

FACTORS INFLUENCING PATIENT SATISFACTION IN GENERAL PRACTICE

(Volume I)

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Ph. D. Thesis

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August 1994

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Acknowledgements

My sincere thanks to Dr. Frank Sullivan, my supervisor, for all his help, support and encouragement.

Thanks also to the other members of the Department of General Practice in Glasgow, whose discussions proved so valuable: Profs. Hamish Barber, Stuart Murray, Graham Watt, Drs. Stuart Wood, Moya Kelly, Philip Wilson, Tracy Ibbotson and especially Jillian Morrison.

I should like to thank Mr. Harper Gilmour for his advice in important areas of statistical analysis and presentation of some of the data.

I should also like to acknowledge the assistance of Dr. George Davy Smith in calculating the weighted mean of the correlation coefficient for the psychosocial study.

Thanks are also due to Dr. T. Siann and other members of the Audit Resource and Training Centre (Lanarkshire).

I should also like to acknowledge the help given by Mr. J. Charlton with the development and modification of the laptop computer application program for the audit study.

I also wish to thank the BMJ Publishing Group for allowing me to include the Nomogram illustration in the thesis.

I wish to express my sincere gratitude to the general practitioners and patients who participated in this study.

All the text, statistical analyses, tables and illustrations have been prepared by the author on an Apple Macintosh SE/30 and Personal Laser Writer, using Microsoft Word and Excel, SPSS, Statworks, and Minitab.

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SUMMARY

Patient satisfaction in general practice has recently emerged as an important research topic as a result of two recent changes in the provision of health care:

1. the increasing need to measure the quality of care;
2. a greater realization of the influence of psychosocial factors in a large proportion of patient problems in general practice.

Patient satisfaction in general practice is influenced by many factors. Some of these factors have a major impact, while others have a more indirect effect. In order to identify factors which influence patient satisfaction in general practice, the present investigation has developed three patient satisfaction studies, focusing on three important areas in general practice:

- detection of psychosocial problems;
- the presence of a computer in the consultation;
- audit.

Each of the studies has answered a number of specific questions:

The first study found that detection of psychosocial problems in patients attending general practice was associated with high patient satisfaction (mean scores 30.9, sd 4.9), compared with those who were considered as normal by their GPs (mean 29.2, sd 4.9); the difference was highly significant between these two groups ($p=0.0002$).

In the computer study no differences were found in overall satisfaction between baseline (mean 67.4, sd 8.6), six-week (mean 67.0, sd 9.3), and six-month follow-up (mean 65.7, sd 10.1). Regarding patients' attitudes to the presence of computer in the consultation room 22.6 % of patients considered it as a bad idea, but this fell to 14.4 % six weeks after, and 11.7% six months after its arrival.

The findings of the audit study indicate that patient satisfaction is a useful tool in general practice. The initial phase of data collection identified deficiencies in most surgeries. The common deficiencies found were in continuity and availability. Some surgeries made changes immediately. Others used the results to

obtain urgent extra resources. Some practices planned to make major changes before conducting this study and they have used the results to modify part of the changes already planned.

Findings of more general interest revealed by these investigations are:

1. The specific areas of health care of most significance to patients in determining overall levels of satisfaction are:
 - the doctor-patient relationship;
 - continuity of care;
 - availability of care;
 - staff-patient relationships.
2. Age and sex are important determinants of patient satisfaction. Older and male patients were more satisfied.
3. Specificity is an important aspect in patient satisfaction studies, in order to identify dissatisfied groups of patients. For example, elderly patients were less satisfied with access.
4. A specific dichotomy question can be used to identify dissatisfied groups of patients e.g. patients with negative attitudes to the presence of a computer in the consultation room were dissatisfied with professional care and depth of relationship.
5. Qualitative as well as quantitative data are needed for a complete overall assessment of patient satisfaction, and can be used by practices.

The true importance of the various factors influencing patient satisfaction will become apparent if steps can be taken to improve areas identified in this study.

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8. Sample size calculation Nomogram.
9. GPASS news letter.
10. Laptop application windows.
11. Feedback to practices first phase audit study.
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Key to Abbreviations

GP: General Practitioner.

SSQ: Surgery Satisfaction Questionnaire.

CSQ: Consultation Satisfaction Questionnaire.

GHQ-28: General Health Questionnaire -28.

GPRQ: General Practitioner Rating Questionnaire.

VAS: Visual Analogue Scale.

MISS: Medical Interview Satisfaction Scale.

CES-D: Centre for Epidemiological Studies-Depression..

Chapter 1: Factors influencing patient satisfaction

Summary

This chapter reviews the literature on patient satisfaction. First of all, definitions are considered. This is followed by consideration of the main features required for the instruments used in the measurement of patient satisfaction in terms of:

- scaling methods,
- variability of scores,
- reliability,
- validity.

Finally the findings of earlier studies are reviewed. It is concluded that patient satisfaction is sufficiently discriminating, practicable, reliable, and valid to be used as one measure of the outcome of care.

1.1. Definition of patient satisfaction.

The definition of patient satisfaction is a complex concept since it is influenced by many factors. In general these are factors related to the patient's illness, past experience, future expectation, lifestyle, the values of both individual and society, and also the quality of care provided. It can also be looked at in term of aspects such as expectation, beliefs, attitudes, evaluation, entitlement, reports (Ware et al 1983), and requests (Like and Zyzanski 1987).

In an attempt to define patient satisfaction and to identify its determinants, Linder-Pelz (1982) used attitude and job-satisfaction theories to construct a value-expectancy model of satisfaction. Patient satisfaction is characterized as a positive

attitude which is related to both the patient's belief that the care received possesses certain attributes (dimensions of health care) and his/her evaluation of those attributes.

Pascoe (1983) used consumer satisfaction models to define the concept. He defined patient satisfaction as a health care recipient's reaction to salient aspects of the structure, process, and outcome of care.

Patients evaluate services according to their expectation and beliefs, with different patients having different expectations and beliefs. To satisfy patients there is a need to fulfil their expectations according to their individual beliefs. The operational definition of patient satisfaction used in these studies is "the fulfilment of patients' expectations according to their own beliefs."

1.2. Dimensions of satisfaction

The number of dimensions used to assess patient satisfaction are limited. The following are the most frequently used in the available measures (Ware et al 1978, Pascoe 1993, Cleary and McNeil 1988, Baker 1991 a, Williams and Calnan 1991 a, Wensing et al 1994):

- **the doctor-patient relationship:** This is the degree of caring shown toward patients, i.e. concern, consideration, friendliness, patience, and sincerity.

- **technical quality of care:** This is the provider's conduct, focusing on the competence of the provider and his/her adherence to high standards of diagnosis and treatment.
- **accessibility:** This is the location, time needed and difficulty encountered in reaching the source of care.
- **availability:** This includes access to care through the telephone, the number of days patients must wait for an appointment, and the doctor's readiness to provide the necessary care at any time.
- **continuity:** This is the regularity of care from the same provider.
- **efficacy/outcome of care:** This is measured in terms of perceptions regarding the usefulness of the medical care provided and the specific treatment regimens in improving or maintaining health status.
- **physical setting:** This includes the general pleasantness of the atmosphere, the comfort of the setting, the attractiveness of waiting rooms, quietness, and cleanliness.
- **finances:** This is the cost aspect of the care provided.

1.3. Measures of patient satisfaction

Different methods have been used to obtain accurate and meaningful measurements of patient satisfaction, but broadly,

two main methods for investigating patients' opinions are used in research in general practice: qualitative methods and quantitative methods. Qualitative methods, such as interviews, are used to identify the important problems for the patient and to suggest appropriate interventions. Quantitative methods, such as questionnaires, are used to compare services, or to monitor a service over time.

The questionnaire has proved to be of greatest value in evaluating different areas of practice, including organization, consultation, and outcome (Hughes and Humphrey 1990). The quality of the results provided by a questionnaire can be interpreted according to the research criteria and the quality of the statistical tests used (Baker 1991 b).

1.3.1. Approaches to measurement of satisfaction

There are two approaches to assessing satisfaction: the indirect approach, which includes items referring to health care providers in general, and the direct approach which includes items specifically referring to the patient's care. Direct measures assess satisfaction with services actually received whereas indirect measures assess satisfaction with the medical enterprise and providers at a collective level. The direct measures have shown significant differences between patients in comparison with indirect measures. Pascoe and Attkisson (1983) compared a specific and a global measure and concluded that the specific measure provided more information, was more discriminating, and resulted in significant lower satisfaction scores.

