients' privacy, responsiveness to patients' requests) 2) Physical surroundings and conditions (e.g. overcrowding and noise) Study controlled for self-assessed health status and sociodemographic factors ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 148 patients (from a population of 181); 47% men, 25% aged ≥60 yr During a 20-day period, patients interviewed in hospital by 4 medical students (in mufti) using a pretested patient satisfaction questionnaire devised for the study ***Measurement of satisfaction:*** Global satisfaction: How would you rate your stay in the hospital? (5-point scale) Own instrument ***Method of analysis:*** Quantitative	***Results:*** Score for global satisfaction was 3.9 (standard deviation (SD) = 1.1) Mean score for caregivers' conduct was 4.3 (SD = 0.7), and ranged from 4.2 to 4.4 for the doctors', nurses' and medical team's conduct; they were significantly higher than the scores for physical surroundings and conditions Older and more educated patients tended to be less satisfied No significant differences between men and women Satisfaction with caregivers' conduct, self-assessment of health and satisfaction with physical surroundings and conditions significantly predicted global satisfaction; accounted for 36.8% of the variation, of which 87% related to satisfaction with caregivers' conduct Physical surroundings were least correlated (0.46) and caregivers' conduct most correlated (0.74) with global satisfaction Global satisfaction was correlated with the doctors' conduct (0.62) and nurses' conduct (0.64) ***Conclusions:*** Hospital patients value caregivers' conduct more than the physical environment

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Robbins *et al.*, 1993[203] ***Country:*** USA ***Setting:*** Hospital outpatient	***Determinants:*** Biomedical and psychosocial physician behaviour (20 types) during consultation Before the visit each patient completed a demographic questionnaire that also measured his or her feelings about physician care in general Pre-visit satisfaction results used as a control for the possibility that patients who were generally more satisfied with the healthcare system would be more inclined to view any particular visit in a positive light ***Context:*** Empirical study of relationship between amount of and type of information given by provider and patient satisfaction Two hypotheses tested: 1) Increase in satisfaction after health education 2) but decrease in history taking Previous studies have not used standardised terminology and instruments ***Design:*** Observational	***Sample/data collection:*** 100 new patients requesting appointments and randomly assigned to physicians at university medical centre outpatient facility 54 second- and third-year resident physicians involved (14 family practice and 40 internal medicine) Medical encounters were video-taped Physician behaviour during the visit was analysed with the Davis Observation Code After the encounter, patients completed a Visit Specific Questionnaire ***Measurement of satisfaction:*** 18 satisfaction questions adapted from Patient Satisfaction Questionnaire 4 components examined were: general satisfaction, physician humaneness, quality/competence, and access to care Indirect measures ***Method of analysis:*** Quantitative	***Results:*** No significant differences between participants and clinic population on sex, race or age Total visit-specific satisfaction was significantly related to total pre-visit satisfaction ($p < 0.05$) and 4 of the Davis Observation Code variables: health education ($p < 0.001$), physical examination ($p < 0.05$), discussion of treatment effects ($p < 0.01$), history taking (negatively related) ($p < 0.01$) About 25% of the variability in satisfaction scores was explained by these 5 variables ($R^2 = 0.26$) Time spent on history taking had a negative association with satisfaction ($p < 0.01$) ***Conclusions:*** Patients are most satisfied with medical visits in which they talk about their specific therapeutic interventions, are examined, and receive health education Extended general discussion of medical history is negatively related to satisfaction Patient satisfaction as an outcome measure complements, but does not supersede, health outcomes No subgroup analysis (e.g. by sociodemographic characteristics)

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Roghmann *et al.*, 1979[124] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Is satisfaction better interpreted as an outcome variable or an independent variable to predict utilisation? Utilisation measured from claim forms ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Medicaid recipients (stratified random sample): *n* = 311 households (77.8%) All women Interviews ***Measurement of satisfaction:*** 1) Roghmann's instrument: 14 statements (agree/disagree) about physicians and medical care as measure of general satisfaction 2) Personal experiences of respondents: 12 items (good and bad) ***Method of analysis:*** Quantitative	***Results:*** Several components of satisfaction are identified and related to utilisation Satisfaction is weakly predicted by utilisation but subsequent utilisation is strongly predicted by satisfaction Relationships vary strongly with provider, with no uniform pattern ***Conclusions:*** Multi-dimensionality of satisfaction concept confirmed Substantive relationships between satisfaction and utilisation not simple and clear cut

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Rogut *et al.*, 1996[227] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Whether disadvantaged patients were more likely to report problems with the interpersonal aspects of care and whether hospitals that serve large proportions of these patients were less likely to provide high-quality interpersonal care 5 hospital characteristics (size, staffing, percentage of Medicare patients) and 15 patient characteristics (socio-demographic and health status) investigated for impact on reported problems with care ***Context:*** Pragmatic study Research sponsored by United Hospital Fund, a non-profit philanthropic organisation: to explore interhospital variability Comparative data helps hospitals to view their performance in context Information needed to enhance improvements in hospital quality ***Design:*** Observational	***Sample/data collection:*** Telephone survey of 3423 randomly selected patients discharged from 15 New York hospitals in 1994 Adjusted response rate was 76% for patients and 83% for hospitals 48% of patients were minority group members; 43% were in a lower income bracket; 28% had fair or poor general health; 25% reported not having a regular doctor ***Measurement of satisfaction:*** 60 questions (based on Picker/Commonwealth instrument) about their experiences in 7 dimensions – how well hospitals are able to: respect the values, preferences, needs of patients; coordinate care; inform and educate patients; satisfy physical comfort needs; provide emotional support; involve family and friends in patient care; prepare patients and families for discharge 3 outcomes were used: reported problems with care from above categories; patient ratings of overall care, and doctor and nurse courtesy, helpfulness and availability; and patients' willingness to recommend the hospital ***Method of analysis:*** Quantitative	***Results:*** Only 2% of patients reported no problems with their care Differences among hospitals on average patient-reported problems were statistically significant ($p < 0.001$) The 5 hospitals with the highest problem scores also received the worst evaluations of care, with ratings above the mean 9% of respondents reported that they would not recommend the hospital Patients who reported more problems gave worse ratings of their care and were less likely to recommend the hospital Higher problem scores were observed among patients who were: younger; lower earners; had Medicaid or no insurance; were members of minority groups other than black or Hispanic; reported being in fair or poor health; did not have a regular doctor; were discharged from a medical service; or were interviewed in Spanish Problem scores were very high for patients in poor health and with low incomes The reduced regression model explained 12.7% of the variation in problem scores, with Medicaid discharges having a significant positive effect ***Conclusions:*** Patients in fair or poor health, those without a regular doctor, younger patients, and members of minority groups other than black or Hispanic, were particularly likely to have problems with aspects of hospital care In terms of hospital characteristics: Medicaid volume was a strong significant predictor of problem scores

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Ross *et al.*, 1981[207] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Satisfaction with care from prepaid multispecialty group and practices Examine client experiences (minutes in visit, technical care, history taking, physical examination, treatment and follow-up, attention to psychosocial aspects (e.g. willingness to listen and respect for client)) and how these relate to satisfaction; also relationship between experiences and expectations, and how these affect satisfaction ***Context:*** Theoretical study Having found no difference in satisfaction between prepaid and fee-for-service, authors specify and test a model in which expectations about medical care and experiences accumulating over time with care counteract each other ***Design:*** Observational	***Sample/data collection:*** 61 paediatricians, 18% in solo practice, 20% in partnerships, 36% in small (3–5) groups – fee-for-service, 26% in multispecialty prepaid groups Interviewed physicians for knowledge of family and observed physicians' behaviour in 1211 consultations Interviewed 376 of the families who had been observed (14% of families refused) ***Measurement of satisfaction:*** Mother's satisfaction with child's medical care based on: 1) Willingness to recommend 2) Thoughts of changing doctor 3) Availability of paediatrician 4) Opinion of paediatrician ***Method of analysis:*** Quantitative	***Results:*** Satisfaction, technical care, psychosocial and visit length varied significantly between type of practice ($p < 0.01$) Client satisfaction was not correlated with expert observations of physician behaviour (i.e. experiences) In regression analyses, psychosocial care related to satisfaction ($p < 0.05$) Technical aspects, length of consultation, child's health unrelated to satisfaction People in small groups significantly less satisfied than others ($p < 0.05$) In solo practices, satisfaction deteriorates over time and in large prepaid groups it increases ($p < 0.05$) ***Conclusions:*** People in large prepaid groups have positive experiences but lower satisfaction than people in solo practices, where experiences are judged negative by the authors They explain this by saying people start with negative expectations of large prepaid groups, which, coupled with little experience, results in low satisfaction As clients have more and more good experiences in large prepaid groups over time, the effect of their experiences will start to offset the effect of initial expectations In solo practices, the combination of expectations and experiences over time will have the opposite effect: satisfaction starts high owing to positive expectations but decreases over time as negative experiences accumulate Psychosocial experiences have the largest effect on satisfaction When time is taken into account, there may be no differences in satisfaction between alternative organisations of care Over time, as experiences accumulate, psychosocial care will have the largest effect on satisfaction The length of time the patient has been with the doctor is an important determinant of satisfaction

