Use of the consultation satisfaction questionnaire to examine patients' satisfaction with general practitioners and community nurses: reliability, replicability and discriminant validity

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SUMMARY

Background. *Primary health care services are the most frequently used in the health care system. Consumer feedback on these services is important. Research in this area relates mainly to doctor–patient relationships which fails to reflect the multidisciplinary nature of primary health care.*

Aim. *A pilot study aimed to examine the feasibility of using a patient satisfaction questionnaire designed for use with general practitioner consultations as an instrument for measuring patient satisfaction with community nurses.*

Method. *The questionnaire measuring patient satisfaction with general practitioner consultations was adapted for measuring satisfaction with contacts with a nurse practitioner, district nurses, practice nurses and health visitors. A total of 1575 patients in three practices consulting general practitioners or community nurses were invited to complete a questionnaire. Data were subjected to principal components analysis and the dimensions identified were tested for internal reliability and replicability. To establish discriminant validity, patients' mean satisfaction scores for consultations with general practitioners, the nurse practitioner, health visitors and nurses (district and practice nurses) were compared.*

Results. *Questionnaires were returned relating to 400 general practitioner, 54 nurse practitioner, 191 district/practice nurse and 83 health visitor consultations (overall response rate 46%). Principal components analysis demonstrated a factor structure similar to that found in an earlier study of the consultation satisfaction questionnaire. Three dimensions of patient satisfaction were identified: professional care, depth of relationship and perceived time spent with the health professional. The dimensions were found to have acceptable levels of reliability. Factor structures obtained from data relating to general practitioner and community nurse consultations were found to correlate significantly. Comparison between health professionals showed that patients rated satisfaction with professional care significantly more highly for nurses than for general practitioners and health visitors. Patients' ratings of satisfaction with the depth of relationships with health visitors was significantly lower than their ratings of this relationship with the other groups of health professionals. There were so significant differences between health professional groups regarding patients' ratings of satisfation with the perceived amount of time spent with health professionals.*

Conclusion. *The pilot study showed that it is possible to use the consultation satisfaction questionnaire for both general practitioners and community nurses. Comparison between health professional groups should be undertaken with caution as data were available for only a small number of consultations with some of the groups of health professionals studied.*

Keywords: patient satisfaction; questionnaires; consultation process; primary health care services.

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Introduction

THE World Health Organization philosophy of primary health care stresses the importance of involving the community in the development, implementation and evaluation of services.[1] Its principles of equity, accessibility, acceptability and cost effectiveness echo Maxwell's criteria for quality in health care.[2] There is, however, little evidence to suggest that public participation in the determining and evaluating of primary health care services is widespread.[3]

In seeking to improve the quality of primary health care by involving recipients, the government has extended *The patient's charter* to include general medical services.[4] The charter sets minimum standards against which patients can judge the quality of services provided. To comply with charter standards and the 1990 contract for general practitioners[5] family health services authorities and medical audit advisory groups have sought suitable measurement techniques to monitor patient satisfaction. Studies of patient satisfaction with general practice centre around satisfaction with the organizational aspects of the practice (for example, surgery access and appointment systems)[6] and satisfaction with general practitioner consultations (for example, the communication style of the doctor and continuity of care).[7,8]

Numerous reports advocate a team approach to primary health care[9,10] and there is evidence to show that patients are willing to see a nurse rather than a doctor in some situations.[11] All nurses are being encouraged to broaden the scope of their practice and in certain circumstances may be a patient's first point of contact with the health care system.[12] After a patient's initial medical diagnosis, practice nurses may take on total management of care, particularly in relation to chronic diseases such as asthma and diabetes.[12]

Primary health care services are the most frequently used in the health care system.[13] It would, therefore, seem important to elicit consumer feedback on these services. However, research in this area largely relates to doctor–patient relationships[14] thus failing to reflect the multidisciplinary aspect of primary health care. In other health care settings patients' opinions of nurses have been found to be a predictor of overall satisfaction with care.[15,16] Caplan and Sussman demonstrated that the nurse's role permeates the entire range of patients' experience with the clinic and through this experience, indirectly contributes a great deal to the patient's general satisfaction.[17]

As part of a larger study examining effective multidisciplinary teamwork, a pilot study was carried out in 1993 to examine the

feasibility of adapting a consultation satisfaction questionnaire designed for use with general practitioner consultations as an instrument for measuring patient satisfaction with community nurses (a nurse practitioner, district nurses, practice nurses and health visitors).