In practice, Cartwright and Anderson (1981) found that 90% of their sample were highly satisfied in general with the care that they received from their GP. However, when patients were asked more specifically about their GP, it was found that 30% were dissatisfied with the waiting room and 23% with the level of inadequacy of information provided.

WilliamS and Calnan (1991 b) found that 95% of patients were highly satisfied in general. More detailed and specific questions nevertheless revealed a greater level of dissatisfaction regarding personal problem discussion (38%), the level of information received (26%), and the length of time spent in the consultation (25%). In an in-depth study, Fitzpatrick and Hopkins (1983) found that a minority (25%) of patients were seriously unhappy with their clinic visit. Schofield et al (1991) found that women with severe pre-operative symptoms were more satisfied with their hysterectomy than those with less severe symptoms.

A review of general practice and hospital studies by Locker and Dunt (1978) found that specific and direct questions elicit dissatisfaction even among highly satisfied patients. These findings were also supported by Williams and Calnan (1991 a), Hopton et al (1993), as well as Carstairs (1970), who found that even very satisfied patients criticized certain areas when asked specifically . This supports the concept of using a specific approach to identify dissatisfied patients. The reason is that patients have similar opinions about most aspects of care, and only when they are asked about a specific area do they show dissatisfaction. However, a contrary picture has been detected by other researchers (Hall and Dornan 1988a, Ware et al 1983). One possible reason behind their findings could be that; when

considering overall satisfaction scores, dissatisfied patients were diluted by a highly satisfied majority.

Hopkins (1990) concluded that the most appropriate studies in patient satisfaction are those in which a particular topic is studied for a particular group of patients regarding a particular service. Measuring a specific dimension may provide important information regarding quality of care (Cleary and McNeil 1988).

Zastowny et al (1983) suggested the development of specific models to link satisfaction to various health and illness behaviours. Ware and Hays (1988) suggested on the basis of their study results that asking about specific aspects of a visit before asking patients to evaluate it will reduce the skewness of satisfaction ratings.

1.3.2. Characteristics of a good measure

In order to obtain sufficient and accurate information the measurement used should at least conform to basic methodological criteria. Validity, reliability and, most importantly, responsiveness to change ("capable of identifying small but clinically significant changes") are considered as the three standard requirements (Long et al 1993). The questionnaire should be:

1. brief,
2. understandable,
3. easy to complete,
4. self-administered,
5. cheap,
6. easy to use in different settings.

The questionnaire should be able to cope with all possible responses (Stone 1993). Collateral questions about behaviour that might indicate dissatisfaction (Donabedian 1992) need to be included. The following discussion will consider how the characteristics of satisfaction questionnaires conform to those of a good questionnaire.

1.3.2.1. Scaling methods

A wide variety of scale techniques have been used to construct measures of patient satisfaction. A response scale with only two or three choices has been judged to be too coarse (Fitzpatrick 1991 b, Pascoe 1983), insensitive (Locker and Dunt 1978, Pendleton 1983), restricting reliability, and reducing the correlation coefficient (Pascoe 1983). A Likert 5-point scale yielded more information and more reliable responses than two or three choices (Mangelsdorff 1979).

1.3.2.2. Variability of scores

The assumption is that satisfaction itself is a continuum, and that the responses should place people as precisely as possible along that continuum, in terms of their attitudes toward services and providers. The better each item performs in this regard, the fewer the items required per scale.

A good instrument will produce scores which are spread across the full range and which approximate to a normal distribution, for the following reasons:

1. Many statistical techniques are based on the assumption that scores are normally distributed.

2. The scores permit the measurement of improvement in subjects who have already achieved close to the scale maximum or minimum.

If the distribution is too heavily concentrated around the mean in a normally distributed scale, this indicates that many of the scale items are redundant.

One of the most common problems in measures of patient satisfaction is that scores tend to be skewed to the positive end of the scale (Pascoe 1983, Locker and Dunt 1978, Fitzpatrick 1991 a). However, such a skewed distribution may in fact reflect the true nature of patient satisfaction (Zastowny and Roghmann 1983).

1.3.2.3. Reliability

Reliability is concerned with the extent to which a questionnaire produces the same results on separate occasions of use.

There are two main ways of assessing reliability:

1. *Split half* : This is a measure of internal consistency (Cronbach's alpha). After the test has been taken, subjects' performance on one half of the test is correlated with their performance on the other half.
2. *Test-retest reliability* : Subjects take the test twice and if the test is reliable the two scores should be highly correlated. The period between test and retest should be few a weeks.

The reliability levels in patient satisfaction measures can be evaluated according to the stage of instrument development and

the intended use of the measure. Nunnally (1967) states that in the early phase of research on hypothesized measures of a construct, a modest reliability of 0.6 or 0.5 is sufficient. If a measure is to compare groups, a reliability of 0.5 is considered acceptable, and a minimum reliability level of 0.9 is recommended to compare individuals (Helmstadter 1964). The evidence with regard to individual measures is extremely variable (Wilkin et al 1992). Pascoe (1983) concluded that the available measures are reliable enough for making group comparisons but not suitable for comparing individuals.

1.3.2.4. Validity

Validity is more difficult to examine, since validity in a questionnaire is the requirement for it to measure what it claims to measure. If the measure is not a reliable one then this must reduce its validity. On the other hand, high reliability does not ensure high validity.

Methods of testing validity

1. *Content (face) validity* : The easiest way to discover whether a test is valid is to examine it and decide whether it looks as though it is.
2. *Construct validity* : One can compare test results with what would be expected as a result of common sense or academic theory. The researcher postulates the types and degrees of association between the scale and other variables and then examines these associations to see whether they confirm his

or her expectations. The results of this examination will lead to increased (or decreased) confidence in the scale.

3. *Criterion validity:* The traditional definition of criterion validity is the correlation of a scale with some other measure of the trait or variable under study, ideally, a 'gold standard' which has been used and accepted in the field.

It has been emphasized that patient satisfaction measures need to demonstrate external validity as well as internal validity (Davis and Ware 1981; Ware et al 1978; Ware and Synder 1975).

External criteria

This is "the extent to which patient opinions accurately reflect care given" (Lebow 1974).

External criteria include:

1. the reflection of actual qualitative differences in the, structure, process, and outcome of care;
2. accurately predicting subsequent health-related behaviour such as compliance, utilization, and patient selection of provider services.

Internal validation

Without careful internal validation it is difficult to establish appropriate measures of different domains and dimensions of satisfaction.

Threats to validity

Possible validity problems in measuring patient satisfaction involve:

1. the content and format of the instrument used,
2. sampling difficulties,
3. the ability of patients to judge.

Each of these is examined in the following pages.

Content and format of the instrument used. The measure may not contain the full range of dimensions that could influence a patient's evaluation. The wording of items might attract an acquiescent response set (ARS), a tendency to agree with statements of opinion regardless of content. As mentioned previously, the type of scale used has a potential effect on validity. There is no evidence to show at what point satisfaction stops and dissatisfaction begins. Davies and Ware (1981) have noted that satisfaction scores only rank respondents rather than allowing concrete distinctions to be made between satisfied and dissatisfied patients.

Studies either have not stated how a line drawn between satisfaction and dissatisfaction or an arbitrary cut-off point have been used (Hall and Dornan 1988a).

Sampling differences. This has an effect on the validity of patient satisfaction results. New patients or an early sample may have shorter periods of time or even none in contact with the area needing to be measured. By contrast, if the time between contact and study is long, patients may not be able to recall

events sufficiently or else the dissatisfied patients may have left the area or the practice. Bias can be introduced by self-selection of patients who participate in studies related to patient satisfaction. Furthermore, differential responding could effect the response rate, i.e. less satisfied patients might express their dissatisfaction by declining to participate in the study.