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Ross and Duff, 1982[283] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Status characteristics of physician (age, sex, religion, socio-economic background) affect client satisfaction under conditions of unmet expectations and lack of choice ***Context:*** Theoretical study Tested model that assumes clients have images of physicians and that the norm is of a middle-aged white male of Protestant or Jewish background Assume that if client chooses physician, status characteristics have no effect on client satisfaction Where clients have no choice (e.g. some large prepaid groups), role of expectations important Expectations are not static and may change over time ***Design:*** Observational	***Sample/data collection:*** 61 paediatricians, 18% in solo practice, 20% in partnerships, 36% in small (3–5) groups – fee-for-service, 26% in multispecialty prepaid groups Interviewed physicians for knowledge of family and observed physicians' behaviour in 1211 consultations Interviewed 376 of the families who had been observed (14% of families refused) ***Measurement of satisfaction:*** Mother's satisfaction with child's medical care based on: 1) Willingness to recommend 2) Thoughts of changing doctor 3) Availability of paediatrician 4) Opinion of paediatrician ***Method of analysis:*** Quantitative	***Results:*** Hypothesis supported In large prepaid groups, clients are less satisfied with doctors who do not fit the norm (i.e. who are women, older, Catholic and from low status backgrounds ($p < 0.05$ to $p < 0.001$)) Physician status had no effect on client satisfaction in small fee-for-service practices Partial support for hypothesis that client satisfaction with doctor increases with time, and for hypothesis that closer doctor–client socio-economic match counteracts negative effect of non-norm doctor Upper social classes significantly less satisfied with large prepaid groups ($p < 0.01$) ***Conclusions:*** Clients are influenced by who physician is, not just what he or she does
Ross Davies *et al.*, 1986[307] ***Country:*** USA ***Setting:*** Medical care in general	***Determinants:*** To compare acceptability to consumers of the care provided by health maintenance organisations (HMOs) and that provided in fee-for-service (FFS) system ***Context:*** Empirical study ***Design:*** Experimental	***Sample/data collection:*** Randomly assigned 1537 people aged 17–61 yr to either FFS plans that allowed choice of physician or a well-established prepaid HMO Control group of 486 people who had already chosen HMO ***Measurement of satisfaction:*** 43-item Patient Satisfaction Questionnaire covers: accessibility, availability, finance, quality of care, continuity, overall satisfaction Administered at enrolment, exit and periodically throughout 3–5 yr at clinic visits ***Method of analysis:*** Quantitative	***Results:*** Those who had chosen HMOs were as satisfied overall with medical care providers and services as FFS counterparts On average, people assigned to HMO less satisfied than FFS participants ($p < 0.001$) Attitudes towards specific features of care favouring HMO were: length of office waits ($p < 0.002$), costs ($p < 0.02$) Features favouring FFS: length of appointment waits ($p < 0.002$), parking ($p < 0.02$), availability of hospitals ($p < 0.0001$), continuity of care ($p < 0.0001$) No significant differences on emergency care, facilities, technical quality of care ***Conclusions:*** The mechanisms that lower costs for HMOs (reduced availability of hospitals and specialists) adversely affect attitudes towards availability of these resources relative to FFS Individuals have to make a trade-off between lower costs and greater satisfaction

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Rossiter *et al.*, 1989[310] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Differences between Medicare beneficiaries enrolled in a health maintenance organisation (HMO) plan and in the fee-for-service (FFS) sector Is disenrolment from an HMO related to dissatisfaction with the plan? ***Context:*** Empirical, quasi-experimental study to investigate effect of new programme whereby Medicare beneficiaries can enrol in capitated HMO or remain in FFS sector ***Design:*** Observational	***Sample/data collection:*** Random sample of nationwide beneficiaries who had been in same plan for 12 months or more 2091 in an HMO plan and 1000 in the FFS sector were surveyed by telephone A baseline survey was done for information on respondents' characteristics and decision-making about joining an HMO The follow-up survey was related to continuing satisfaction and reasons for disenrolment from the HMO ***Measurement of satisfaction:*** The following aspects of healthcare were covered: 1) The professional competence of providers 2) The willingness of providers to explain medical problems 3) Staff courtesy and consideration 4) Overall satisfaction with care 5) Convenience of travel 6) Convenience of obtaining appointments 7) Length of office waiting time Responses were on a 4-point scale: 1 = very dissatisfied and 4 = very satisfied ***Method of analysis:*** Quantitative	***Results:*** HMO enrolees (a self-selected group) were more likely to be dissatisfied with previous care, worried more about their health, had fewer health problems, and were less worried by continuity of care than FFS ($p < 0.05$) 80% of both HMO and FFS members were very satisfied with their overall healthcare HMO enrolees expressed less satisfaction with the professional competence of healthcare providers, and the willingness of HMO staff to discuss problems ($p < 0.01$) HMO enrolees were more satisfied with waiting times ($p < 0.05$) and claims processing ($p < 0.01$) No significant differences in satisfaction of members of samples who had been hospitalised HMO disenrolment was attributed to misunderstanding the terms of enrolment (changing existing physician) 29% of HMO enrolees reported increasing satisfaction over time ***Conclusions:*** High HMO satisfaction may reflect the free choice of HMO to Medicare beneficiaries

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Rowland-Morin and Carroll, 1990[293] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Specific behaviours in physician interview style Audio-taped consultation, transcribed, coded and analysed using Computerised Language Analysis System: interruptive behaviours, verbal time, silence time, number of questions/statements/silences, types of concept words, language reciprocity Selected language variables used as independent variables ***Context:*** Empirical study that attempts to identify specific variables in interviewer style that produce satisfaction ***Design:*** Observational	***Sample/data collection:*** Convenience sample: *n* = 52 new adult patients, randomly assigned to physicians; *n* = 5 male physicians ***Measurement of satisfaction:*** Medical Interview Satisfaction Scale: 29 items indirectly measure satisfaction on 7-point response format Also summary measure ***Method of analysis:*** Quantitative	***Results:*** 27% of variance in satisfaction scores explained by 3 aspects of a physician's language style: 1) Use of silence or reaction time latency between speakers 2) Language reciprocity as determined through reciprocal use of word-lists 3) Reflective use of interruptions in interview Question asking not related to satisfaction Only use of silence directly and significantly correlated with satisfaction (positive) ***Conclusions:*** Results consistent with principles of patient-centred interviewing
Rubin *et al.*, 1993[308] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** To compare patients' evaluations of medical care in different kinds of practices: solo, multi-specialty group, health maintenance organisation under fee-for-service, or pre-paid physician arrangements ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Survey of adult outpatients in clinic after visit Sample weighted to represent population of patients visiting physicians in each practice type *n* = 367 physicians; *n* = 1761 patients at start of Medical Outcomes Study ***Measurement of satisfaction:*** Overall rating of visit (5-point scale) A random half of the sample also completed the Visit Specific Questionnaire, which rated providers' technical skills, personal manner, explanations of care, time spent, appointment wait, office wait, convenience of office location, telephone access ***Method of analysis:*** Quantitative	***Results:*** Patients of solo practitioners more likely to rate visit as excellent than multi-specialty group or health maintenance organisation patients ($p < 0.001$) No significant differences between fee-for-service and prepaid arrangements, although fee-for-service ratings generally higher Patients in solo practices rated all aspects of care higher than health maintenance organisation Physicians with lowest 20% of ratings were 4 times more likely to lose patients than physicians in highest 20% of ratings ($p < 0.001$) ***Conclusions:*** Some possible bias noted by authors: high refusal rate by solo practitioners Also, solo practitioners distributed own forms

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Savage and Armstrong, 1990[169] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** Effect of either directing or sharing style of consultation on patient satisfaction: 1) Immediately after consultation (89% response) 2) Mail back 1 week later (58% response) Patients randomly allocated to directing or sharing style by receptionist, and card given to doctor at start of consultation Consultations timed Style checked by listening to audio-tapes of random consultations ***Context:*** Empirical study ***Design:*** Experimental	***Sample/data collection:*** *n* = 359 randomly selected from one group practice 9 patients refused or were excluded Completion rate of 89% at time 1 and 58% at time 2 ***Measurement of satisfaction:*** Questionnaire: 1) GP's understanding of problems 2) Explanation received 3) If thought consultation had helped Own instrument ***Method of analysis:*** Quantitative	***Results:*** Directing style of consultation resulted in significantly higher patient satisfaction for those with physical problems ($p < 0.02$) and those receiving a prescription ($p = 0.04$) No significant differences in satisfaction between those receiving directing or sharing style who had longer consultations, where the main treatment was advice, for patients with psychological or chronic problems No significant difference in mean length of consultation or socio-economic characteristics of patients between groups The feeling of being helped had declined significantly 1 week later ($p < 0.001$) ***Conclusions:*** Decline over 1 week is greater than the difference between styles, so this needs investigating
Schmittdiel *et al.*, 1997[313] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Whether being able to choose own physician raises satisfaction with physician Socio-economic and demographic features, health beliefs, recorded as possible confounds ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Stratified random sample of Kaiser Permanante health maintenance organisation members aged 35–85 yr Mail survey to 10,205 patients of 60 physicians ***Measurement of satisfaction:*** 9-item Visit Specific Questionnaire on satisfaction with primary care physician: 7 questions on aspects of care, 1 on general satisfaction, 1 on willingness to recommend ***Method of analysis:*** Quantitative	***Results:*** 71.4% response rate Persons choosing own physician (46.5%, *n* = 4738) were 16–20% more likely to rate their satisfaction "excellent" or "very good" than patients assigned a physician (*n* = 5457) ($p < 0.001$ on all comparisons), after controlling for socio-economic-demographic characteristics, health belief, physician characteristics People who choose own physician more likely to be white, older and female ($p < 0.001$), and have slightly stronger beliefs in value of doctors Single strongest predictor of general satisfaction was whether chose own doctor ***Conclusions:*** Possible reasons underlying link between satisfaction and choice: patients may choose doctors that meet their preferences; cognitive dissonance (i.e. patients rationalise their choice and are less likely to complain and have higher trust if have chosen own doctor)