Method

Adapting the consultation satisfaction questionnaire

The 'dialogue'[18] patient satisfaction questionnaire comprises two questionnaires, one measuring patient satisfaction with the surgery environment and general services (surgery satisfaction questionnaire; not used in the present study) and the other measuring patient satisfaction with general practitioner consultations (consultation satisfaction questionnaire). Development of the patient satisfaction questionnaire and validity testing have been reported elsewhere.[19-21] 'Dialogue' has been made widely available to medical audit advisory groups for distribution to local practices. Instructions for carrying out surveys are included and medical audit advisory groups are issued with a computer package (*EPI INFO*) for analysing data and feeding back results to practices. Baseline data are available on over 100 practices to use for comparison.

The consultation satisfaction questionnaire comprises 18 statements which respondents are asked to rate on a five-point scale from strongly agree to strongly disagree. To avoid the tendency for respondents to rate everything at the top end of the scale, negative and positive statements are intermingled. Statements covering similar points are included in an attempt to ensure reliability.

To preserve the reliability of the questionnaire while adapting it to measure patient satisfaction with community nurses it was important to make only necessary changes to the questions. An attempt was made to adapt the questionnaire once to suit all community nurses. However, this did not prove possible as patients often do not perceive health visitors as nurses, and health visitors tend to give advice rather than carry out hands-on care.[22] Therefore, the wording on the original questionnaire was revised for district and practice nurses and for health visitors. For example, a statement exploring patient satisfaction with a health professional's thoroughness of assessment was worded 'This doctor was very careful to check everything when examining me' in the original questionnaire and was revised to 'This nurse was very careful to check everything when carrying out my care' for assessing district nurses and practice nurses but was revised to 'This health visitor was very careful to check everything when discussing my family's health' for assessing health visitors. Additionally, minor amendments were made to the questionnaire to enable it to be completed by patients attending the nurse practitioner.

General practice and patient sample

Three general practices agreed to participate in the study. These are all five-partner, fundholding practices with 11 000 patients or more. Practice X is situated in an urban area with a range of social classes, practice Y serves a deprived area with a high number of social problems and practice Z is situated in a suburban area made up of social classes 1–3N. Practice Y employs a nurse practitioner.

Instructions for using the 'dialogue' package suggest a sample of 75 patients per general practitioner. However, as each practice had five general practitioner partners it was decided to sample 50 patients per general practitioner plus 100 patients for all district nurse contacts, 100 for all practice nurse contacts and 50 for all health visitor contacts in each practice. The sample sizes of patients for community nurses were based on the average number of patients seen in one week by these nurses. Each practice was therefore given 500 questionnaires. In addition to its 500, practice Y was given 75 questionnaires to distribute to patients attending the nurse practitioner.

Data collection

Practices carried out the study during a two-week period to allow for staff holidays and days off. Patients attending for consultation with a general practitioner or for treatment in the surgery from a practice nurse or nurse practitioner were asked to complete questionnaires before leaving the surgery. Instructions on the questionnaire promised anonymity and confidentiality; patients were asked to place completed questionnaires in a sealed box at the surgery's reception. Practice Z requested that patients be given a pre-paid envelope to complete questionnaires at home if they wished; this request was granted.

Patients seen at home by district nurses and health visitors were asked to complete questionnaires. Patients were given a pre-paid envelope to return the questionnaires directly to B P.