Patients' judgement. It has been suggested that patients' accuracy of information can be limited to certain areas, such as interpersonal exchanges. A dilemma exists regarding judgement of technical skills. Donabedian (1992) believed that there is a mutual reinforcement between the depth of relationship and technical skills. Satisfaction with the depth of the relationship is reflected in the judgement of technical skills. It has been argued that a patient can judge some of the services after a period of continuous and prolonged contact with providers (Calnan 1988); this is true for patients with chronic disease. It has also been argued that certain areas related to evaluation of medical care, such as medical procedures and GP competence, were rarely included in patient satisfaction studies for the reason that patients are not considered competent to evaluate these areas. However, it has recently been shown that patients do have the ability to evaluate medical procedures and the ability of their doctor (Calnan 1988, Hall and Dornan 1988a).

1.4. Factors influencing high satisfaction scores

High satisfaction scores may be partly due to:

1. measurement issues:

- the lack of a known cut-off between satisfaction and dissatisfaction;
 - acquiescent response set;
 - instruments that do not include dimensions responsible for dissatisfaction;
 - instruments that have items with inappropriate referents, or manifest other shortcomings, and are not sensitive to the range of satisfaction that patients experience.
2. the halo effect: "Respondents classify the object on each scale according to their general impression, rather than according to the scale's meaning" (Moser and Kalton 1979).
 3. patients are reluctant to criticize their doctor.
 4. dissatisfied patients are not sampled either because they cease to participate in the study, are reluctant to provide data, or provide incorrect data.

1.5. Satisfaction and patient characteristics

Sociodemographic characteristics. are the most often studied in relation to satisfaction, yet they are the least well understood.

Those looked at by many researchers are age, sex, ethnicity, socioeconomic status, marital status, and family size.

Results in this area are inconsistent and sometimes contradictory (Lochman 1983; Hall and Dornan 1990). Hall and Dornan (1990) found in their review that older, less educated, higher social status, and married patients were more satisfied, with age being the strongest correlate of satisfaction.

Health status. Change in patient health status is considered as an outcome of medical care. In order to identify a difference in

health status it is important to know patients' health status prior to receiving care.

Lochman (1983) found that patients with few symptoms were more satisfied if physicians paid more attention to their problems. The correlation was not significant for those with chronic disease. These findings were inconsistent with other findings (DiMatteo and Hays 1980, Greenley and Schoenherr 1981). With regard to psychological health, Greenley et al (1982) found that patients who did not discuss their problems with their doctor and those who denied having such a problem were less satisfied. May (1992) found no relationship between detection of psychosocial problems and patient satisfaction.

In reviewing studies concerned with this aspect (Cleary and McNeil 1988) it has been found that the majority:

1. used a different measure,
2. lacked a clear conceptual or theoretical framework,
3. did not use multivariate techniques.

1.6. Uses of satisfaction data

The major uses of patient satisfaction data can be grouped into five categories, namely evaluation, prediction, discrimination, to compare services, or to monitor a service over time.

1.6.1. Evaluation of health care service(s)

Satisfaction has been used as a dependent variable to evaluate different aspects of medical services. These include the structure, process, and outcome of care.

Structure

This includes the practice premises and facilities, ease of access, aspects related to registration with the practice and its accessibility in terms of availability, and continuity of care.

Premises. This involves what the premises look like, and how patients compare them with others known to them. Smith and Armstrong (1989) found that patients gave a low priority to well- decorated and convenient premises. However, Curtis (1987) found that 30% of patients from inner city areas and 20% of outer city patients identified this as an area for improvement.

Access. Few studies looked at ease of access to the surgery. Very probably it was of less importance from the point of view of most researchers or else it was included with other dimensions. Williams and Calnan (1991 a) found that 15% of older people felt that the premises were too far away compared with 5% of younger people. 7% of study patients (Curtis 1987) found some difficulty in travelling to the surgery. Some of those patients related a failure to register with a general practitioner to this problem.

Accessibility. Research indicates that satisfaction is positively related to accessibility (Hopton et al 1993, Curtis 1987, Pascoe 1983). Nevertheless, although some studies have found that accessibility is an important factor related to satisfaction (Gray 1980), others have found it less important than the patient-doctor relationship (Lochman 1983).

Continuity. Several studies have found that having a regular GP is positively related to satisfaction with care (Smith and Armstrong 1989, Curtis 1987, Pascoe 1983, Lochman 1983). Weiss and Ramsey (1989) found that continuity remained a key

predictor of satisfaction after controlling for patient background characteristics. Continuity can be maintained in group practices. However, it has been found that a high proportion of patients were satisfied with the deputizing service they received (Dixon and Williams 1988).

Process

Effective communication in the consultation is a critical component of medical care. It is measured in terms of the extent to which the patient feels that the doctor listens, understands, and is interested (affective); the amount and quality of information provided (cognitive); and the doctor's competence in the consultation (behavioural). It has been found that satisfaction is related to: the doctor listening and giving more information; the GP's medical and personal skills, type of personality, rapport, sympathy and demeanour; unhurried manner; willingness to spend more time explaining the condition, more social conversation, more positive talk, less negative talk, and more immediate and positive nonverbal behaviour (Hopton et al 1993, Williams and Calnan 1991 a, Smith and Armstrong 1989, Hall et al 1988 c, Curtis 1987, Pascoe 1983, Lochman 1983). Rashid et al (1989) found that patients were more satisfied than doctors with the consultation and that they disagreed on some of the consultation items.

Outcome

Outcome measures can be classified in terms of survival, health status, and patient satisfaction. Few studies have examined the

relationship between health status and patient satisfaction (Cleary and McNeil 1988).

1.6.2. Prediction of patient behaviour

It has been shown that satisfied patients use the services more frequently than less satisfied patients (Ware et al 1978, Pascoe 1983), and change to another care provider if not satisfied (Baker and Whitfield 1992, Weiss 1988, Korsch et al 1968, Bartlett et al 1984, Kinney et al 1975, Ware et al 1978).

1.6.3. Discrimination between individuals or groups

This is required to identify the level of satisfaction and areas of need for different groups of patients. Thus, it has been shown that elderly patients are less satisfied with access (Williams and Calnan 1991 a). Hopton et al (1993) found that patients feeling pain and those with emotional distress were dissatisfied with different aspects of the consultation.

1.6.4. Comparison and monitoring of service(s) over time.

Little work has been done regarding this area. A quality assurance project in Bloomsbury has been running for years, using patient satisfaction to compare two services, monitor them over time, and indicate changes to be made if the index falls below a previously agreed standard (Green 1988).

In order to identify factors which influence patient satisfaction in general practice, the present study has developed three patient

satisfaction studies, focusing on three important areas in general practice:

1. patient satisfaction as affected by the detection of psychosocial problems;
2. the reaction of patients to the presence of a computer in the consultation;
3. an audit of surgery satisfaction.

Chapter 2: Measurement instruments used in studies

Summary

Despite the low level of development of primary health care research, many instruments for research purposes are now available. This reflects the need for review and evaluation of such instruments before selecting a measure for a particular purpose; in order to obtain accurate information.

In this investigation four instruments were selected, which measure aspects of patient satisfaction and mental health status. This selection was made on the basis of methodological criteria, accuracy of the instrument, and applicability to primary health care. Two of these instruments (CSQ and SSQ) have been recently developed using psychometric methods. The GHQ is a widely used measure. The final instrument (GPRQ) was developed for use in the study.

In this chapter the background and development of these measures are described. The method of scoring and scaling is summarised. The available evidence on reliability and validity is reviewed, and practicability discussed.

2.1. Consultation satisfaction questionnaire (Table 1, Appendix 1)

2.1.1. Origin and purpose

The consultation satisfaction questionnaire (CSQ) was developed by R. Baker (1990 a) as part of a quality assurance project with an aim of assessing patient satisfaction within general practice. The questionnaire was designed using the methods of educational and psychological tests. The development of the questionnaire went through three stages: question selection, refinement, and tests for its reliability and validity. The following review summarises the development stages.

2.1.2. Initial question selection

The initial work was performed in one suburban practice of 12,000. It started by identifying all areas which patients may consider in their evaluation of consultations. This process was performed by an initial literature review, and then seeking the opinions of general practitioners and patients. This stage ended with a list of statements.

A five-point Likert type scale asking for agreement or disagreement was chosen for the questions. Some questions were included twice, but reworded slightly and the statements reversed to overcome the effect of acquiescent response set as well as improving reliability and sensitivity.

2.1.3. Refinement of the questionnaire

Several methods were used to select and evaluate the statements to ensure clarity and acceptability of questionnaire items, and the variability of answers.

In the field test of version six, 239 from 328 completed forms by patients were obtained, a response rate of 75%.