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Segest, 1988[248] ***Country:*** Denmark ***Setting:*** Healthcare in general	***Determinants:*** The frequency with which Danish patients are dissatisfied; the characteristics of dissatisfied patients; and the reactions of dissatisfied patients ***Context:*** Empirical study analysing reactions to dissatisfaction ***Design:*** Observational	***Sample/data collection:*** Nationwide survey: 2330 people were interviewed (79% response rate) Based on a sample representative of the Danish population (apart from 2 counties, which were over-represented) ***Measurement of satisfaction:*** Asked if had cause for dissatisfaction in last year, and the circumstances Reasons why dissatisfied patients had not complained ***Method of analysis:*** Quantitative	***Results:*** 10.3% had been dissatisfied with medical treatment on at least 1 occasion over the past year = 4.7% of consultations 4.4% had considered complaining and 1.3% had complained The main cause (77.6%) of dissatisfaction was professional neglect or error Of those who complained formally, 34.1% complained directly to the physician, 50% complained to other physicians, and 4.6% complained to statutory authorities 42.2% stated their aim in complaining was to ensure no repetition of the problem 13.3% were aiming to vent anger or receive an apology The incidence of dissatisfaction was significantly lower among pensioners and those seeing the doctor regularly ($p < 0.05$) Those still in education or with longer than average periods of education were significantly more dissatisfied ($p < 0.05$) Reasons why dissatisfied patients did not complain: futile (19%), complaints system troublesome (19%), dissatisfaction too slight (15%), changed doctor (13%) ***Conclusions:*** Poor communication or behavioural conflict between patient and physician caused the majority of cases of dissatisfaction
Sixma *et al.*, 1998[201] ***Country:*** Netherlands ***Setting:*** General practice	***Determinants:*** Patient variables: age, morbidity, subjective health status, children in family, previous experiences/conflicts with doctor GP variables: personal characteristics, urbanisation, attitudes to patient involvement, referral and prescribing, practice organisation ***Context:*** Hierarchical theoretical model uses multilevel analysis to gain greater insight into determinants of satisfaction: Level 1: patient variables Level 2: GP variables ***Design:*** Observational	***Sample/data collection:*** Existing data set: Dutch national survey of general practice Stratified sample of GPs recorded all patient contacts in 3 months in 1987–1988 and completed questionnaire (n = 161) Questionnaire (health interview) to random sample of 100 patients per GP; 81% response (n = 13,014) ***Measurement of satisfaction:*** 3 dimensions: 1) Accessibility and availability of care 2) Humaneness/interpersonal relations 3) Information given Own instrument ***Method of analysis:*** Quantitative	***Results:*** Satisfaction with access related to older age, low morbidity (patient views) and quicker appointments (GP views) Satisfaction with humaneness related to older age, children, low morbidity (patient views) and GP positive about patient involvement and giving more information (GP views) Satisfaction with information related to older age, better health (patient views) and GP positive about patient involvement and higher prescribing and referral rates Low explained variance: <6% from patient views, about 25% from GP views Including doctor–patient interaction variables (of which misunderstandings/incidents (e.g. long waits, refused medication, not taken seriously) important in reducing satisfaction) raises explained variation to 20% (patient views) and 40% (GP views) ***Conclusions:*** Conflicts (e.g. doctor–patient misunderstandings) are rare but important; they significantly reduce satisfaction scores

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Smith *et al.*, 1995[277] ***Country:*** USA ***Setting:*** Outpatient	***Determinants:*** Effect of intensive doctor training in psychosocial skills on patient satisfaction ***Context:*** Empirical study ***Design:*** Experimental	***Sample/data collection:*** Residents in internal medicine and family practice (n = 29, 1 refused) randomised to receive either immediate training (n = 15) or training after 6 months (control group, n = 14) On average, 3 patients completed satisfaction questionnaire for each resident ***Measurement of satisfaction:*** Before and after training After testing and factor analysis, a 29-item 5-factor patient questionnaire, using indirect methods, covered: 1) Opportunity to disclose 2) Perception of physician empathy 3) Confidence in physician abilities 4) General satisfaction 5) Comparison with other physicians Own instrument ***Method of analysis:*** Quantitative	***Results:*** Patients of trained residents had more confidence in their doctors (p = 0.01) and more general satisfaction with medical visits (p = 0.02) Trained female residents generated significantly higher satisfaction on physician disclosure (p = 0.007) and physician empathy (p = 0.048) than trained male residents Training did not affect patients' comparative weightings of physicians ***Conclusions:*** Intensive psychosocial training programme for residents improved their patients' satisfaction

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Snell, 1996[274] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** The key performance indicators patients use to evaluate quality of care ***Context:*** Pragmatic study by quality assurance director of regional healthcare provider: marketing orientation Aim: 1) To develop questionnaire for wider application 2) To train employees ***Design:*** Observational	***Sample/data collection:*** *n* = 40 allocated to 5 focus groups based on patients' insurance status, age, and geographical location Group size ranged from 5 to 12 (drawn from 100 patients randomly selected from each demographic category, except group 5) Nursing, reception and accounting staff of sponsoring provider developed guidelines for focus group moderator and a preliminary questionnaire Group 1: Health maintenance organisation members Group 2: Senior citizens (age 65–75 yr) with Medicare Group 3: Self-pay or commercial carrier Group 4: Patients from a smaller satellite facility Group 5: University faculty and staff who were not patients of the sponsoring provider University focus group held on campus; all the others at community locations not associated with either the university or the sponsor ***Measurement of satisfaction:*** Used specially designed questionnaire and focus groups to generate qualitative data from which a measure could be developed ***Method of analysis:*** Qualitative	***Results:*** The primary issue patients use for judging medical care is communication The 3 top ranked items are: 1) Physician listens, asks, probes and restates patient's comments 2) Ample time with physician 3) Physician explains treatments and diagnosis clearly Next ranked factors in judging physicians were: 1) Appropriate testing and prescriptions 2) Follow-up Interactions with physicians considered the most important aspects of medical care Some dissatisfaction with business issues such as scheduling and waits, phones, billing and parking ***Conclusions:*** The results of this study are consistent with the marketing literature on satisfaction There are 2 dimensions to satisfaction: objective product performance and user's affective response to the product and use experience Objective performance makes a product or service acceptable Satisfaction and loyalty require a mild, positive, emotional response Poor performance on business dimensions could result in patient dissatisfaction To create truly happy patients requires satisfying the patients' "intuition", which this study suggests is based on the physician's listening and communication skills Negative perceptions are relevant in that they are rarely improved by cost-containment

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Soh, 1991[236] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** 1) Demographic data 2) Health data: behaviour, illness, insurance, use of services, preventive care 3) Features of provider and healthcare facility ***Context:*** Empirical study: relates provider and patient characteristics to satisfaction ***Design:*** Observational	***Sample/data collection:*** Los Angeles regional health survey Multistage random probability sample *n* = 2020 household units, of which 63% participated (*n* = 1210) 1-hour interview followed by 6-weekly telephone contact for 1 year ***Measurement of satisfaction:*** 4 measures combined in 1 factor: 1) Satisfaction with medical care 2) Medical care could have been better 3) Medical care just about perfect 4) Doctors concerned about my feelings Own instrument ***Method of analysis:*** Quantitative	***Results:*** 7 factors: 1) Patient satisfaction 2) Access to care 3) Patient's availability 4) Perceived susceptibility to illness 5) Motivation to seek care 6) Perceived efficacy of doctor 7) Cost concerns Strongest predictors of satisfaction: Access to care ($p < 0.001$) Perceived efficacy of care ($p < 0.001$) Continuity of care ($p < 0.001$) Cost ($p < 0.05$) Levels of education positively associated with level of satisfaction ($p < 0.05$) No other sociodemographic variables were significant ***Conclusions:*** Patient-perceived efficacy of care and continuity of care are more significant predictors of satisfaction than patient characteristics

