REVIEW

Patient satisfaction in emergency medicine

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A systematic review was undertaken to identify published evidence relating to patient satisfaction in emergency medicine. Reviewed papers were divided into those that identified the factors influencing overall satisfaction in emergency department patients, and those in which a specific intervention was evaluated. Patient age and race influenced satisfaction in some, but not all, studies. Triage category was strongly correlated with satisfaction, but this also relates to waiting time. The three most frequently identified service factors were: interpersonal skills/staff attitudes; provision of information/explanation; perceived waiting times. Seven controlled intervention studies were found. These suggested that increased information on ED arrival, and training courses designed to improve staff attitudes and communication, are capable of improving patient satisfaction. None of the intervention studies looked specifically at the effect of reducing the perceived waiting time. Key interventions to improve patient satisfaction will be those that develop the interpersonal and attitudinal skills of staff, increase the information provided, and reduce the perceived waiting time. Future research should use a mixture of quantitative and qualitative methods to evaluate specific interventions.

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Over the past 10 years there has been increasing interest in "consumer satisfaction" in the NHS, starting with the Patients' Charter of 1991, and culminating with the NHS Plan.[1]

The essence of the NHS Plan is to make patients' views and interests the driving force behind reform. Among the core principles of the plan is the statement that "quality will not just be restricted to clinical aspects of care, but include … the entire patient experience". To show that the service is responding to patient priorities, every NHS organisation is now required to publish an annual account of the views received from patients, and the action taken as a result.[2]

Few clinicians would disagree with the idea that improving patient satisfaction is a desirable end in itself. Related benefits may include improved morale and job satisfaction in emergency department (ED) staff, a reduced tendency for patients to seek further opinions, and a reduced incidence of complaints and litigation. There is also evidence of improved patient compliance.[3 4] Improved satisfaction in EDs is likely to have a significant impact on the public view of hospital and emergency care in general.

The aim of this systematic review was to identify the published evidence relating to patient satisfaction in emergency medicine, thereby providing useful information for clinicians, and helping to guide future strategies for assessment and improvement in this area.

METHODS

A literature search was carried out using the WebSPIRS from SilverPlatter interface, accessed via the SWICE gateway. The Medline, CINAHL, EMBASE, ASSIA, and HMIC databases were searched from January 1990 to January 2002, using the terms [PATIENT-SATISFACTION and ("Emergency Department" or "Accident and Emergency" or "Casualty" (TW))].

Papers of potential relevance were retrieved, and their reference lists searched for additional relevant material. This process was repeated until no new information was found.

Reviewed papers were grouped under two headings:

(1) Research to identify and rank factors influencing overall satisfaction in ED patients.
(2) Intervention studies attempting to improve patient satisfaction in the ED.

RESULTS

The initial computerised database search identified 583 papers of potential relevance. Many papers were found that included measures of patient satisfaction "tagged on" to a clinical intervention study, but these tended to show the acceptability of the intervention, rather than its effect on satisfaction. Such studies were therefore excluded.

The studies reviewed were too heterogeneous for formal meta-analysis. Nevertheless, the following key points emerged:

Choosing factors to assess

Most papers assessed a variety of service factors, process of care measures, or patient related factors chosen from the literature, staff opinions, or ad hoc by the authors.

The most frequently assessed service factors in emergency medicine were: perceived and actual waiting times; explanations/information on multiple aspects of process and treatment; staff attitudes; ED environment; perceived standards of technical care. Table 1 lists the factors assessed in individual studies, the assessments used, and a summary of the main findings.