Principle component analysis was used to identify the components or factors that determine satisfaction. Principal components analysis revealed three factors, and names were assigned to these factors as follows:

1. **professional care**, contains seven items which cover the patient's concerns about examination, the amount of information provided about illness and treatment and their being treated as a person.
2. **depth of relationship with doctor**, contains five items which cover knowledge of the patient and the conveying of personal information.
3. **perceived time of consultation**, contains three items which cover the patient's perception of adequacy of time provided according to their own requirements.

Questions concerning **general satisfaction** failed to form a separate factor on principal components analysis of the questionnaire, so these questions were used as a separate factor.

2.1.4. Variability of scores

The mean scores for the statements used for factors two and three are reasonably close to but do not exceed 3, the mid-point in the scale. The statements for care and general satisfaction were more likely to have a mean score towards the satisfied end

of the scale. The coefficients of variation for each item indicate the variability of opinions.

2.1.5. Reliability

Reliability was tested for internal consistency using Cronbach's alpha. For the complete questionnaire it was 0.91; for professional care it was 0.87; for depth of relationship 0.83; for perceived time 0.82; and for general satisfaction 0.67. Recent analysis of reliability for CSQ showed a high correlation (i.e. for professional care it was 0.93; for depth of relationship 0.88; for perceived time 0.87; and for general satisfaction 0.82) (Baker and Whitfield 1992). These results indicate that the questionnaire is sufficiently reliable to discriminate between groups of patients rather than between individual patients.

2.1.6. Validity

Content (face) validity: this means that the instrument includes all questions related to the area which it is intended to measure. The CSQ contains all aspects of the consultation which are important to the patients. The factors identified by the questionnaire were the same as those found in other studies (Ware and Hayes 1988, Wolf et al 1978, Zyzanski et al 1974, Morrell et al 1986).

Criterion validity: has not been addressed.

Construct validity: Spearman correlation coefficients for each factor with the general satisfaction scale were 0.64 for professional care and 0.50 for both depth of relationship and

perceived time, indicating that each factor is related to, but not identical with general satisfaction, which gives support to construct validity. Most recently, more work has been done to test the construct validity for CSQ. By looking at two groups of patients, those who changed to different doctors without changing their home address were considered to be less satisfied compared with patients who stayed with a doctor for at least two years. It has been shown that this is true for CSQ. (Baker and Whitfield 1992).

2.1.7. Practicability

The CSQ is designed to be a self-administered questionnaire, and it can be used for postal surveys. It takes between five to seven minutes to complete. The content of CSQ items appears to be acceptable to most respondents. It does not need to be administered immediately following a consultation (Baker and Whitfield 1992).

2.1.8. Short version of CSQ (Table 1, Appendix 2)

Eight items were selected from the CSQ in the psychosocial study for two reasons:

1. to reduce time needed to complete the questionnaires (CSQ and GHQ-28).
2. to include items essential for patients with psychosocial problems.

The short version contains two items from a professional care subscale, all five items representing a depth of relationship subscale, as this was the main area of interest in this study, and one item from a perceived time subscale.

It is well-known that shortening a questionnaire reduces its reliability. By testing the CSQ short version using the Cronbach reliability test, the alpha value (0.8) was above the value where the reliability was considered good.

The consultation length is considered a crucial factor in detecting a psychosocial problem in many studies. In the psychosocial study the time subscale was represented by one question only. This might have affected the findings regarding this dimension of the consultation. Also, it has been confirmed that an individual questionnaire item is not a very satisfactory unit of analysis for a study of patient attitudes and medical care services (Ware et al 1983, Counte 1979). As a result of shortening the CSQ, it has been decided to use the overall CSQ scores in most analyses, in order to obtain reliable results.

2.2. Surgery satisfaction questionnaires (Table 1, Appendix 3)

2.2.1. Origin and purpose

Like the CSQ, the surgery satisfaction questionnaire (SSQ) was developed by Baker (1991 a) as part of the quality assurance project. The SSQ was subjected to a test of concurrent criterion validity and the aim was to develop methods that might be more widely applied for establishing the validity of patient satisfaction as a measure of the quality of care.

2.2.2. Initial question selection

Similar methods have been used for initial question selection to those for the CSQ. The field tests were undertaken in eight

different surgeries in the South-West of England. In each surgery 100 questionnaires were distributed to consecutive adult attenders.

2.2.3. Refinement of the questionnaire

The overall response rate to the SSQ was 92% in early studies. Similar methods have been used for refinement of the questionnaire to those for the CSQ.

Five components of satisfaction emerged concerned with continuity of care, accessibility of the surgery, the quality of medical care, the premises, and the availability of doctors.

The questions for general satisfaction failed to form a distinct component on their own, a common finding in satisfaction questionnaires. The rotated factor matrix for SSQ with the two general satisfaction questions excluded shows the above five components.

2.2.4. Variability of scores

The coefficients of variation of scores for each question range from 30% to 50%, which does confirm a reasonable degree of variability in response.

2.2.5. Reliability

The reliability of this questionnaire and its components was determined using Cronbach's alpha. Alpha for the entire questionnaire was 0.82, for general satisfaction 0.67, for continuity 0.88, for access 0.78, for medical care 0.70, for premises 0.69 and for availability 0.51.

2.2.6. Validity

Content (face) validity: face validity can be tested by comparing the SSQ with other surveys of patient satisfaction. It confirms that there have been no significant omissions of components or questions on topics that influence satisfaction (Ware et al 1983, Hulka et al 1970).

The results of Spearman correlation coefficients show that the correlation for continuity 0.43, for access 0.22, for medical care 0.56, for premises 0.27 and for availability 0.41. The components are therefore related to, but not identical with, general satisfaction.

Criterion validity: this was done on the final version of the questionnaire. Two criteria were chosen to compare with the findings: the views of the doctors about the surgery, and the views of a general practitioner external assessor of the surgery. One member of each participating surgery was requested to indicate a self-assessed score. An external assessor made a short surgery visit and made an assessment on a similar five-point scale. Two assessors were used. Both had extensive experience of practice assessment. The findings supported the validity of the components of continuity, accessibility, availability and premises.

There is some evidence that the SSQ is valid, although its reliability is moderate.

Construct validity: most recently, Baker and Whitfield (1992) have shown that the SSQ possesses construct validity by predicting that patients who changed to different doctors without changing their home address were less satisfied compared with patients who stayed with a doctor for at least two years. Nine questions were added to SSQ to improve its reliability.

2.2.7. Practicability

The SSQ is designed to be a self-administered questionnaire, and it can be used for postal surveys. It takes between five to seven minutes to complete. It can be administered at any time. It does require that the patients have sufficient knowledge of the surgery to form a judgement.

2.3. General health questionnaire (Table 1, Appendix 4)

2.3.1. Origin and purpose

The GHQ was developed by Professor D. Goldberg with the aim of detecting non-psychotic psychiatric disorders in a community setting. It measures two phenomena:

1. inability to carry out one's normal 'healthy' function;
2. the appearance of new phenomena of a distressing nature (Goldberg and Hillier 1979).

The GHQ 60 (long version) was first developed in London (Goldberg 1972). Lately short versions of the GHQ (GHQ 30, GHQ 28, GHQ 20, GHQ 12) have been constructed from the long version. The GHQ 28 was developed in Manchester.

the GHQ only detects disorders of less than two weeks' duration. It is sensitive to very transient disorders, which may remit without treatment. The GHQ does not make clinical diagnoses i.e. it is a screening instrument.

2.3.2. Initial question selection

The items of the GHQ have been chosen to detect cases which lie in the hinterland between normal and severe disturbance.

Items were extracted from work done by Veroff, Feld and Guri in the USA in 1962. In addition, ideas for items were obtained from

1. Taylor's Manifest Anxiety Scale
2. Eysenck's Personality Inventory
3. Minnesota Multiphasic Personality Inventory.

2.3.3. Refinement of the questionnaire

The scaled GHQ-28 was developed by using factor analytic methods. An unrotated principle axes analysis was done on 523

questionnaires completed by consecutive attenders in general practice using GHQ 60. In trying to have severe depression distinct from the anxiety scale on the least number of dimensions, a four-factors solution was obtained which represented 48% of the total variance. The seven items with the highest loads on each scale were chosen for the 'scaled GHQ'.