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Stein *et al.*, 1989[311] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** Type of health plan: health maintenance organisation (HMO), $n = 25$ Private physician care – fee-for-service, $n = 75$ Confounding variables: demographic data, healthcare utilisation, self-assessment of health ***Context:*** Empirical study to examine effect of type of health plan on satisfaction with doctor–patient relationship ***Design:*** Observational	***Sample/data collection:*** 100 participants aged >65 yr from 1 community; average age 75 yr ***Measurement of satisfaction:*** Own 20-item scale, Seniors' Assessment of Medical Service, which evaluated the doctor–patient relationship, convenience of care and cost of care 10 items in HMO context and 10 items in private care context; 4-point agree/disagree scale; lower scores indicate greater satisfaction Open questions about what is liked or disliked about care ***Method of analysis:*** Quantitative and qualitative	***Results:*** No differences in age, health or utilisation between groups Those with slightly lower incomes ($p < 0.05$), men ($p < 0.01$), and less well-educated people ($p < 0.01$) were more likely to be HMO members HMO members tended to perceive themselves as being in poorer health ($p < 0.13$) Satisfaction with the doctor–patient relationship ($p < 0.01$) and convenience of care ($p < 0.05$) was higher in the private care group, whereas satisfaction with cost was higher in the HMO group ($p < 0.07$) When asked to rate the type of care they were not receiving, the private care group perceived HMO more negatively than private care, but the HMO group (who had once experienced private care) viewed the two systems equally Group differences were significant ($p < 0.001$) Qualitative analysis revealed the items most associated with satisfaction with private care were having a doctor who is familiar and caring, and choice Main area of satisfaction for HMOs was lack of extra charges Dissatisfaction with private care centred on costs The greatest concerns voiced concerning HMOs were lack of choice, potential or actual lack of a relationship with a "caring" physician, superficial or "charity" treatment ***Conclusions:*** Principal difference between HMO and private care patients' satisfaction was in the area of the doctor–patient relationship: private patients were more satisfied than HMO patients One of the most important issues for survival of HMO or private physicians will be the ability to provide high-quality medical care while at the same time developing personal relationships between physicians and patients

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Steven and Douglas, 1988[266] ***Country:*** Australia ***Setting:*** General practice	***Determinants:*** Factors contributing to dissatisfaction ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Approximately 100 consecutive adult patients in 31 (of 60) general practices (14 solo; 5 with 2 partners, 12 with more than 3 partners) 2822 questionnaires self-completed in waiting room ***Measurement of satisfaction:*** 21-item questionnaire on dissatisfaction in 5 groups: architecture, receptionists, accessibility, quality, communication Yes/no/don't know responses Own instrument ***Method of analysis:*** Quantitative	***Results:*** Factor analysis confirmed that receptionists, accessibility, and communication were independent issues Quality was less discrete and embedded in a factor named mechanics Mean dissatisfaction greatest in big practices and lowest in 2-person practices Most dissatisfaction related to accessibility and communication; other factors received little dissatisfaction Overall low levels of dissatisfaction (<10%) ***Conclusions:*** Opening hours are important for accessibility
Stewart, 1989[17] ***Country:*** International ***Setting:*** Healthcare in general	***Determinants:*** Communication variables: information giving, information seeking, social conversation, positive talk, negative talk, partnership building ***Context:*** Empirical study ***Design:*** Review	***Sample/data collection:*** MEDLINE and other searches revealed 80 articles (61 data sets) ***Measurement of satisfaction:*** Varied between studies ***Method of analysis:*** Quantitative	***Results:*** Satisfaction consistently related to physician communication and positively associated with all variables except question asking/information seeking ***Conclusions:*** Uses results to postulate a theory of reciprocity in the medical encounter

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Stiles *et al.*, 1979[295] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Interaction exchange structure of consultation analysed to explore association of particular types of verbal exchanges with satisfaction ***Context:*** Empirical study uses new more thorough and flexible coding system: verbal response mode and seeks to reveal characteristic exchanges in 3 identifiable segments of interview – history, examination, conclusion ***Design:*** Observational	***Sample/data collection:*** 18 physicians conducted 52 interviews with unscheduled "walk-in" patients Consultations audio-taped, transcribed and coded ***Measurement of satisfaction:*** Medical Interview Satisfaction Scale Questionnaire after consultation – 2 scales: cognitive (e.g. patients' understanding) and affective aspects of satisfaction (e.g. physician warmth, and confidence in doctor) 33 items; 5-point Likert response format ***Method of analysis*** Quantitative and qualitative	***Results:*** Factor analysis of verbal response modes yielded clear and simple structure of verbal interaction in the three segments of the interview Each segment consists of 2 or 3 distinct types of verbal exchange, each with distinct medical function: 1) History: patient exposition, and closed (yes/no) questions from doctor, accounted for 74% of variance 2) Physical examination: further data exchange and physical examination exchange accounted for 77% of variance 3) Conclusion: clarification exchange, feedback by physician, brief answers (possibly to conclude interview) account for 70% of variance Satisfaction not related to age, education, sex, race or physician Affective satisfaction related to patient exposition in history section ($p < 0.05$) Cognitive satisfaction related to feedback in conclusion section ($p < 0.05$) ***Conclusions:*** Positive relationship between satisfaction and certain types of verbal exchange
Swan *et al.*, 1985[198] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Tested relationship between overall satisfaction and: 1) Confirmation of patients' expectations with respect to treatment, services etc. 2) Patients' perceptions of being fairly treated (i.e. that hospital gives good value for money) Also investigated relationship between intentions to return and overall satisfaction and patients' perceptions of hospital performance ***Context:*** Theoretical Reports and estimates path model ***Design:*** Observational	***Sample/data collection:*** Questionnaire mailed to 500 previous patients; 37% responded ***Measurement of satisfaction:*** Indirect measurement of 34 attributes measuring 9 major sets of services rated on 8-point scale (admissions, room physicians, nurses, support services, food, personal services, billing, emergency room) 4 items measured intentions to revisit Also measured overall satisfaction Own instrument ***Method of analysis:*** Quantitative	***Results:*** Patients' perceptions of hospital performance on specific attributes related strongly to confirmation (or disconfirmation) of expectations Patients' overall satisfaction most influenced by confirmation of expectations then feelings of fairness Patients' perceptions of hospital performance positively related to intention to revisit ***Conclusions:*** Patients' overall satisfaction can be influenced by improving performance in specific areas (to enhance confirmation) or by altering (lowering) patients' expectations (i.e. making them more realistic); also by educating patients about hospitals so they understand better what is involved

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Taylor *et al.*, 1991[252] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Factors contributing to quality nursing care from patient perspective ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 70 patients with their significant others were asked to describe quality nursing care Telephone interview ***Measurement of satisfaction:*** Patient views on quality in nursing care ***Method of analysis:*** Qualitative	***Results:*** Two major types of attributes identified: 1) Practice attributes: holistic care, family involvement, patient centredness, education and communication 2) Nurse attributes: (a) personal – friendly, flexible, efficient, helpful, caring, courteous, conscientious; (b) proficiency – knowledgeable, technically competent ***Conclusions:*** Attributes identified emphasise psychosocial aspects of care
Thomas *et al.*, 1996[155] ***Country:*** UK ***Setting:*** In hospital	***Determinants:*** To assess construct validity of questionnaire Patients categorised by age and education, and differences in scores between groups were investigated ***Context:*** Empirical ***Design:*** Experimental	***Sample/data collection:*** 2 medical and 2 surgical units selected at random from each of 5 hospitals in northeast England (n = 20) Patients recruited on day of discharge and asked to complete questionnaire before leaving hospital Subsample (n = 102) sent second copy at home 20 days after discharge ***Measurement of satisfaction:*** Newcastle Satisfaction with Nursing Care Scale, 3 sections: 1) Experiences of nursing care 2) Satisfaction with nursing care 3) Demographic information ***Method of analysis:*** Quantitative	***Results:*** 92% of eligible patients agreed to participate (n = 1920), of which 81% (n = 1559) responded Non-respondents were more likely to be women, and older Response rates varied between wards and hospitals 74 patients returned both questionnaires No significant differences in either experience or satisfaction questionnaires, possibly reflecting small sample size ***Conclusions:*** Scores unaffected by whether questionnaire completed before discharge or at home 3 weeks later