Analysis

Data were analysed using *SPSS PC+*.[23] Factor analysis is a method of grouping data to make them easier to analyse. By using such a procedure groups of intercorrelated items load (cluster) onto one factor which then forms a scale (dimension). For the analysis in this study a form of factor analysis known as principal components analysis was used.[24] Responses to the 18 items on the consultation satisfaction questionnaire were coded from one to five, higher scores indicating greater satisfaction. The initial principal components analysis used data from all the questionnaires. The *SPSS* output identifies not only factors but also the amount of variance they explain, depicted as Eigen values. One criterion for determining which factors to retain is known as Kaiser's criterion which retains only factors with Eigen values greater than one. Where an item is loaded on two factors, the item is assigned to the factor displaying the greatest loading value. The factor structure obtained in the principal components analysis was compared with that obtained in an earlier study of the consultation satisfaction questionnaire.[20]

The dimensions identified in the analysis were tested for internal reliability (Cronbach's alpha coefficient) and replicability (Pearson's r correlation coefficient). Levels of reliability were compared with those obtained in the original study.[19] To establish discriminant validity patients' mean satisfaction scores for consultations with general practitioners, the nurse practitioner, health visitors and district and practice nurses were compared. One-way analysis of variance was computed using the Sheffe test as a method of multiple pairwise comparison.[25]

Results

A total of 728 out of 1575 questionnaires were returned (response rate 46.2%). Although overall response rates were similar across the three practices there were wide variations in patients' response rates following consultations with different types of health professional (Table 1). For example, 69.2% of patients consulting general practitioners in practice Y returned consultation satisfaction questionnaires compared with 37.2% of those in practice Z. Conversely, 80.0% of patients in practice Z seen by a health visitor returned questionnaires compared with 30.0% in practice Y.

Principal components analysis

Analysis identified three factors with Eigen values greater than

Table 1. Proportion of satisfaction questionnaires returned by patients following consultations with/visits by different health professionals in the three practices studied.

Consultation with	No. (%) of questionnaires returned by patients in		
	Practice X	Practice Y	Practice Z
GP	134 *(53.6)*	173 *(69.2)*	93 *(37.2)*
Nurse practitioner	–	54 *(72.0)*	–
District/ practice nurses	84 *(42.0)*	25 *(12.5)*	82 *(41.0)*
Health visitors	28 *(56.0)*	15 *(30.0)*	40 *(80.0)*
Total	246 *(49.2)*	267 *(46.4)*	215 *(43.0)*

one. The results of the principal components analysis of data on patients' satisfaction relating to consultations with all health professionals are shown in Table 2 (for ease of interpretation, only items with a loading value of 0.40 or greater are shown on the table). The analysis demonstrated a factor structure similar to that found in an earlier study of the consultation satisfaction questionnaire.[20]

The first factor comprised nine items. These items related to aspects of competent care delivery, incorporating clinical and communication skills. This dimension was labelled 'professional care'. The same items loaded onto this dimension as in the original study[19] except for the inclusion of items one and 17 which originally appeared in a separate overall patient satisfaction dimension.

The five items which loaded on to the second factor were the same as those in the original study.[19] These items related to the nature of the health professional–patient relationship and this dimension was labelled 'depth of relationship'.

The third factor comprised three high-loading items relating to time spent with the health professional. This dimension was labelled 'perceived time'. Item seven also loaded on this factor although it was originally used as part of the overall patient satisfaction dimension.

Two further principal components analyses were carried out using data relating to patients' satisfaction with consultations with general practitioners and nurses (the nurse practitioner, district nurses, practice nurses and health visitors); Table 2. Both of these analyses displayed the same three-factor structure. However, item 17 did not load well on any of the three factors for general practitioners or for nurses and was therefore excluded. It is debatable whether items that are similarly loaded on two factors should be retained or rewritten.[26] For example, for general practitioner and nurse consultations item 13 loaded on the first and second factors but when responses were aggregated for all health professionals this was not the case and item 13 only loaded on the first factor. The decision was therefore taken to retain the scales and items in their original form, for the purpose of this study.