When the analysis was repeated using only 28 chosen items, the first four factors were found to account for 59% of the total variance. Principle component analysis was repeated for the GHQ-28 version in two studies and the same results were obtained. The four factors were labelled:

- somatic symptoms;
- anxiety and insomnia;
- social dysfunction;
- severe depression.

Each subscale contains seven items, each question asking about a particular symptom or item of behaviour experienced by the patient recently. A four-point score was used ranging from 'less than usual' to 'much more than usual', in order to avoid a tendency to tick the middle category.

2.3.4. Methods of scoring the questionnaire:

Three types of scoring been suggested by the authors:

1. GHQ method (0-0-1-1)

- for case identification;
- it eliminates the end-users i.e. respondents who will consistently score at the very lowest or highest point for each item (Goldberg and Hiller 1979).

2. Likert method (0-1-2-3)

- if the subscales scores are required;
- it produce a less skewed distribution of total scores.

3. CGHQ (-ve items 0-1-1-1, +ve items 0-0-1-1)

- it produces an even less skewed distribution;
- it also increases the sensitivity of the questionnaire;

In the psychosocial study the GHQ-28 was scored by using the GHQ scoring method, to allow case identification.

2.3.5. Reliability

Robinson and Price (1982) administered the GHQ-28 to 103 patients who had strokes some eight months apart: the test-retest correlation was as +0.90.

2.3.6. Validity

Correlation's between the GHQ and criterion interview score:

Many studies have been done to measure the ability of the GHQ to measure the severity of psychiatric disturbance. Results summarised by Goldberg and Williams (1988) show that the median correlation between the GHQ-28 and the criterion interview was 0.76.

Validity Coefficients

The GHQ and a criterion interview are administered to a set of respondents to assess psychiatric caseness. They can then be allocated to one of four groups according to the two assessments

(that is, the questionnaire score dichotomised at a cut-off point, or threshold score, and a criterion interview); see table below.

a false positive	b true positive
c true negative	d false negative

1. Those in cell **(a)** are the "**false positives**" (normal subjects wrongly identified as cases by the questionnaire).
2. Those in cell **(b)** are "**true positives**" (correctly identified by the questionnaire).
3. Those in cell **(c)** are normal subjects correctly identified as such by the questionnaire (the "**true negative**").
4. Those in cell **(d)** are "**false negative**" (true cases who are not identified as such by the questionnaire).

Sensitivity: the **sensitivity** is the probability that a "true case" will be correctly identified ($b/b+d$). An index of the extent to which 'true morbidity' will be identified by the questionnaire.

Specificity: the **specificity** is the probability that a "true normal" will be correctly identified ($c/a+c$), and it is independent of prevalence.

Probable prevalence: probable prevalence of psychiatric illness represents the proportion of patients who obtain a higher score

on the GHQ after a correction term has been applied. The correction term is given by the formula:

$$\text{Probable prevalence} = \frac{\text{HP-fp}}{\text{s-fp}}$$

Where:

HP = % with high scores; fp = false positive rate = 1 - specificity;
s = sensitivity.

Sensitivity and specificity for the GHQ-28

Goldberg and Williams (1988) summarised a technique developed to account for different median values for different studies. The specificity and sensitivity for the GHQ-28 using this technique were 84% and 82% respectively. It has been concluded that GHQ-28 out-performs GHQ-30 with regard to sensitivity. GHQ-12, GHQ-28, and GHQ-30 have very similar specificity.

On the basis of conducting a one-stage research design in the same culture and clinical setting, there is no need to perform a validity study (Goldberg and Hillier 1979).

Deciding upon the best threshold score:

The best threshold score is that which gives the best trade-off between sensitivity and specificity. Many validity studies have been carried out using the GHQ. The one using GHQ-28 shows a very wide range of thresholds. In the primary care setting it has been found that a threshold score of 4/5 gives slightly better overall results than 5/6 (Goldberg and Hillier 1979). A cut-off point of 8/9 has been used in the psychosocial study, since it has been shown more recently to represent an optimal trade-off

between sensitivity and specificity in a Scottish general practice population (Wright and Perini 1987). At this cut-off score in the general practice setting, the questionnaire has a sensitivity of 66.1% and a specificity of 88.5%. Scores below 9 were considered as normal and those equal to or above 9 considered as cases.

Physical illness is a factor which has a consistent effect in producing a high threshold. A high threshold is needed with medical in-patients, as many have somatic symptoms and social dysfunction which are caused by their physical illness. In these cases, to obtain a high discrimination between the results for cases and non-cases, the threshold must be raised.

2.3.7. Uses

The GHQ can be used:

1. to estimate the prevalence of illness in a particular population;
2. in the detection of cases with hidden psychiatric illness;
3. to compare the amount of psychiatric disturbance in two populations;
4. to detect any change in psychiatric disturbance for the same patients at two different intervals.

The GHQ-28 can be used if a scaled symptom profile is required.

Advantages

The GHQ possesses slight advantages compared with other questionnaires, as a result of its carefully selected items and its unusual form of response scale. Since it is very widely used, the

results can be compared with others already published, e.g. Wright and Perini (1987), Boardman (1987).

Disadvantages

- The GHQ does not measure long-standing attributes of the respondents. It is a pure state measure.

Limitations

- The GHQ-28 was chosen so that the depression and anxiety scales could be used separately for analysis with the GP's anxiety and depression scales. It was discovered later that the GHQ-28 sub-scales could not be used separately. The three reasons behind this are that the subscales represent dimensions of symptomatology and do not necessarily correspond to psychiatric diagnosis, and sub-scales are not independent of each other. The GHQ allows the investigation of the four dimensions measured, but of itself says nothing about the factor structure of that sample (Goldberg and Williams 1988). Even if it were possible to use the subscales' scores separately, there is no available cut-off point for each subscale. To overcome part of this problem, analysis has been done by using GHQ overall scores with GP's anxiety and depression assessment, by considering the GHQ as a case criterion.
- In most of the studies the GHQ was completed by patients before the consultation. In this study, since there is a need for patients to complete the CSQ after the consultation and in order to avoid patient confusion, patients were told to complete both questionnaires after the consultation. The

psychosocial problem information provided by the patient after the consultation (GHQ scores) may have been influenced by the content of the consultation.

2.3.8. Practicability

GHQs are self-administered and take from two minutes for the 12-item version to ten minutes for the 60-item version to complete. The 28-item version took an average of five minutes to complete . It is easily administered, well-accepted by patients, and achieves a very high response rate.

2.4. Visual analogue scales (VASs)

Visual analogue scales have been used widely and effectively in psychological medicine as clinical and research tools. They are considered as one of the methods which can be used to measure subjective phenomena. They are self-reporting devices consisting of a line of predetermined length that separates extreme boundaries of the phenomenon being measured. The subjects are asked to respond by placing a tick mark on the line which indicates the strength of the feelings. The VAS is scored by measuring the distance from one end to the subjective mark, or by placing a template over the line and categorising the response. The result is an objective representation of a previously subjective and unquantified phenomenon. The objective scores can then be evaluated by statistical tests.

2.4.1. Reliability

Test re-test, inter-rater, and internal reliability of VASs have been reported in a number of studies, with the approval of its high reliability (McCormack et al 1988, Miller et al 1993).

2.4.2. Validity

Validity in general can be determined by measuring the same event using different measures. The relation between VASs and several mood scales have been determined, which shows that VASs possess high validity in most circumstances (McCormack et al 1988, Miller et al 1993). VASs have been shown to be sensitive and accurate (McCormack et al 1988).

2.4.3. Uses

VASs are used mostly for self-assessment; however, a significant level of inter-rater reliability have been reported by several studies when VASs have been used for observer rating (McCormack et al 1988).

2.4.4. Practicability

They possess the following advantages:

1. simple and quick to construct;
2. quick and easy to administer and score;
3. suitable for frequent and repeated use;
4. easily understood by subjects;
5. very sensitive with a discriminating capacity superior to other scales;
6. suitable for use by untrained staff;
7. allow the use of numerical values suitable for statistical analysis.

2.4.5 General practitioner rating questionnaire (GPRQ) (Table 1, Appendix 5)

The general practitioner rating questionnaire used in the psychosocial study asked for patient initials (for the purpose of identifying the same patient's questionnaires), date of birth, and the three other questions in visual analogue form (50 mm in length), allowing the general practitioner to assess patients' anxiety, depression and overall impression of psychological condition by placing a mark anywhere on a line anchored at both ends, to be filled in by him for each patient.