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Thomas *et al.*, 1996[259] ***Country:*** UK ***Setting:*** In hospital	***Determinants:*** Compares functional nursing (task orientated), team nursing and primary nursing (nurses assigned responsibility for care of a patient) with respect to patient satisfaction Tests whether satisfaction related to having a named nurse as required by Patient's Charter ***Context:*** Empirical study to explore whether organisation of nursing along primary nursing lines leads to improvements in continuity and individualisation of care, and greater patient satisfaction ***Design:*** Observational	***Sample/data collection:*** 20 randomly selected medical and surgical wards in 5 general hospitals, and 2078 patients aged ≥18 yr 75% completed questionnaire on day of discharge, n = 1572 20 ward sisters completed ward organisation questionnaires ***Measurement of satisfaction:*** Newcastle Satisfaction with Nursing Scales (validated) 3 sections – 26-item indirect measures of nursing care included: 1) Availability and attentiveness of nurses 2) Degree of individual treatment afforded to patients 3) Reassurance 19-item satisfaction with nursing care: sociodemographic and hospital stay information ***Method of analysis:*** Quantitative	***Results:*** No significant difference in patients' experience or satisfaction between primary and team nursing Nearly half the patients (47.6%) could identify one particular nurse responsible for their care – higher proportion in team nursing compared with primary nursing (non-significant) Those patients identifying 1 nurse in charge rated their satisfaction with nursing more highly ($p < 0.001$) than those who could not ***Conclusions:*** Patient satisfaction linked to knowing own nurse in charge of care rather than organisational structures

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference **Country** **Setting**	**Determinants investigated** **Context** **Design**	**Sample and data collection** **Measurement of satisfaction** **Analysis**	**Results** **Conclusions**
Treadway, 1983[281] ***Country:*** UK ***Setting:*** General practice	***Determinants:*** To assess the relative importance for patient satisfaction of: active direction of consultation by patient; patient feeling understood by doctor Improvements in patient symptoms Consultations audio-taped Patients completed questionnaire: first immediately after consultation, about the consultation (if had been able to communicate problems; if doctor appeared to understand; if patient understood treatment) Second questionnaire 1 week later at home, on satisfaction ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Interviews with 81 patients after initial visit to trainee GP ***Measurement of satisfaction:*** 23 items of indirect measures covering satisfaction with: 1) Information given 2) Relationship with doctor 3) Doctor's behaviour in consultation Own instrument ***Method of analysis:*** Quantitative	***Results:*** 83% of patients had requests they wanted to make (e.g. medication, examination) but only 37% articulated these; this was used as a measure of patient direction of consultation Increased satisfaction associated with patients feeling understood ($p < 0.004$), verbalising their requests ($p < 0.05$), their age ($p < 0.05$) Satisfaction was not related to patient feeling improvement in illness, actively directing the consultation, having requests granted, gender, education, social class, or gender of doctor ***Conclusions:*** Encouraging patients to express requests to their doctor will result in more effective doctor–patient communication and an improvement in doctors' understanding of patients' needs
Walker and Restuccia, 1984[157] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Relationship between responses to questions about specific aspects of hospital stay and overall rating of hospital stay (small part of an experimental study comparing telephone and mail methods) ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** 355 telephone respondents (67.6%) 172 mail respondents (58.1%) 7 days post-discharge ***Measurement of satisfaction:*** Questionnaire – covered: admission, room, food, nursing care, medical care by other personnel, discharge 5-point Likert scales 1 question on overall appraisal of stay Own instrument ***Method of analysis:*** Quantitative	***Results:*** Factors significantly correlated with overall satisfaction in both types of survey: 1) Nursing care 2) Hospital services (room and food) 3) Medical care, including explanations and information, examination, ease of talking to doctor Nursing care had highest correlation with overall satisfaction ($r = 0.62$ for telephone and 0.70 for mail) ***Conclusions:*** Aspects of hospital care most influencing satisfaction were related to nursing services

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Ware *et al.*, 1975[275] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** To identify perceptions of consumers regarding characteristics of doctors and healthcare services to assist in design of medical education ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Cluster and stratified sampling: 903 interviews achieved from 1200 households ***Measurement of satisfaction:*** Constructs tested: availability, accessibility, convenience, continuity, cost, humaneness, perceived quality, problems of low income patients 4 scales (87 items), indirect approach: 1) Healthcare in area 2) Physician behaviour 3) Reasons for postponing doctor visits 4) General attitudes ***Method of analysis:*** Quantitative	***Results:*** Factors defined for each scale were: 1) Healthcare in area: continuity, cost, availability of services 2) Physician behaviour: quality/competence, humaneness/caring 3) Postponement: financial constraints, value/efficacy, competing priorities 4) General attitudes: access, care for poor, availability/cost Internal consistency reliability of scales 0.66–0.89 ***Conclusions:*** Results support existence of and validity of variety of consumer perceptions
Wartman *et al.*, 1983[296] ***Country:*** USA ***Setting:*** Ambulatory care	***Determinants:*** Relationship between satisfaction with communication and understanding of prescription drug regimens and compliance ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Prepaid medical plan: 1367 patients (chronic and acute) given questionnaires about their problem after consultation; 1049 (77%) responded Providers completed medical details for 89% of patients of a 50% random sample Telephone interview 1 week later established satisfaction with visit, understanding of drug regimen and compliance; 75% participated ***Measurement of satisfaction:*** 4 questions (4-point scale) asked directly about satisfaction with physician, time, explanation, interests Own instrument ***Method of analysis:*** Quantitative	***Results:*** Compliance positively associated with understanding drug instructions ($p < 0.001$) and negatively associated with satisfaction with 3 communication measures ($p < 0.001$ to $p < 0.05$) Patients who understood drug regimen were less satisfied with communicative aspects of consultation ***Conclusions:*** Satisfying communication does not necessarily mean effective communication about drug regimens

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Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Weingarten *et al.*, 1995[217] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Relationship between patient satisfaction with physician and preventive care services as recommended by major national organisations: blood pressure; influenza, pneumococcal and tetanus immunisations; mammogram; clinical breast examination; counselling for exercise and smoking Patient self-report on preventive services verified by chart reviews ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** Elderly patients (65–75 yr) of Kaiser Permanente health maintenance organisation randomly selected: n = 3249; 2799 responses (86%) Physicians, n = 48 Mailed and telephone survey ***Measurement of satisfaction:*** 14 items adapted from RAND Health Insurance experiment instrument: indirect measure; 5-point Likert scales (5 items on technical aspects of care and 9 items on art of care/physicians' manner) ***Method of analysis:*** Quantitative	***Results:*** Patient satisfaction on individual items skewed towards more favourable ratings Median summary scores: 4.1 for art of care, 4.2 for technical quality; less than 5% had score <3 Patients receiving any preventive service (except blood pressure) were more satisfied than those who did not ($p < 0.01$) Patients with higher quality of life scores more satisfied with physician than those with lower scores ($p = 0.02$) Older physicians generated higher satisfaction with technical quality of care ($p = 0.02$) ***Conclusions:*** Link exists between patient satisfaction and certain preventive services
Weiss and Ramsey, 1989[304] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** Relationship between source of primary care and satisfaction, particularly if patient has regular source of primary care Patients asked if always see same physician, one of a group, attend a clinic where may see different physician on each occasion, or have no regular source of care ***Context:*** Empirical study ***Design:*** Observational	***Sample/data collection:*** General population sample; n = 400, drawn by systematic method Interview study ***Measurement of satisfaction:*** Roghmann measure that focuses on specific aspects of care 5-item scale indirectly to assess satisfaction with last physician seen with respect to: carefulness, concern, listening, time allotted, information provided ***Method of analysis:*** Quantitative	***Results:*** Each item of satisfaction significantly related to source of care ($p < 0.001$) Most dissatisfied have no regular source of care Respondents seeing same physician at each visit had highest average score (7.48), then people attending a small group practice (6.74), a clinic (6.58) and lastly no regular care (5.47) ***Conclusions:*** When controlling for age, sex, race, education and income, source of care was best predictor of patient satisfaction ($p < 0.001$) Of sociodemographic factors, only age significantly related to satisfaction (older more satisfied, $p < 0.01$)

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Weiss, 1988[114] ***Country:*** USA ***Setting:*** Primary care	***Determinants:*** 1) Patients' sociodemographic characteristics: age, sex, race, education, income 2) Patients' predispositional factors Satisfaction with life in general, confidence in US medical care, confidence in local medical care, locus of control, having regular source of care, satisfaction with personal health status ***Context:*** Careful derivation of theoretical hypotheses and testing ***Design:*** Observational	***Sample/data collection:*** General household survey, mid-Atlantic state; n = 400 ***Measurement of satisfaction:*** Roghmann Scale indirectly measures satisfaction with physician characteristics: carefulness, concern, listening, spending time, provision of information ***Method of analysis:*** Quantitative	***Results:*** Predispositional factors found to influence reported satisfaction: Confidence in local medical care system ($p < 0.01$) Having a regular source of care ($p < 0.01$) Being satisfied with life in general ($p < 0.01$) Other independent variables not significant ***Conclusions:*** When predispositional factors are included, sociodemographic factors have no effect on satisfaction
Williams *et al.*, 1995[219] ***Country:*** UK ***Setting:*** Primary care	***Determinants:*** 1) Patients' prior expectations using 42-item Patient's Intentions Questionnaire, pre-consultation 2) How far expectations met, post-consultation, using adaptation of Patient's Intentions Questionnaire From this the extent to which desired features were received could be estimated ***Context:*** Empirical approach to investigate types of needs of adult patients and whether meeting patient expectations raises reported satisfaction ***Design:*** Observational	***Sample/data collection:*** 25 GPs in 10 London practices 600 adult patients, of which 84% (504) responded Mean age 41 yr Range of health concerns ***Measurement of satisfaction:*** Medical Interview Satisfaction Scale after consultation 3 subscales: affective (9 items); cognitive (9 items); behavioural (8 items) ***Method of analysis:*** Quantitative	***Results:*** 40% of total variance in Patient's Intentions Questionnaire explained by: explanation of problem (27%), "support" (8%), and tests and diagnosis (5%) Most patients experienced high levels of satisfaction (mean score >80%) and expectation of having problem explained tended to be better met than need for "support" Patients with larger number of expectations met reported significantly higher satisfaction with consultation ($p < 0.05$) ***Conclusions:*** Fulfilment of patient expectations depends on effective communication between doctor and patient, appropriateness of expectations, and ability of GP to meet them