Table 1 Summary of factor and global satisfaction assessment studies

Author, year, and country	Factors assessed	Method of assessing factor satisfaction	Method of assessing global satisfaction	Main findings
Bjorvell and Steig[15] 1991 Sweden	Perceived levels of information on arrival	100 point visual analogue scale (VAS)	''How do you feel?'' ''Would you return?'' 100 point VAS scale	Increased satisfaction with respect, general treatment and staff attitude related to perceived level of initial information. $p<0.05$
Booth *et al*[31] 1992 UK	Waiting times	4 point Likert scale and open-ended questions	N/A	Satisfaction levels with components of waiting times. ''Ideal'' and target times derived.
Hansagi *et al*[6] 1992 Sweden	Multiple patient and service factors, and triage category	Likert scale and open-ended questions	''Satisfaction with medical treatment'' ''Satisfaction with general care'' Weighted 4 point scale	Triage category and age related to global satisfaction. $p<0.001$
Lewis *et al*[8] 1992 Canada	Triage category, nursing care, physician care, environment, auxiliary staff, waiting times and information	3 point Likert scale and open-ended questions	''Overall satisfaction with ED visit'' Weighted 3 point scale	Separate factor satisfaction levels given. Poor correlation between global satisfaction derived from specific satisfaction ratings and global satisfaction on direct questioning. Only triage category reported as strongly correlated
Maitra *et al*[16] 1992 UK	Waiting times, receptionist helpful, explanations of management, information on delays, interruptions, treatment discussion with doctor	Modified Likert scale and open-ended question	''Satisfied'' or ''not satisfied'' with outcome of visit Dichotomous response	Satisfaction correlates with wait to see doctor ($p<0.003$), doctor's explanation of management ($p<0.002$), total time in ED ($p<0.01$)
Bursch *et al*[13] 1993 USA	Multiple service factors	Likert scale and open-ended questions	''Overall, how satisfied with ED care?'' Unspecified scale	14 service factors correlated with global satisfaction. Top five were: perceived waiting time; caring nurses; ED staff organisation; caring doctor; information given. ($r = 0.63$ to 0.68)
Britten *et al*[14] 1994 UK	None specified to patients. Twelve main themes identified from interview transcripts	Frequency and emphasis in interview transcript	N/A	Factors identified as important are: information; waiting time; quick pain relief; sensitivity to personal circumstances; excessive questions or examination; a pleasant environment
Thompson *et al*[17] 1995 USA	Perceived waiting time	Likert scale	Describe your experience in the ED. Weighted 4 point scale.	Perceived wait relative to expected wait correlates with overall satisfaction. $p<0.001$
Thompson *et al*[18] 1996 USA	Perceived and actual waiting times (to see doctor and for entire visit). Explanation given of delays, and procedures. Staff attitudes	Open-ended questions	Describe experience. Recommendation Weighted 4 and 3 point scales	Information and perceived wait (but not actual wait) correlate with global satisfaction. $p<0.001$
Hall *et al*[7] 1996 USA	Multiple demographic and service factors	Likert scale and open-ended questions	Recommendation Weighted 5 point scale	Nurse and doctor attitudes (care, courtesy, concern), and perceived wait intervals correlate with global satisfaction. No demographic factor correlated (including age)
Rhee *et al*[19] 1996 USA	Nurse and doctor technical ability. Nurse and doctor ''bedside manner''. Receptionist service. Perceived wait intervals	5 point Likert scale	Rate overall quality (weighted 5 point scale) Recommendation (dichotomous)	Patient perceptions of technical quality of care ($p<0.001$) and perceived waiting times ($p<0.005$) correlate with global satisfaction, and are more important than bedside manner
Bruce *et al*[32] 1998 UK	30 items on nursing care, environment, ancillary services and information	3 point Likert scales	N/A	Primary area of concern was information about length of waiting time
Yarnold *et al*[11] 1998 (two part study) USA	Perceived waiting times, information and explanations, staff attitudes	Likert scale	''Overall satisfaction'' (symmetrical 5 point scale and weighted 4 point scale)	Overall satisfaction levels are almost perfectly predictable from ratings of perceived staff attitudes
Boudreaux *et al*[12] 2000 USA	22 items including registration, nurse and doctor factors, waiting times, discharge instructions and estimated length of stay	5 point Likert scale	Recommendation Overall satisfaction	Caring staff, perception of safety, understanding discharge instructions, nurse technical skills and waiting time predict overall satisfaction. ($p<0.05$) Perceptions of care outweighed demographics and visit characteristics. Some differences between predictors of overall satisfaction and likelihood to recommend

Table 1 Continued

Author, year, and country	Factors assessed	Method of assessing factor satisfaction	Method of assessing global satisfaction	Main findings
Morgan *et al*[10] 2000 UK	16 varying paired combinations of doctor's manner, waiting time, service accessibility, known doctor, consultation type, doctor's shift.	Conjoint analysis (ranking of paired preferences)	N/A	Doctor's manner and waiting times are the most important factors. Patients will tolerate a doctor who seems rushed if they can be seen sooner
Sun *et al*[5] 2000 USA	Nine sociodemographic variables, 15 comorbid conditions, 18 process of care measures. Triage score, five service factors (courtesy, completeness of care, explanation, waiting time, discharge instructions). 19 specified problems	5 point Likert scale	"Overall satisfaction" (5 point Likert scale) Willingness to return (dichotomous response)	Significant process of care measures: triage status, number of treatments. Significant problems: no help when needed; poor explanation of problem cause and test results; not informed about waiting time, when to resume normal activities, or when to reattend. Significant patient factors: age and race. Willingness to return is strongly predicted by satisfaction

Patient factors that influence satisfaction

Most studies collected data on some "background variables", such as age, sex, social status, ethnicity, and severity of illness. Age and race influenced satisfaction in some studies,[5 6] but not all.[7] Triage category was strongly correlated with satisfaction,[5 6 8] although this could be viewed as another indicator of the waiting time.

Inclusion and exclusion criteria varied enormously between studies, and in some were unspecified. The "point of view paradox" dictates that as the severity of illness increases so patient expectations regarding non-clinical service factors decrease,[9] so it is important to be aware of the population in which satisfaction is being measured.