Reliability

Cronbach's alpha measures of internal consistency were computed for each of the three dimensions — professional care, depth of relationship and perceived time — first by combining data regarding patients' satisfaction for all health professionals and then separating general practitioner and nurse consultations. The results are presented in Table 3, together with mean scores and standard deviations. Although levels of reliability are slightly lower than those of the original study of general practitioners,[19] they are nevertheless acceptable.[24] Levels of reliability in the original study were 0.91 (professional care), 0.87 (depth of relationship) and 0.82 (perceived time).

Replicability

Having established the reliability of the factor structure of the consultation satisfaction questionnaire with a range of health professionals, the slight variations in loadings between data derived from general practitioner and community nurse consultations brought into question the stability of the factor structure when used in this way. Pearson's r correlation coefficient, which is sensitive to both the magnitude and loading patterns of factors[27] was therefore used to compare the general practitioner consultation and community nurse consultation factor structures. A significant correlation was found between the 'professional care' dimensions on the general practitioner and community nurse consultation factor structures ($r = 0.68$, $P<0.01$). Significant correlations were also found between both the 'depth of relationship' dimensions ($r = 0.80$, $P<0.001$) and the 'perceived time' dimensions ($r = 0.87$, $P<0.001$) on the general practitioner and community nurse consultation factor structures. This shows that the three dimensions of satisfaction identified were the same when measured for general practitioner or community nurse consultations.

Discriminant validity

In order to establish how well the consultation satisfaction questionnaire discriminated between different groups of health professionals, mean scores and 95% confidence intervals were computed for the three dimensions for the four types of health professional: general practitioners, the nurse practitioner, district and practice nurses and health visitors. The results of the analysis are presented in Table 4.

Professional care. Analysis of variance of mean scores on the 'professional care' dimension by health professional group yielded an F ratio of 12.28 (3 degrees of freedom (df), $P<0.001$). Scheffe test results indicated that patient satisfaction with professional care was rated significantly more highly for district and practice nurses than for general practitioners and health visitors ($P<0.01$) but was not significantly different compared with nurse practitioners.

Depth of relationship. Analysis of variance of mean scores on the 'depth of relationship' dimension yielded an F ratio of 14.32 (3 df, $P<0.001$). Scheffe test results indicated that there were no significant differences in patients' ratings of satisfaction with the depth of their relationships with general practitioners, the nurse practitioner and district and practice nurses. However, patients' rating of satisfaction with the depth of professional relationships with health visitors was significantly lower than their ratings of this relationship with general practitioners and district and practice nurses ($P<0.01$) and the nurse practitioner ($P<0.05$).

Perceived time. Overall, patients appeared satisfied with the perceived amount of time spent with health professionals although mean satisfaction scores were lower than those for professional care. There was no significant difference in patients' mean satisfaction scores on the 'perceived time' dimension between health professional groups.

Discussion

The shift in focus of health care from acute hospital care to provision of a wider range of services in primary care settings reemphasizes the need for a team approach to care.[28] Evaluation of services by users promotes the concept of 'consumer sovereignty'[29] but the limitations of patient satisfaction studies are widely documented.[14,30] Driven by the impetus of *The patient's charter* general practices are being encouraged to undertake patient satisfaction studies for inclusion in annual reports to fam-

Table 2. Principal components analyses of data on patients' satisfaction relating to consultations with all health professionals, with general practitioners and with community nurses,[a] together with Eigen values and values for percentage of variance explained.