Reliability of the GPRQ

The reliability has been tested using the internal consistency (Cronbach's alpha). For the psychological scale it was 0.66, for the anxiety scale it was 0.75, and for the depression scale it was 0.90. These results indicate that the GPRQ is sufficiently reliable, and that anxiety and depression constitute the bulk of all cases diagnosed with psychosocial problems in general practice. These findings are similar to those of other studies (Goldberg and Huxley 1980).

Validity of the GPRQ

The concurrent validity of the GPRQ was determined by correlating the scores with the GHQ-28 scores. The general practitioner rating scores for psychological problems correlated well with the GHQ-28 total scores ($r=0.38$, $p=0.0001$); the GPRQ anxiety scale correlated well with the GHQ-28 anxiety subscale scores ($r=0.31$, $p=0.0001$); and the GPRQ depression scale correlated well with the GHQ-28 depression subscale scores ($r=0.36$, $p=0.0001$). There is some evidence that the GPRQ is valid and reliable.

There was variation between GPs regarding the correlation between their assessment and the GHQ scores, which is similar to the findings of the Manchester study (Goldberg and Huxley 1980).

GPRQ cut-off point

As it has been shown that psychosocial problems represent nearly 25% of GPs attenders (Wright and Perini (1987), and as there was marked variation in GP rating strategies, high GPRQ

scores were defined as those within the upper quartile of the GPRQ scores.

2.5. Modification of computer study questionnaire

The principal pilot study instrument used was a short version of the Medical Interview Satisfaction Scale (MISS) (Appendix 6), which measures the cognitive, behavioural and affective content of the consultation.

It was decided to use the CSQ instead of the MISS for two reasons. First, one question from the MISS, relating to medication, was not answered by a majority of patients. The second reason is that, since the CSQ was developed in the UK, it is considered that it is the best measurement to use for a similar population and situation. Modifications were made to the other part of the questionnaire to obtain more demographic information about patients (Appendix1). One question was added, asking patients about their last visit to the GP, in order to eliminate those who did not attend for more than 12 months. In order to encourage more practices to participate in the study one question, asking the patient to record the name of the doctor he/she has seen, has been eliminated, although this question might be important in comparing GPs (Appendix 6). In order to calculate the sample size for this study 20 modified questionnaires were distributed to adult patients in one practice. Thirteen questionnaires were returned and 11 were completed. No explanatory letter was attached to the questionnaire, which may explain the low response rate.

2.6. General practitioner questionnaire (Appendix 7)

A questionnaire was sent to GPs who participated in the psychosocial study, asking for sociodemographic characteristics, such as sex, age, practice workload, GP interest in psychosocial problems, number of years in general practice, and year of qualification . A letter was attached to the questionnaire, with the emphasis on the confidentiality of the information provided.

2.7. Cut-off point

It is important to have a clear dividing line between satisfaction and dissatisfaction. If 4- or 5- point Likert scales are used in order to discriminate between satisfied and dissatisfied patients, three different methods have been identified which can be used for cut-off points :

1. To use the percentage of dissatisfied patients identified in another similar study using a similar population, and conducted in a similar setting. Analysis can be done by assuming that dissatisfied patients are below that percentile. An average of 20% of dissatisfied patients were identified in general practice (Locker and Dunt 1978), so dissatisfied patients can be considered below the 20th percentile.
2. To include a closed (with yes and no answers) specific or open-ended question (categorised as positive and negative attitudes) in the satisfaction questionnaire. This method will divide patients into two groups: those with positive and those with negative attitudes.

3. To consider patients with scores below the mid-point (which represents the sum of uncertain answers) as dissatisfied and those equal and above as satisfied.

The above three methods can be used for the whole questionnaire or the separate dimensions.

2.8. Comments

Spaces for comments were included in the computer and audit studies' questionnaires, the aim of giving patients more opportunity to express their opinions.

Advantages of including comments:

1. it covers all areas important to patients who were not included in the questionnaires
2. it identifies those who were not satisfied and compares their satisfaction with those who were satisfied, and it compares their characteristics.
3. it shows patients that their specific complaints were appreciated. This might strengthen the receptionist-patient, and doctor-patient relationships, and improve patient satisfaction, especially in dissatisfied patients.
4. it allows patients to express their own point of view.
5. it is an extra tool which can improve the information given by the questionnaires by allowing patients to specify areas of important to them.
6. it helps in allowing a practice to identify specific areas in the

system of concern to patients, this information could be used to address the particular area of concern instead of replacing or changing the whole system, saving time, effort and cost.

2.9. Confidentiality

An attempt was made to ensure confidentiality in order to encourage a high response rate and to overcome reluctance of patients to criticise their own doctors, as well as to increase patients' negative opinions. This was done by writing the letter to patients on University headed paper. The questionnaires were not marked in any way to identify the patients and patients were also informed about the anonymity of the information they were providing. The study was conducted by the university and not their general practitioner. This might have increased patients' willingness to express negative opinions but might have affected the response rate, as it has been proved that a letter from the general practitioner improves patients' response rate.

Chapter 3. Are GPs able to detect psychosocial problems and does detection affect patient satisfaction ?

Summary

The aim of this study was to investigate the effect of identification of psychosocial problems in a consultation by a GP on patient satisfaction.

1500 patients from 12 different practices in West of Scotland were involved. In each practice 125 questionnaires were distributed to consecutive adult attenders with instructions to complete the questionnaires after the consultation. At the same time the GP completed a questionnaire with his/her impression regarding patients' mental status.

893 patients completed the questionnaires: a response rate of (61.6%). Morbidity of psychosocial problems in general practice and the detection rate were not dissimilar to those found in other work. Non-respondents were found to be older, more anxious and more depressed. The study found that detection of psychosocial problems in patients attending general practice led to improvement of patient satisfaction, compared with those who had been missed or considered as normal by their GPs; the differences were highly significant between these two groups.

It has been shown that there is a positive correlation between age and satisfaction: as age increases, patient satisfaction increases.

This work has shown the importance of detection of psychosocial problems in general practice. In order to improve satisfaction in patients with psychosocial problems there is a need to improve GPs detection rate.

3.1. Introduction

Psychological problems play a very large part in general practice; they are very common, very varied, and at times very complex. Patients often present with problems which are a mixture of all three elements, physical, psychological and social. The large number of patients with psychological problems in the community present a major problem to those who plan to improve health care.

Anxiety and depression, or the combination of both, constitute the bulk of psychosocial problems presented in general practice (Shepherd and Clare 1981, Marks et al 1979, Goldberg and Huxley 1980). It has been found that over 70% of patients with psychological disorders consider general practice the best place to turn for help regarding their problems, but only one-fifth to one-third of these patients have discussed their problems with their GP (Good et al 1987).

3.2. Definitions.

Psychology is about the behaviour of individuals as separate entities. Psychiatry can be both psychological and social, in the sense of studying the behaviour of individuals in groups (Hannay 1988).

Social aspects of an individual's life are related to his ability to cope with relationships at various levels, his role in society both in work and leisure, the attitude of society towards him and his response to its demands (Barber 1984).

The term "depression" describes "a continuum of phenomena from a normal mood which is common and affects almost everyone from time to time to a severe disorder" (Paykel and Priest 1992).

There is no point of discontinuity between normality and depression (Goldberg et al 1987).

Anxiety is a state of fear, manifested by a feeling of inner tension and somatic symptoms. There is no clear cut-line dividing normal people from those with anxiety, for a firm diagnosis to be made (Goldberg et al 1987).

Psychosocial problems presented to general practitioners are anxiety, depression, tension states and psychosomatic symptoms. Problems can be related to poverty, unemployment, one-parent families, juvenile delinquency, drug abuse, ageing, terminal illness, bereavement, marital and family problems, sleep problems, sexual problems, personality problems, and chronic alcoholism.

3.3. Prevalence

The prevalence and incidence rates vary enormously from one survey to another.

The prevalence of psychological disorder in patients attending general practices has been estimated to be between 8.4% (Von Korff et al 1987) and 46% (Ormel et al 1990); other intermediate results have been obtained (Eisenberg 1992, Crossley et al 1992, Bordman 1987, Goldberg and Bridges 1987, Skus and Williams 1984, , Barrett et al 1988, Marks et al 1979).