Apart from Morgan *et al*'s survey of Sheffield residents,[10] multicentre studies by Hall[7] and Sun,[5] and Yarnold's comparison of an academic and community ED,[11] most papers reported single centre studies. Table 2 shows the different survey methods, populations, and response rates. A few papers sampled the population in the form of a "census"—that is, they attempted to enlist every patient within the study population over the study period. Others used population sampling, either random, systematic, or by quota.

Service factors that influence satisfaction

Three broad headings cover the most commonly identified areas of importance. These are "interpersonal skills/perceived staff attitudes",[7 10–13] "provision of information/explanation",[5 7 13–18] and "aspects related to waiting times", particularly the perceived waiting time in relation to the patient's expectation.[7 8 10 12–14 17–19] The relative ranking of specific service factors in relation to global satisfaction remains unresolved.

Intervention studies

In total, seven controlled trials that studied satisfaction as a primary outcome measure were found, with two of these from the UK. Three assessed whether the provision of general information to patients on their arrival influenced overall satisfaction.[20–22] Two of these related to written information, and one to an informational video. All three demonstrated improved satisfaction, as well as an improvement in the perception of other service factors, in the informed groups.

Two studies report improved patient satisfaction as a result of staff training. In one paper all ED staff underwent "customer service training",[23] while in the other doctors attended a communication skills workshop.[24]

The two UK papers focus on nurse triage,[25] and an emergency nurse practitioner (ENP) service.[26] Nurse triage had little effect on patient satisfaction, but a comparison between traditional ED and ENP care showed that ENP care led to improved satisfaction with some communication related service factors.

DISCUSSION

Many problems are inherent in the analysis of satisfaction in ED patients. Firstly, "satisfaction" is not easy to define, secondly, methods of quantifying and qualifying satisfaction are still emerging in emergency medicine, and thirdly, emergency physicians care for the largest and most diverse patient population.

Quantifying "satisfaction"

Studies aiming to correlate specific factors with "overall satisfaction" have chosen various tools with which to measure global and factor satisfaction. Techniques range from using simple questions with dichotomous answers, to non-directive interviewing techniques where "main themes" are identified. Direct questions using the word "satisfaction" have been used, or overall satisfaction is extrapolated from indirect questions such as "willingness to recommend" or "willingness to return".[5 12] Combined factor satisfaction scores have also been used to predict overall satisfaction,[15] although this approach has been questioned.[8]

Questionnaire validity is difficult to assess, as there is no "gold standard" for patient satisfaction. However, in some studies patient views have been "validated" against independent measures of doctors' interpersonal skills, communication styles, and technical proficiency.[27]

Response rates

Adequate survey response rates are a challenge to achieve, and vital for results to be meaningful. Response rates will be increased by "on the spot" surveys in the ED, although late night attendees have often been excluded by studies using convenience sampling. If surveys are conducted after the patient has left the ED, bias can be introduced by the delay, and responses tend to be more positive if the acute problem has resolved.[28] Few studies to date have been longitudinal, assessing changes in attitude over time,[15] although a small number make more than one approach to the respondent.[5]

Many ED patients are not competent to respond. Some surveys therefore include "accompanying person" respondents or, when the study population includes children,

parent/guardian respondents.[11 13 16–19] Reported satisfaction levels in these situations are likely to be influenced by the factors most affecting the proxy respondent, for example, waiting times, facilities, communication, and access to the patient.

Future directions

The complexities of the relation between separate care factors and global satisfaction mean that local intervention studies will be unlikely to show striking improvements in overall satisfaction. Nevertheless, the existing literature does indicate which areas to concentrate on, and which approaches to use, in future research studies.

To assess the impact of specific interventions, and changes over time, a baseline must first be established. Methodologies for assessing patient satisfaction, both with individual service factors and the overall emergency department experience, are now becoming more thoroughly developed and refined. The most commonly used tool is a Likert scale, which offers a range of choices from strongly positive to strongly negative. Because patient responses are biased towards positive choices many researchers have used ''asymmetrical'' or ''weighted'' scales to overcome this.[27] The number of points on the scales varies within and between papers, but it has been shown that scales with more than five responses do not carry significant advantages.[27] Visual analogue scales are also popular, and give comparable results to Likert scales.[27] Some authors have recently proposed other methods for satisfaction assessment.[5 28]

Focus groups may be used to identify key issues of patient concern. Data collected from such groups have been compared with government assumptions of what patients want,[14] and used to validate questionnaire design.[29] A review of complaints (and compliments) will also provide qualitative information that may be very useful at a local level.

Previous research indicates that three interventions worthy of further study are:

(1) Improving interpersonal, attitudinal and communication skills in ED staff. There is evidence that a short training course may be highly effective in this regard.[23 24]
(2) Provision of more information and explanation.
(3) Reduction of the perceived waiting time.