Item no.[b]	Satisfaction questionnaire statement	Loading value of items on consultation satisfaction questionnaire for: All consultations, factor 1	All consultations, factor 2	All consultations, factor 3	GP consultations, factor 1	GP consultations, factor 2	GP consultations, factor 3	Nurse consultations, factor 1	Nurse consultations, factor 2	Nurse consultations, factor 3
2	This doctor/nurse/health visitor was very careful to check everything when examining me/carrying out my care/ discussing my family's health	**0.80**[c]			**0.79**[c]			**0.80**[c]		
9	The doctor/nurse/health visitor listened very carefully to what I had to say	**0.73**			**0.74**			**0.75**		
1	I am totally satisfied with my visit to/ from this doctor/nurse/health visitor	**0.68**			**0.66**			**0.68**		
6	The doctor/nurse/health visitor told me everything about my treatment/care/ explained the reasons for advice given	**0.68**			**0.71**			**0.66**		
10	I thought this doctor/nurse/health visitor took notice of me as a person	**0.64**			**0.57**	0.42		**0.67**		
3	I will follow this doctor's/nurse's/health visitor's advice because I think he/she is absolutely right	**0.60**			**0.66**			**0.64**		
17	I am not completely satisfied with my visit to/from this doctor/nurse/ health visitor	**0.44**			–			–		
13	This doctor/nurse/health visitor was interested in me as a person not just my illness/interested in the health of my whole family	**0.54**			**0.54**	0.52		0.50	**0.58**[d]	
12	I understand my illness/about my family's health much better after seeing this doctor/nurse/health visitor	**0.49**	0.42		**0.69**				**0.46**	
14	This doctor/nurse/health visitor knows all about me		**0.81**[d]		0.43	**0.68**[d]			**0.83**	
8	There are some things this doctor/nurse/ health visitor does not know about me		**0.76**			**0.76**			**0.73**	
18	I would find it difficult to tell this doctor/nurse/health visitor about some private things		**0.53**			**0.69**			**0.48**	
4	I felt able to tell this doctor/nurse/health visitor about very personal things	0.45	**0.59**		0.42	**0.59**		0.52	**0.57**	
15	I felt this doctor/nurse/health visitor really knew what I was thinking		**0.69**		0.47	**0.59**			**0.71**	
16	I wish it had been possible to spend a little longer with this doctor/nurse/health visitor			**0.83**[e]			**0.85**[e]			**0.83**[e]
5	The time I was able to spend with this doctor/nurse/health visitor was a bit too short			**0.83**			**0.83**			**0.83**
11	The time I was able to spend with this doctor/nurse/health visitor was not long enough to deal with everything I wanted			**0.82**			**0.78**			**0.83**
7	Some things about the consultation with the doctor/nurse/health visitor could have been better	0.42		**0.59**			**0.63**			**0.53**
	Eigen value of factor	6.54	2.26	1.24	6.99	2.04	1.22	6.37	2.45	1.21
	% variance	*38.6*	*13.3*	*7.3*	*41.1*	*12.5*	*7.2*	*37.4*	*14.4*	*7.1*

[a]Community nurses comprises the nurse practitioner, district nurses, practice nurses and health visitors. [b]Item number according to original consultation satisfaction questionnaire.[19] [c]Loading values marked in bold represent items in'professional care' dimension. [d]Loading values marked in bold represent items in 'depth of relationship' dimension. [e]Loading items marked in bold represent items in 'perceived time' dimension.

Table 3. Mean scores, standard deviations (SD) and Cronbach's alpha coefficient (α) for the three dimensions of patient satisfaction regarding consultations with all health professionals, with general practitioners and with community nurses.

	All consultations (n = 728)		GP consultations (n = 400)		Nurse consultations (n = 328)	
Dimension	Mean score (SD)	α	Mean score (SD)	α	Mean score (SD)	α
Professional care	4.01 (0.59)	0.87	3.96 (0.59)	0.87	4.07 (0.58)	0.86
Depth of relationship	3.46 (0.76)	0.81	3.54 (0.75)	0.81	3.37 (0.75)	0.81
Perceived time	3.59 (0.77)	0.81	3.57 (0.79)	0.84	3.60 (0.74)	0.78

n = number of consultations.