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Williams and Calnan, 1991[269] ***Country:*** UK ***Setting:*** Primary care	***Determinants:*** Various aspects of general practice: accessibility and availability of healthcare services; doctor–patient relationships; professional skills and quality of care; and organisational aspects of care Socio-economic characteristics were confounding variables ***Context:*** Empirical study Conceptual dimensions of healthcare drawn from other studies that have shown how patients view healthcare or distinguish doctors' skills ***Design:*** Observational	***Sample/data collection:*** Random selection of 735 people in 1 health district; response rate 62% (454 postal questionnaires returned) Self-completion questionnaire Used responses from only 357: those who had consulted the GP within the last 12 months ***Measurement of satisfaction:*** Questionnaire designed for study Satisfaction with components of care rated on 4- or 5-point scale using indirect and direct approaches: 1) Access and availability 2) Facilities and organisation 3) Interpersonal skills 4) Professional skills 5) General satisfaction (summary) ***Method of analysis:*** Quantitative	***Results:*** Characteristics of survey population similar to those in the district at large Overall levels of satisfaction high (95%) More specific questions showed greater level of dissatisfaction: 38% unable to discuss personal problems with GP; 26% expressed dissatisfaction with level of information they received; 25% were dissatisfied with length of time spent in consultation Key dimensions such as communication ($p < 0.001$), nature and quality of the doctor–patient relationship ($p < 0.001$), and GP's professional skills ($p < 0.001$), when compared with issues such as access, availability and type of service provision, were most strongly associated with overall levels of satisfaction with the GP Older patients more satisfied ($p < 0.001$) Social class and education not significant ***Conclusions:*** The more diffuse and intangible aspects of general practice appear to be of greater importance to patients than other more tangible aspects and criteria of primary care such as access, availability etc. Age and gender are also related to expressed rates of satisfaction

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Williams and Calnan, 1991[254] ***Country:*** UK ***Setting:*** General practice, in hospital, dental	***Determinants:*** Assess generalisability of determinants of consumer satisfaction across 3 settings: general practice, hospital, dental ***Determinants:*** 1) Sociodemographics 2) Utilisation of services 3) Components of care, including: access and availability, organisational aspects, professional skills, health promotion activities, prescribing, doctor–patient relationship, communication skills, interest in social problems, general satisfaction ***Context:*** Empirical ***Design:*** Observational	***Sample/data collection:*** Random sample from electoral register of 735 individuals in one health district in southeast England: 62% response, n = 454 Self-completion mailed questionnaire ***Measurement of satisfaction:*** Questionnaire designed for study Satisfaction with components of care rated on 4- or 5-point scale using indirect and direct approaches: 1) Access and availability 2) Facilities and organisation 3) Interpersonal skills 4) Professional skills 5) General satisfaction (summary) ***Method of analysis:*** Quantitative	***Results:*** Different elements contribute to (dis)satisfaction in different settings Convergence with respect to importance for satisfaction of professional competence, and the nature and quality of the patient–professional relationship General levels of satisfaction high: 95% for GPs, 83% for hospital 77% of variance in general satisfaction with GPs explained by information giving, medical skills, personal skills, confidence in doctor ($p < 0.05$) Main areas of dissatisfaction mentioned by 25–50% of respondents: time, information, lifestyle advice, personal issues Only significant influence on general satisfaction with hospital was confidence in doctor ($p < 0.05$), $R^2 = 0.10$ Main areas of dissatisfaction mentioned by 73% of respondents: access, hospital organisation and facilities, communication and information Older patients more satisfied with GPs and hospitals ($p < 0.05$), but not with dentists Availability out of hours most important factor in dental satisfaction, followed by competence and information giving ($p < 0.05$; $R^2 = 0.49$) ***Conclusions:*** Although general levels of satisfaction high, detailed questions reveal dissatisfaction Convergence of predictors of satisfaction across settings: professional competence and doctor–patient relationship Areas of dissatisfaction, however, varied across and were specific to settings

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Wilson *et al.*, 1995[231] ***Country:*** UK (Scotland) ***Setting:*** Primary care	***Determinants:*** Effect of emotional disturbance and its detection on satisfaction with consultation in general practice ***Context:*** Empirical study As many as a third of consultations by GPs may involve psychological disturbance, many of which are missed; GP attitudes to, and skills with, psychological disturbances vary ***Design:*** Observational	***Sample/data collection:*** 893 adult patients attending 12 GPs Questionnaires completed by GPs after consecutive surgery consultations concerning contribution of psychological factors to consultation Patients completed forms assessing mental state and satisfaction with interpersonal aspects of the consultation Mental health measure using 28-item general health questionnaire that assesses psychological disturbance ***Measurement of satisfaction:*** A shorter form of Baker's Consultation Satisfaction Questionnaire, which indirectly assesses patients' satisfaction with the interpersonal aspects of the consultation 8 questions (disagree strongly – agree strongly) ***Method of analysis:*** Quantitative	***Results:*** Patients reporting psychological disturbance tended to express more dissatisfaction with the interpersonal aspects of the consultation ($p < 0.001$) unless the disturbance was recognised by the GP Significant differences between doctors in tendency to consider psychological factors important, and in psychological morbidity of their patients Fewer dissatisfied patients of doctors who varied the psychological component of consultations ($p < 0.001$) In contrast, the GPs' overall accuracy of diagnosis of psychological distress was a poor predictor of the proportion of dissatisfied patients Dissatisfied patients were younger and healthier than satisfied patients ($p < 0.001$) Men were more satisfied than women ($p < 0.05$) ***Conclusions:*** A tendency among doctors to assign importance to the psychological component of consultations may enhance elements of patient satisfaction; this suggests that it may be GPs' interpersonal style that is important for satisfaction rather than diagnostic accuracy *per se* It is not clear whether this "psychological-mindedness" is an attribute that can be learnt Many elements of satisfaction not considered (e.g. surgery organisation)

continued

Table summarising empirical studies that investigated the determinants of satisfaction contd

Reference Country Setting	Determinants investigated Context Design	Sample and data collection Measurement of satisfaction Analysis	Results Conclusions
Woodside *et al.*, 1989[255] ***Country:*** USA ***Setting:*** In hospital	***Determinants:*** Test relationship between: 1) Consumers' perceptions of high service quality in specific areas and overall satisfaction 2) Customer satisfaction and behavioural intention to use same provider again ***Context:*** Theoretical: structural framework presented and tested ***Design:*** Observational	***Sample/data collection:*** Telephone survey Recently discharged inpatients from 2 hospitals Response rates 56% and 58% ***Measurement of satisfaction:*** 20 single-item measures based on SERVQUAL Mix of 3- and 5-point direct and indirect scales covering admission, nursing care, meals, housekeeping, technical services, discharge, overall satisfaction (11-point scale), behavioural intention (11-point scale) ***Method of analysis:*** Quantitative	***Results:*** Customer judgements of specific service quality strongly associated with hospital satisfaction and behavioural intent ($p < 0.01$ to $p < 0.001$), except admissions and housekeeping Overall satisfaction and behavioural intent closely correlated ($r = 0.85$) Nursing care emerged as most important determinant of overall satisfaction ***Conclusions:*** Overall customer satisfaction is a moderating variable between service quality and behavioural intention Evaluations of doctors were excluded because they cannot be managed by hospital
Zapka *et al.*, 1995[48] ***Country:*** USA ***Setting:*** Healthcare in general	***Determinants:*** 1) Self-reported health status 2) Patient reports on 5-point scale of system performance (PROSPER): a set of indicators of quality of performance of healthcare delivery system using patient reports of their experiences of processes such as tests, radiographs, referrals, waiting time, coordination of care 3) Demographic characteristics ***Context:*** Pragmatic: management of quality of care to reduce disenrolment ***Design:*** Observational	***Sample/data collection:*** Mailed questionnaire to random sample of middle income patients attending for ambulatory or chronic care or obtaining a referral in preceding 3 months at 4 health centres in health maintenance organisations in the mid-West and the northeast $n = 3151$; 63% response rate ***Measurement of satisfaction:*** 2 items of overall satisfaction from Group Health Association of America, measured on 5-point agree–disagree scale: 1) All things considered ... medical care is excellent 2) There are some things about my medical care that could be better ***Method of analysis:*** Quantitative	***Results:*** 82% agreed or strongly agreed that care was excellent 58% agreed or strongly agreed that medical care could be better Health status associated with satisfaction ($p < 0.01$) People with poor health had stronger feelings (either positive or negative) People in good health or with chronic disease more satisfied Older and less well educated more satisfied ($p < 0.01$) Minorities were less satisfied ($p < 0.01$) Income was not significant Poor system performance, especially access, coordination, continuity, communication, strongly related to satisfaction ($p < 0.01$) Members of plan >2 years less satisfied ($p < 0.01$) ***Conclusions:*** Patient reports of system problems are a feasible way to collect valuable information for quality improvements

Appendix 14

Instruments identified by the review

This appendix lists references to satisfaction instruments encountered in the course of the review. No separate search for additional articles about these instruments or for other instruments was undertaken.