Table 2 Methodology of factor and global satisfaction assessment studies

Author and date	Survey format	Delivery	Timing	Respondent	Survey population	Sample	Response rate (%)
Bjorvel and Steig[15] 1991	Questionnaire	Self completed	On arrival and before discharge	Adult patients	Not admitted, classed by selected problems	187 patients. Convenience	77
Booth *et al*[31] 1992	Questionnaire	Self completed	During ED visit	Not known	Not admitted. Non-ambulance patients	342 patients. Consecutive	45 (some incomplete)
Hansagi *et al*[6] 1992	Questionnaire	Postal	Few days after discharge	Not known	Not admitted, or discharged within four weeks	567 patients	75
Lewis *et al*[8] 1992	Two part questionnaire	Self completed	During ED visit	Not known	All patients	152 patients. Systematic sample	Unknown
Maitra *et al*[16] 1992	Questionnaire	Self completed	In ED after treatment	Patient or accompanying person	All ED patients	433 patients. Systematic sample	51
Bursch *et al*[13] 1993	Questionnaire	Telephone	Within one week of discharge from ward or ED	Patient or parent/ guardian	All patients	258 patients. Census	59
Britten *et al*[14] 1994	Semi-structured interview	Trained interviewer	One or two days after admission	Adult patients	Adult patients, admitted via the ED	83 patients. Selected ward inpatients	Unknown
Thompson *et al*[17] 1995	Questionnaire	Telephone	Two to four weeks after ED visit	Adult patient or parent/guardian	All non- admitted patients	1574 patients. Random sample	43
Thompson *et al*[18] 1996	Questionnaire	Telephone	Two to four weeks after ED visit	Adult patient or parent/guardian.	All non- admitted patients with recorded waiting times	1631 patients. Random sample	45
Hall *et al*[7] 1996	Questionnaire	Postal	Three to four days after ED visit	Not specified	Non-admitted patients from 187 emergency departments	9106 patients. Consecutive sample	25
Rhee *et al*[19] 1996	Questionnaire	Telephone	Within 60 days of ED visit	Patients, parents/ guardians or accompanying person	All patients	618 patients. Random sample	46
Yarnold *et al*[11] 1998 (1)	Questionnaire	Postal	One week after ED visit	Adult patient or parent/guardian	Non-admitted patients from an academic hospital	2277 patients. Consecutive sample	17
Yarnold *et al*[11] 1998 (2)	Questionnaire	Telephone	Two to four weeks after visit	Adult patient or parent/guardian	All non-admitted patients from a community hospital	1,287 patients. Random sample	53
Boudreaux *et al*[12] 2000	Questionnaire	Telephone	10 days after ED visit	Not known	Not known	437 patients	39
Morgan *et al*[10] 2000	Focus group and questionnaire	Postal	Not related to ED visits	Adult Sheffield residents	10800 adult responders to a previous study	271 respondents. Random sample	65
Sun *et al*[5] 2000	Medical notes review Questionnaires	Self completed questionnaire. Telephone interview	In ED 10 days after ED visit	Adult patients	Adult patients with selected, high prevalence problems from five urban EDs.	2333 patients. Mixed convenience and consecutive samples.	67

The last is currently receiving considerable government attention in the UK,[30] with the anticipation that waiting times will fall and, presumably, patient satisfaction will improve. Future research could usefully study the effect of this and similar interventions in the ED, as well as clarifying the relative importance of the main service factors identified.

The preferred methodological approach to future intervention studies will depend upon local circumstances and the factor(s) under study. Over the past 10 years the design and interpretation of satisfaction studies has become increasingly sophisticated. Interest in qualitative, rather than quantitative, research methods is growing, and some recent studies have combined the two approaches in an attempt to develop more reliable and valid tools for measuring satisfaction.[10 29] Multi-centre studies are generally preferable, because of their inmproved external validity, but very few have been reported to date. For some factors (such as patient information) a randomised design is feasible, but for other interventions (such as reductions in the perceived waiting time) alternative or novel approaches may be required.

CONCLUSIONS

To a great extent, patients must trust their clinicians to continuously review and improve their clinical and technical skills. The emphasis now placed on evidence based practice recognises this responsibility. However, in the quest to improve the science of medicine, medicine as an art may be suffering. The balance will be somewhat restored if we succeed in identifying, and responding to, wider patient needs. The study of patient satisfaction is a step in this direction.

Research to date has identified which broad aspects of the service our patients care most about. There are many potential interventions that could be tailored to local needs, and the papers already published can usefully inform future strategies for assessing and improving patient satisfaction in emergency medicine. We will never please ''all of the people all of the time'', but within our own departments we can now start investigating measures that will please more of our patients most of the time.

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