Table 4. Mean consultation satisfaction questionnaire scores for the 'professional care', 'depth of relationship' and 'perceived time' dimensions for general practitioners, the nurse practitioner, district and practice nurses and health visitors.

	Mean score[a] (95% CI) on dimension		
Consultation with	Professional care	Depth of relationship	Perceived time
General practitioners (n = 400)	4.0 (3.9 to 4.0)	3.5 (3.5 to 3.6)	3.6 (3.5 to 3.7)
Nurse practitioner (n = 54)	4.0 (3.9 to 4.2)	3.4 (3.2 to 3.6)	3.6 (3.4 to 3.8)
District/ practice nurses (n = 191)	4.2 (4.1 to 4.3)	3.5 (3.4 to 3.6)	3.7 (3.5 to 3.8)
Health visitors (n = 83)	3.8 (3.6 to 3.9)	3.0 (2.8 to 3.1)	3.5 (3.3 to 3.6)

n = number of consultations with health professional. CI = confidence interval. [a]Higher scores denote greater satisfaction.

ily health services authorities. A report suggests that survey activity in general practice is becoming widespread.[31] A wide variety of methods are being used ranging from the use of commercial survey systems and nationally validated measures to locally devised patient questionnaires and qualitative methods. However, most consultation satisfaction questionnaires relate to doctor–patient contacts. It is the thesis of this paper that measurement of patient satisfaction should extend to satisfaction with other members of the primary health care team. Assuming that patients value the same qualities in contacts with all health professionals[29] it should be possible to develop a general satisfaction measure for use among all health professional groups.

In this study the consultation satisfaction questionnaire retained its reliability and validity when used to assess patient satisfaction with different members of the primary health care team. The discriminant validity showed that the questionnaire was sufficiently sensitive to discriminate between groups of health professionals and if required could be used to compare quality of care between groups. Comparison between groups of health professionals (in this case general practitioners and community nurses) is important if community nurses are to broaden their scope of practice and take on roles that hitherto have been undertaken by general practitioners. In the three study practices patient satisfaction with professional care was rated significantly more highly for district and practice nurses than for general practitioners and health visitors. These findings may or may not hold for other practices. Similarly, such direct comparisons should be treated cautiously as they do not take into account other variables such as the nature of the conditions treated,[32] the age range of the patients[33] and length of consultation.[34] Although there was no significant difference between patient satisfaction ratings regarding perceived time spent with general practitioners and nurses, patients probably expect consultations with general practitioners to be shorter.

It must be stressed that comparisons made between health professional groups were undertaken only to confirm the discriminant validity of the measure, that is, the extent to which it could discriminate between different professional groups. Sample sizes, particularly in relation to patient contacts with health visitors are too small to generalize the results to a wider population. The main purpose of the study was to pilot the use of the consultation satisfaction questionnaire for use with community nurse as well as general practitioner consultations. Therefore, although the response rate was low the sample size was sufficiently large to carry out the statistical tests undertaken to establish the validity and reliability of the measure.

Further work is being undertaken to adapt this questionnaire for use in assessing patient acceptability of and satisfaction with nurse managed primary care programmes and to compare outcomes with those of medically managed care in selected circumstances.