The list is ordered by country of origin: UK, USA, other; sublists are ordered by date of development of the instrument. Two reviews of instruments are noted at the end of the list.

A table at the end of the appendix shows the identified frequency of use (>1) of the instruments.

UK

Primary care consultations:

Feletti G, Firman D, Sanson-Fisher R. Patient satisfaction with primary-care consultations. *J Behav Med* 1986;**9**:389–99.

Surgery Satisfaction Questionnaire (SSQ):

Baker R. The reliability and criterion validity of a measure of patients' satisfaction with their general practice. *Fam Pract* 1991;**8**:171–7.

Consultation Satisfaction Questionnaire (CSQ):

Baker R. Development of a questionnaire to assess patients' satisfaction with consultations in general practice. *Br J Gen Pract* 1990;**40**:487–90.

Critical Incident Technique (CIT):

Pryce Jones M. Critical incident technique as a method of assessing patient satisfaction. In: Fitzpatrick R, Hopkins A, editors. Measurement of patients' satisfaction with their care. London: Royal College of Physicians of London; 1993. p. 87–97.

Other articles on SSQ, CSQ and CIT:

Baker R. Use of psychometrics to develop a measure of patient satisfaction for general practice. In: Fitzpatrick R, Hopkins A, editors. Measurement of patients' satisfaction with their care. London: Royal College of Physicians of London; 1993. p. 57–75.

Baker R, Whitfield M. Measuring patient satisfaction: a test of construct validity. *Qual Health Care* 1992;**1**:104–9.

Poulton B. Use of the consultation satisfaction questionnaire to examine patients' satisfaction with general practitioners and community nurses: reliability, replicability and discriminant validity. *Br J Gen Pract* 1996;**46**:26–31.

Kinnersley P, Stott N, Harvey I, Hackett P. A comparison of methods for measuring patient satisfaction with consultations in primary care. *Fam Pract* 1996;**13**:41–51.

Lewis J, Williamson V. Examining patient perceptions of quality care in general practice: comparison of quantitative and qualitative methods. *Br J Gen Pract* 1995;**45**:249–53.

General practitioner services:

Grogan S, Conner M, Willits D, Norman P. Development of a questionnaire to measure patient's satisfaction with general practitioners' services. *Br J Gen Pract* 1995;**45**:525–9.

Satisfaction with general practitioners:

Leavey R, Wilson AJ. Developing instruments for the measurement of patient satisfaction for family health service authorities. In: Fitzpatrick R, Hopkins A, editors. Measurement of patients' satisfaction with their care. London: Royal College of Physicians of London; 1993. p. 43–55.

General Practice Assessment Survey (GPAS):

This instrument was developed at the National Primary Care Research and Development Centre (University of Manchester). It is based on the American Primary Care Assessment Survey, (see below). More information and instruments available at www.gpas.co.uk (accessed 6 May 2002).

Inpatient care: University of Manchester Institute of Science and Technology (UMIST) instrument:

Moores B, Thompson A. What 1357 hospital inpatients think about aspects of their stay in British acute hospitals. *J Adv Nurs* 1986;**11**:87–102.

Thompson A. The soft approach to quality of hospital care. *Int J Qual Reliability Manage* 1986;**3**:59–67.

Thompson A. A patient's eye view. Nurs Times 1986;(5 Mar):30–2.

Moores B, Thompson A. Getting feedback. *Health Soc Serv J* 1981;**91**:634–6.

Moores B, Thompson A. From the patient's mouth. *Health Soc Serv J* 1985;**95**:1040–2.

Moores B, Thompson A. An all consuming view. *Health Serv J* 1986;**96**:892–3.

Inpatient and outpatient care: Clinical Accountability Service Planning and Evaluation (CASPE) system:

Gritzner C. The CASPE patient satisfaction system. In: Fitzpatrick R, Hopkins A, editors. Measurement of patients' satisfaction with their care. London: Royal College of Physicians of London; 1993. p. 33–41.

Carr-Hill R, Dixon P, Thompson A. Too simple for words. *Health Serv J* 1989;**15**:728–9.

Green J. On the receiving end. *Health Serv J* 1988;**98**:880–1.

Smith C. Validation of a patient satisfaction system in the United Kingdom. *Qual Assur Health Care* 1992;**4**:171–7.

Hospital inpatient survey:

Bruster S, Jarman B, Bosanquet N, Weston D, Erens R, Delblanco T. National survey of hospital patients. *BMJ* 1994;**309**:1542–6.

Cullen RC, Sweeney J, O'Hara T, Leahy A, Hickey B, Bouchier-Hayes D, *et al.* Patient perception of care in an Irish hospital. Dublin: Royal College of Surgeons in Ireland; 1998 (Irish version).

Newcastle Satisfaction with Nursing Care Scale (NSNS):

Thomas L, MacMillan J, McColl E, Priest J, Hale C, Bond S. Obtaining patients' views of nursing care to inform the development of a patient satisfaction scale. *Int J Qual Health Care* 1995;**7**:153–63.

Thomas L, McColl E, Priest J, Bond S, Boys R. Newcastle Satisfaction with Nursing Scales: an instrument for quality assessments of nursing care. *Qual Health Care* 1996;**5**:67–72.

McColl E, Thomas L, Bond S. A study to determine patient satisfaction with nursing care. *Nurs Stand* 1996;**1**(1):34–8.

Walsh M, Walsh A. Evidence-based practice: is patient satisfaction evidence? *Nurs Stand* 1998;**12**(49):38–42.

Department of Health Patient Experience Survey:

Airey C, Bruster S, Erens R, Lilley S-J, Pickering K, Pitson L. National surveys of NHS patients: general practice 1998. Leeds: NHS Executive; 1999.

USA

Satisfaction with physician and medical care:

Roghmann K, Hengst A, Zastowny T. Satisfaction with medical care: its measurement and relation to utilization. *Med Care* 1979;**17**:461–79.

Patient Satisfaction with Medical Care (attitude to physician, cost, convenience), evolving over a decade to Patient Satisfaction Scale (PSS):

Hulka B, Zyzanski S, Cassel J, Thompson S. Scale for the measurement of attitudes toward physicians and primary medical care. *Med Care* 1970;**13**:429–35.

Zyzanski S, Hulka B, Cassel J. Scale for the measurement of "satisfaction" with medical care: modifications in content, format and scoring. *Med Care* 1974;**12**:611–20.

Stamps P, Finkelstein J. Statistical analysis of an attitude scale to measure patient satisfaction with medical care. *Med Care* 1981;**19**:1108–35.

Hulka B, Zyzanski S. Validation of a patient satisfaction scale. Theory, methods and practice. *Med Care* 1982;**20**:649–53.

Patient Satisfaction Questionnaire (PSQ-I, PSQ-II) – general satisfaction with medical care from doctor:

Ware JJ, Snyder M, Wright W, Davies A. Defining and measuring patient satisfaction with care. *Eval Program Plann* 1983;**6**:247–63.

Ware JJ. Effect of acquiescent response set in patient satisfaction ratings. *Med Care* 1978;**16**:327–36.

Marshall G, Hays R, Sherbourne C, Wells K. The structure of patient satisfaction with outpatient medical care. *Psychol Assess* 1993;**5**:477–83.

Visit Specific Questionnaire (VSQ-9) – satisfaction with office visit:

Rubin H, Gandek B, Rogers W, Kosinki M, McHorney C, Ware JJ. Patients' ratings of outpatient visits in different practice settings: results from the medical outcomes study. *JAMA* 1993;**270**:835–9.

Ware JJ, Hays R. Methods for measuring patient satisfaction with specific medical encounters. *Med Care* 1988;**26**:393–402.

Ambulatory settings:

Osterweis M, Howell J. Administering patient satisfaction questionnaires at diverse ambulatory care sites. *J Ambulatory Care Manage* 1979;(Aug):67-88.

Family Practice:

Di Tomasso R, Willard M. The development of a patient satisfaction questionnaire in the ambulatory setting. *Fam Med* 1991;**23**:127–31.

Primary Care Assessment Scale (PCAS) – quality of health plan and doctor:

www.outcomes-trust.org/instruments/catalog.html

American Board of Internal Medicine Patient Satisfaction project:

Joos S, Hickam D, Borders L. Patients' desires and satisfaction in general medicine clinics. *Public Health Rep* 1993;**108**:751–9.