Recent studies have used the probable prevalence of psychiatric illness (Crossley et al 1992, Bordman 1987, Goldberg and Bridges 1987).

Marks et al (1979) suggested treating probable prevalence with caution in small samples, and using consecutive attenders. For

true prevalence a random sample of patients on each doctor's list should be used. This was not done in their study.

The prevalence rate for depression is estimated at between 20% - 25% (Paykel and Priest 1992, Goldberg and Huxley 1980).

The prevalence rate for anxiety is estimated at 31%, and a further 31% suffered from a mixture of anxiety and depression (Goldberg and Huxley 1980).

The above research suggests that the observed variation in rate may be due to:

1. differences in practice population;
2. the type of instrument used;
3. the threshold score used to discriminate between cases and non-cases in a given population;
4. how different researchers and doctors define psychological disease (Markus et al 1989, Shepherd and Wilkinson 1988, Wright 1988);
5. differences in the attitudes, beliefs, perception, understanding and skills of general practitioner (Periera Gray 1987, Bridge and Goldberg 1984);
6. the absence of valid classification of mental disorders for general practice (Shepherd and Wilkinson 1988).

Referral rates to psychiatry vary widely, from 17.7 to 160.6 per 10,000 at risk per annum (Fry et al 1982). The reason behind this can be related to GP age and attitude, or to the perception of mental illness by the patient and his family; the most important is the stigma related to referral (Fry et al 1982).

3.4. Detection of psychosocial problems in general practice

3.4.1. Detection rate

Psychosocial problems are not like other diseases, which can be investigated using laboratory tests. GPs miss a significant proportion of patients with psychosocial problems. The estimated rates of failure to detect psychiatric disorders by general practitioners have ranged from 10% to 90% (Eisenberg 1992, Von Korff et al 1987, Marks et al 1979, Skus and Williams 1984, Johnstone and Goldberg 1976, Wright and Perini 1987, Freeling et al 1985).

In a study of psychological problems in a primary care setting by Armstrong et al (1992), it was shown that the majority of GPs believed that less than 20% of the patients had psychological problems, while psychiatrists believed that more than 30% of patients had such a problem; this difference was statistically significant.

3.4.2. Influences on detection

Identification of psychosocial problems can be achieved through good observational skills (Goldberg and Huxley 1992, Goldberg 1990, Gask et al 1991) and the ability of the patients to communicate thoughts and feelings. Psychiatric illness can be adequately assessed by an understanding of what the illness means to the patient and how he/she feels about it. GPs differ from hospital doctors in that the patients and their family are well known to their doctors as a result of the continuity of their relationship and the presence of individual updated records. The full and proper use of the patient's medical record plays an

essential part in the diagnosis and management of psychosocial problems in general practice (Wright 1994).

Detection of psychosocial problems is influenced by three main factors: organisational factors, GP factors, and patient factors.

3.4.2.1. Organisational factors

Organisational factors include: increased workload on GPs, limitation of time, inappropriate use of available resources, and continuity and availability of care.

It has been shown that longer appointment intervals (10 minutes) tend to decrease stress and increase arousal of GPs (Wilson et al, 1991). The reasons for short appointment intervals are: running late, booking more patients, and the brevity of the average consultation. This can be improved by better time-management, or by calculating the average consultation length and adjusting the appointment as required. It has also been shown that GPs felt stressed when psychosocial problems were recognised as relevant and dealt with during consultation (Howie et al 1992). Improvement in recognition and dealing with psychosocial problems improved with increased consultation length (Howie et al 1991, Whitehouse 1987). Longer consultations were found among those patients newly presenting psychosomatic and behavioural problems (Morrell 1971, Anderson and Mattsson 1989). Doctors with more interest in general practice and mental health problems have been found to have longer consultation times (Raynes and Cairns 1980).

Continuity and availability of care plays a large role in early detection. Unless patients are seen by the same doctor every time and with more frequency than occurs in today's general

practice, it is difficult to fulfil all these criteria. This is a result of patients being on a combined list, where they are not able to choose the doctor they see, of increased use of locums, of major commitments outside the practice and, most importantly, of lack of sufficient numbers of full-time female doctors (Baker 1993). A high prevalence of psychosocial problems has been found among women, who are affected two or three times as often as males (Fry 1979, Barber 1984). The majority of female patients attending general practice prefer to be seen by a female doctor (Gray 1982). Therefore there is a need for more full-time female doctors to improve the care provided for patients with psychosocial problems in general practice.

3.4.2.2. GP factors

The training, interview style, interest, experience and ability of the GP may play a major role in the early detection of psychosocial problems. Those GPs who are competent (Verhaak 1986), self-confident and outgoing, with high academic ability, make more accurate assessments (Goldberg et al 1982).

Regarding medical training, Eisenberg (1992) stated two reasons for non-recognition of psychiatric disorders:

'the inadequate preparation provided by current medical education for the clinical practice of general medicine, and the formal content of the medical curriculum has less effect on the kind of physicians students become than the "hidden" curriculum'.

Psychiatry is inadequately represented in the medical curriculum (Eisenberg 1988, Paykel and Priest 1992). The Royal Commission on Medical Education, reporting in 1968, commented on the

inability of many GPs to deal with the majority of problems associated with psychological and/or social factors. As a result, Cartwright and Anderson (1981) suggested that it is necessary to adjust the undergraduate curriculum to give students the opportunity to spend more time in the community, so that they could be made aware of the various conditions present. This view has been accepted by the GMC (GMC 1993).

It has been shown that GPs' interview style is one of the important factors: those GPs with an open manner in their communication, and who use a general medical approach instead of a clinical one, detect more psychosocial complaints (Verhaak 1986). Those GPs who possess and use directive skills (employ direct questions, understand the presenting complaint, and manage over-talkative patients) are best at making a diagnosis of psychosocial disorder (Goldberg et al 1982).

Marks et al (1979) found that detection rate was high for older GPs, the more experienced, the ones who had a great interest in psychiatry and those who showed more interest and concern towards their patients.

General practitioners assess psychosocial problems on the basis of the patient's personality, social functioning, and previous illness behaviour (Wright and Perini 1987). GPs themselves were influenced by patients' different behaviour in the consultation (Davenport 1987).

3.4.2.3. Patient factors

Patients consult their doctors with physical symptoms, which often reflect their psychological state. Others, who have psychological disorders, frequently exhibit physical symptoms; these are considered as "psychosomatic disorders".

In a study done by Eastwood and Trevelyan (1972), which aimed to investigate whether there is a positive association between physical and psychiatric disorders, it was found that psychiatric patients had significantly more physical diseases than the control group. People with more than one condition comprise 1/6 of the total psychiatric patients and these differ from others, being significantly older. 65% of the major physical conditions discovered in psychiatric patients and 85% in the control group were unknown to the general practitioner. There are inconsistencies in the findings of other studies related to psychosomatic disorders; the reasons for this are:

- the low threshold of complaint;
- the high consultation rate;
- the varying attitudes and practices of the doctors concerned;
- the actual measurement of the physical and psychiatric conditions.

The majority of patients with "hidden psychiatric illness" have formulated their problems in somatic terms not only to their doctors but also to themselves (Goldberg and Blackwell 1970).

It has been found that patients with somatic problems had a lower score on the psychiatric distress test than those with psychosocial problems. Somatic patients had fewer social

problems and statistically significant differences in their personality profiles (Wright 1990).

In a study looking for characteristics of depressive illness, it was found that one-third had associated physical illness and their depression appeared related to it (Freeling et al 1985)

(A) Patients' attitudes

Few studies have looked at patients' attitudes, and expectations with regard to GP's management of their psychosocial problems.

Yaffe and Stewart (1986) in their study of middle-aged patients' attitudes to this subject found that 90% wanted their GP to discuss non-medical problems, claiming that such issues were rarely discussed. Two-thirds of the patients felt their GP was aware of these problems and asked the most pertinent questions.

(B) Patients' preference for gender of doctor

More female patients consult female than male GPs and consequently proportionally less men (Brink-Muinen 1994, Fennema et al 1990). There are more patients with psychosocial problems attending female GPs (Fennema et al 1990). It has been shown that patients considered female GPs more sympathetic, particularly about psychosocial problems and diseases specifically affecting women, more caring, take more time and are easier to talk to (Challacombe 1983, Fennema et al 1990).