References

1. World Health Organization. The Alma-Ata conference on primary health care. *WHO Chronicle* 1978; **32:** 409-430.
2. Maxwell RJ. Quality assessment in health. *BMJ* 1984; **288:** 1470-1472.
3. Ashton J, Seymour H. *The new public health.* Milton Keynes: Open University Press, 1988.
4. National Health Service Management Executive. *Charter areas in which NHS authorities, general practices and primary health care teams should consider setting standards. EL(92)88 annex C.* Leeds: NHS Management Executive, 1992.
5. Department of Health and the Welsh Office. *General practice in the National Health Service: a new contract.* London: HMSO, 1989.
6. Allen D, Leavey R, Marks B. Survey of patients' satisfaction with access to general practitioners. *J R Coll Gen Pract* 1988; **38:** 163-165.
7. Pendleton D, Hasler J (eds). *Doctor–patient communication.* London: Academic Press, 1983.
8. Inui TS, Carter WB. Problems and prospects for health services research on provider–patient communications. *Med Care* 1985; **23:** 521-538.
9. Department of Health and Social Security. *Neighbourhood nursing: a focus for care.* London: HMSO, 1986.
10. National Health Service Management Executive. *New world, new opportunities: nursing in primary health care.* London: NHS Management Executive, 1993.
11. Hill J. A nurse practitioner rheumatology clinic. *Nursing Standard* 1992; **7** (11): 113.
12. Stilwell B, Greenfield S, Drury M, Hull M. A nurse practitioner in general practice: working style and pattern of consultations. *J R Coll Gen Pract* 1987; **37:** 154-157.

13. Office of Health Economics. *Compendium of health statistics.* London; OHE, 1 1987.
14. McIver S. *Obtaining the views of users of primary and community health care services.* London: King's Fund Centre, 1993.
15. Doering ER. Factors influencing satisfaction with care. *Qual Rev Bull* 1983; **9:** 291-299.
16. Oberst MT. Methodology in behavioural and psychosocial cancer research: patients' perceptions of care. *Cancer* 1984; **53:** 2366-2377.
17. Caplan EK, Sussman MB. Rank order of important variables for patient and staff satisfaction with out-patient services. *J Health Soc Behav* 1966; **7:** 133-137.
18. National Clinical Audit Centre. *Dialogue: a method for surveying patient satisfaction.* Leicester: Eli Lilly NCAC, 1992.
19. Baker R. Development of a questionnaire to assess patients' satisfaction with consultations in general practice. *Br J Gen Pract* 1990; **40:** 487-490.
20. Baker R. The reliability and criterion validity of a measure of patients' satisfaction with their general practice. *Fam Pract* 1991; **8:** 171-177.
21. Baker R, Whitfield M. Measuring patient satisfaction: a test of construct validity. *Qual Health Care* 1992; **1:** 104-109.
22. Poulton BC. Evaluating health visitor practice. *Nursing Standard* 1990; **5**(3): 13-16.
23. Norusis MJ. *SPSS/PC + advanced statistics.* Chicago, IL: SPSS Inc, 1988.
24. Bryman A, Cramer D. *Quantitative data analysis for social scientists.* London: Routledge, 1990.
25. Winer BJ. *Statistical principles in experimental design.* New York, NY: McGraw Hill, 1971.
26. Streiner DL, Norman GR. *Health measurement scales: a practical guide to their development and use.* Oxford Medical Publications, 1989.
27. Tabachnick BG, Fidell LS. *Using multivariate statistics.* New York, NY: Harper and Row, 1983.
28. National Health Service Executive. *Priorities and planning guidance for the NHS 1996–97.* Leeds: NHSE, 1995.
29. Williams S, Calnan M. Convergence and divergence: assessing criteria of consumer satisfaction. *Soc Sci Med* 1991; **33:** 707-716.
30. Carr-Hill RA. The measurement of patient satisfaction. *J Public Health Med* 1992; **14:** 236-249.
31. Baker R. *User questionnaires as tools for quality improvement.* Paper presented at quality in primary health care conference, 13 October 1993. London: Royal Society of Medicine forum on quality in health care, 1993.
32. Savage R, Armstrong D. Effect of general practitioner consulting style on patients' satisfaction: a controlled study. *BMJ* 1990; **301:** 968-970.
33. Al-Bashir MM, Armstrong D. Preferences of healthy and ill patients for style of general practitioner care: implications for workload and financial incentives under the new contract. *Br J Gen Pract* 1991; **41:** 6-8.
34. Morrell DC, Evans ME, Morris RW, Roland MO. The 'five minute' consultation: effect of time constraint on clinical content and patient satisfaction. *BMJ* 1986; **292:** 870-873.

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