Krupat E, Rosenkranz S, Yeager C, Barnard K, Putnam S, Inui T. The practice orientations of physicians and patients: the effect of doctor–patient congruence on satisfaction. *Patient Educ Counsel* 2000;**39**:59.

Webster GO. Final report on the Patient Satisfaction Questionnaire project: executive summary. [Place of publication unknown]: American Board of Internal Medicine; 1989.

Medical Interview Satisfaction Scale (MISS):

Wolf M, Putnam S, James S, Stiles W. The medical interview satisfaction scale: development of a scale to measure patient perceptions of physician behavior. *J Behav Med* 1978;**1**:391–401.

Kinnersley P, Stott N, Harvey I, Hackett P. A comparison of methods for measuring patient satisfaction with consultations in primary care. *Fam Pract* 1996;**13**:41–51.

Patient–Doctor Interaction Scale:

Bowman M, Herndon A, Sharp P, Dignan M. Assessment of the patient–doctor interaction scale for measuring patient satisfaction. *Patient Educ Counsel* 1992;**19**:75–80.

HMO disenrolment:

Weiss B, Senf J. Patient satisfaction survey instrument for use in health maintenance organizations. *Med Care* 1990;**28**:434–44.

Older Patients Satisfaction Scale (OPSS):

Cryns A, Nichols R, Katz L, Calkins E. The hierarchical structure of geriatric patient satisfaction. *Med Care* 1989;**27**:802–16.

Patient Judgment of Hospital Quality (PJHQ):

(Picker–Commonwealth Fund Project, a patient-centred measure of hospital performance)

Rubin H. Patient evaluations of hospital care: a review of the literature. *Med Care* 1990;**28**:S3–S9.

Meterko M, Rubin H. Patient judgments of hospital quality: a taxonomy. *Med Care* 1990;**28**:S10–S14.

Nelson E, Ware JJ, Batalden P. Pilot study methods: design of study. *Med Care* 1990;**28**:S15–S16.

Rubin H, Ware JJ, Nelson E, Meterko M. The patient judgments of hospital quality (PJHQ) questionnaire. *Med Care* 1990;28:S17–S18.

Nelson E, Rubin H, Hays R, Meterko M. Response to questionnaire. *Med Care* 1990;**28**:S18–S22.

Rubin H, Ware JJ, Hays R. The PJHQ questionnaire: exploratory factor analysis and empirical scale construction. *Med Care* 1990;**28**:S22–S29.

Hays R, Nelson E, Rubin H, Ware JJ, Meterko M. Further evaluations of the PJHQ scales. *Med Care* 1990;**28**:S29–S39.

Ware JJ, Berwick D. Conclusions and recommendations. *Med Care* 1990;**28**:S39–S56.

Weisman E, Koch N. The patient judgement system: reliability and validity. *Qual Rev Bull* 1989;**15**:185–9.

Hays R, Larson C, Nelson E, Batalden P. Hospital quality trends. A short-form patient-based measure. *Med Care* 1991;**29**:661–8.

Inpatient hospital care:

Press I, Ganey R. What experiences contribute to satisfaction with the hospital? *Mich Hospitals* 1990;**26**:16–21.

Picker/Group Hospitals Association of America – inpatient care – evolved to Consumer Assessment of Health Plans System (CAHPS):

Cleary P, Edgman-Levitan S, Walker J, Gerteis M, Delblanco T. Using patient reports to improve medical care: a preliminary report from 10 hospitals. *Qual Manage Health Care* 1993;**2**:31–8.

Ryan M, Collins F, Bowen-Dowd J, Pierce P. Measuring patient satisfaction: a case study. *J Nurs Care Qual* 1995;**9**:44–53.

Gerteis M. What patients really want. Health Manage Q 1993;(3rd quarter):2–6.

Reiley P, Pike A, Phipps M, *et al.* Learning from patients: a discharge planning improvement project. *Journal Qual Improvement* 1996;**22**:311–22.

External Patient Satisfaction Survey (EPSS):

Dufrene R. An evaluation of a patient satisfaction survey: validity and reliability. *Eval Program Plann* 2000;**23**:293–300.

SERVQUAL:

A generic measure of consumers' perceptions of service quality:

Parasuraman A, Zeithaml V, Berry L. SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality. *J Retailing* 1988;**64**:12–40.

Carman J. Consumer perceptions of service quality: an assessment of the SERVQUAL dimensions. *J Retailing* 1990;**66**:33–55.

Adapted to healthcare in general:

Bowers M, Swan J, Koehler W. What attributes determine quality and satisfaction with health care delivery? *Health Care Manage Rev* 1994;**19**:49–55.

Adapted to hospital services:

Babakus E, Mangold W. Adapting the SERVQUAL scale to hospital services: an empirical investigation. *Health Serv Res* 1992;**26**:767–86.

Adapted to nursing:

Scardina S. SERVQUAL: a tool for evaluating patient satisfaction with nursing care. *J Nurs Care Qual* 1994;**8**(2):38–46.

Patient Satisfaction with Nursing Care (PSNC):

Primary setting:

Ventura M, Fox R, Corley M, Mercurio S. A patient satisfaction measure as a criterion to evaluate primary nursing. *Nurs Res* 1982;**31**:226–30.

Adapted to hospitals:

Jacox A, Bausell B, Mahrenholz D. Patient satisfaction with nursing care in hospitals. *Outcomes Manage Nurs Pract* 1997;**1**:20–8.

Hinshaw A, Atwood J. A patient satisfaction instrument: precision by replication. *Nurs Res* 1981;**31**:170–5.

La Monica–Oberst Patient Satisfaction Scale (LMOPSS):

Munro B, Jacobsen B, Brooten D. Re-examination of the psychometric characteristics of the La Monica–Oberst patient satisfaction scale. *Res Nurs Health* 1994;**17**:119–25.

La Monica E, Oberst M, Madea A, Wolf R. Development of a patient satisfaction scale. *Res Nurs Health* 1986;**9**:43–50.

Patient satisfaction with nursing care in inpatient and ambulatory settings:

Ketefian S, Redman R, Nash M, Bogue E. Inpatient and ambulatory patient satisfaction with nursing care. *Qual Manage Health Care* 1997;**5**:66–75.

Patient satisfaction with nursing care: a magnitude estimation approach – in hospital:

Eriksen L. Measuring patient satisfaction with nursing care: magnitude estimation approach. In: Waltz C, Strickland O, editors. Measurement of nursing outcomes. New York: Springer Publishing; 1988. p. 523–37.

Patient Satisfaction Questionnaire (PSQ) to assess the quality of non-physician encounters:

Guzman P, Sliepcevich E, Lacey E, Vitello E, Matten M, Woehlke P, *et al.* Tapping patient satisfaction: a strategy for quality assessment. *Patient Educ Counsel* 1988;**12**:225–33.

Satisfaction with Decisions Scale:

Holmes-Rovner M, Kroll J, Schmitt N, Roxner D, Breer M, Rothere M, *et al.* Patient satisfaction with health care decisions: the Satisfaction with Decisions Scale. *Med Decis Making* 1996;**16**:58–64.

Other countries

In hospital – Spain:
Garcia JC, Martinez MR, Ferrer AR. Hospitalized and recently discharged patient satisfaction. *Enferm Clin* 1995;**5**:190–8 (Spa).

Primary care – Israel:
Linder-Pelz S, Epstein L, Tamir A. The meaning of patient satisfaction with prepaid primary health care in Israel. *Eval Program Plann* 1983;**6**:385–93. (Based on PSQ above)

Hospital Quality Improvement – Sweden:
Arnetz J, Arnetz B. The development and application of a patient satisfaction measurement system for hospital-wide quality improvement. *Int J Qual Health Care* 1996;**8**:555–66.

In hospital – Australia:
Steven I. A patient satisfaction questionnaire as a teaching and comparative audit tool. *Qual Assur Health Care* 1991;**3**:41–9.

General practice – Australia:
Steven I, Douglas R. A self-contained method of evaluating patient dissatisfaction in general practice. *Fam Pract* 1986;**3**:14–19.

Frequency of instrument use (>1) in primary empirical studies

Instrument	No. studies
UK	
Surgery Satisfaction Questionnaire	2
Consultation Satisfaction Questionnaire	5
USA	
Satisfaction with physician and medical care	4
Patient Satisfaction with Medical Care/Patient Satisfaction Scale	6
Patient Satisfaction Questionnaire	10
Visit Specific Questionnaire	10
Medical Interview Satisfaction Scale	8
American Board of Internal Medicine	3
Patient Judgment of Hospital Quality	5
Picker/Group Hospital Association of America	8
SERVQUAL	2

Reviews of instruments

Van Campen C, Sixma H, Friele R, Kerssens J, Peters L. Quality of care and patient satisfaction: a review of measuring instruments. *Med Care Res Rev* 1995;**52**:109–33.

McDaniel C, Nash J. Compendium of instruments measuring patient satisfaction with nursing care. *Qual Rev Bull* 1990;**16**:182–8.

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Feedback

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We look forward to hearing from you.

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