(C) Demographic factors

In most work related to psychosocial problems, researchers have looked at the following: patients' characteristics; sex; age; marital status; employment status and level of education.

It has been found that women patients have more psychiatric symptoms, mostly in a mild form, and those are the most common primary reasons for their consultation. They also consult more often (Markus et al 1979, Wright and Perini 1987, Good et al 1987, Williams et al 1986), while for men, psychiatric illness was in the fourth position. Regarding age, psychiatric morbidity was found to be highest in the 40 - 60 age-group. Regarding marital status, those who are living apart from their spouses have been identified with high conspicuous morbidity; after this come those who are divorced, widowed, married living together and single (Markus et al 1979). Regarding employment status, psychiatric illnesses were high among the unemployed, and low in students; unemployed female patients were more likely to suffer from such illness than were housewives. Regarding education, more symptoms were found in those who had received the minimum full-time education (Markus et al 1979).

Consultation rate

It has been found that patients with mental disorder alone or associated with chronic physical illness have higher consultation rates than the practice population at large (Wright 1988, Williams et al 1986).

3.4.3. The effect of identification of psychosocial problems

Two studies (Hoeper et al 1984, Shapiro et al 1987) have shown detection of emotional distress may not be helpful. In both these studies family doctors did not use feedback in a constructive way with patients (Goldberg and Huxley 1992). In one of these studies

doctors were uninfluenced in their management by feedback. Neither of these studies have measured outcome in the patients. In contrast, Johnstone and Goldberg (1976) have shown that if the patient's doctor is made aware of these hidden psychosocial problems, the patients are likely to accept help and to have fewer symptoms at follow-up after a year. Millar and Goldberg (1991) have shown that GPs who identify emotional distress in patients are able to provide relevant information, advice and treatment, especially for those with many symptoms and low distress scores. They are more likely to negotiate management, obtain co-operation and produce satisfaction.

Two studies have shown that recognition of depression in primary care has led to a better outcome (Freeling et al 1985, Ormel and Giel 1990). Goldberg (1992) classified emotionally distressed patients in primary care into three groups. He suggested that each of these groups will benefit from detection of their distress. The largest of these groups (patients suffering from mild symptoms) will benefit from just recognition and discussion. Ormel et al (1990) found that recognition of psychological disorders was strongly associated with management and outcome. Recognized cases were more likely to receive mental health interventions from their GP and had better outcomes in terms of both psychopathology and social functioning.

Recently May (1992) reported on the association between detection of psychiatric morbidity and patient satisfaction. She failed to demonstrate a significant difference in overall satisfaction scores between those patients recognised as emotionally disturbed and those not so recognised. This negative

finding may be explained by both the low power of the study (of 222 patients) and by the fact that participating GPs could have varied in their formulation of the contribution of psychological factors to the consultation. Wright (1994) suggested that the use of a psychological questionnaire test in general practice might improve detection, management, and outcome of psychiatric care in general practice. In this chapter an attempt is made to address these problems by using a large sample and questionnaires which allow a more detailed analysis of the diagnostic strategies of participating GPs.

3.5. Aims and objectives

Aims

To investigate the association between self- reported mental state, general practitioner assessment of the psychological component of consultations, and patient satisfaction.

The objectives of this study are

1. To report the frequency with which GPs detect the presence of anxiety, depression and overall psychological problems.
2. To report the presence of anxiety, depression and overall psychosocial problems in consulting patients.
3. To assess the influence of psychosocial problems and their detection on patients' satisfaction .
4. To identify patients' characteristics (e.g. age and sex) which influence satisfaction in association with detection of psychosocial problems.

5. To study the influence of GP characteristics in terms of sex and age on detection rate of psychosocial problems and patient satisfaction.

3.6. Patients and methods

3.6.1. Pilot study

A pilot study was carried out in 1991 in order to test the feasibility of the method. 125 questionnaires were distributed in one practice. The response rate was below 50%. The following problems were uncovered by the pilot study:

1. Many questionnaires were placed in the collecting box without the envelope with the code number, which made it impossible to identify the questionnaires which belonged to the same patient.
2. Patients went home and forgot about the questionnaires.
3. Some patients had placed the stamp over the code number on the envelope, making it difficult to read.

As a result of this it was decided to write the code number on each questionnaire. A new letter was written with the exclusion of the part about stamps, and with more emphasis on confidentiality (Appendix 2).

3.6.2. Sample size

The power of a significance test is *"a measure of how likely that test is to produce a statistically significant results for a population difference of any given magnitude"* (Altman et al 1980). It is possible to calculate the sample size necessary to have a high probability of obtaining a statistically significant result if the distribution of the principal outcome measure is known and the smallest difference of clinical relevance is specified in advance. This can be accomplished by the use of a nomogram which is a simple flexible method (Altman et al 1980).

The nomogram, (Appendix 8) is a graph which gives the relation between the standardised difference, the total sample size, the power, and the level of significance. It makes use of the standardised difference divided by the estimated standard deviation. It is appropriate for calculating power for a two-sample comparison of a continuous measurement. The variable that is being measured needs to be roughly normally distributed. Calculating the sample size for this study was achieved by the use of the nomogram graph. The CSQ total score is 40. We postulated that an extra increase in satisfaction in the group of 2.0 (5% increase in satisfaction score) on average would be an important difference and we wanted a high probability of detecting a true difference at least that large. The standard deviation was available from the pilot study of 37 patients in a single practice is 4.3. So according to the standard difference formula

$$\text{standard difference} = \text{relevant difference} / \text{standard deviation}$$

$$\text{standard difference} = 2.0 / 4.3 = 0.59$$

For the nomogram to achieve a 90% chance of having the specified difference of 4.3 significant at the level 0.05, we would need a total of about 95 adult patients in each group.

3.6.3. General practitioners

A total of twenty Glasgow general practitioners were asked to participate in the study. Eight of the GPs were members of a local Balint group, the reminder were age- and sex-matched GPs

with no Balint training. The study was carried out in summer/autumn, 1992.

3.6.4. Patients (Figure 1)

125 questionnaires were distributed to adult patients, (age 16 years and over), attending consecutive consultations in each practice. Each patient (age 16 and above), was given an envelope by the receptionist before the consultation in an effort to ensure that they would comprehend instructions and be capable of making adequate judgements on the standard of care that they received.

3.6.5. Materials

A book-size envelope was used, each envelope containing two sets of questionnaires, the GHQ-28 and a short version of the consultation satisfaction questionnaire. A letter was attached to the envelope, to explain to the patient the purpose of the study, asking him/her to fill in the questionnaires after the consultation and for his/her written consent. The letter also directed the patient to put the completed questionnaires in the envelope, to seal the envelope and to place it in the box provided.

The general practitioner was provided with 125 questionnaires. A number was written on each envelope, and on the two questionnaires, and the receptionist was advised to write the number on the envelope next to the patient's name in the appointment book. At the end of each surgery the doctor used the appointment book to match the doctor and patient questionnaires.

The general practitioner completed the rating questionnaire for each patient without seeing the patient's general health questionnaire, and the patient did not know that the general practitioner was filling in a rating scale identifying their psychosocial problems concurrent with the general health questionnaire.

3.7. Confidentiality

see chapter 2, 2.9., page 63.

3.8. Outcome measures.

see chapter 2; 2.1.8., page 44: 2.3.3., page 50: 2.4.5., page 58.

3.9. Data cleaning process

1. Questionnaires were included if they fulfilled the following criteria:

- GPRQ - all analogue scales and patient code number to be completed;
- GHQ - at least 25/28 questions to be completed;
- CSQ - at least 7/8 questions to be completed.

2. Screening of the questionnaires took place to ensure that only one questionnaire was submitted per patient. If more than one was found, the first one was kept and the others removed. This was done by looking at each practice separately, and for those with the same initial, sex, and age, the three sets of questionnaires were removed.

3. Checking data.

The data were entered on an Excel database, using an Apple Macintosh microcomputer for later analysis using SPSS/PC+4.0

(Norusis1990). For the uncompleted questionnaires, a special code was used for the missing values. A frequency distribution was done for each variable to detect abnormal values. The number of missing values for each variable was obtained from a frequency table.

3.10. Statistical Methods

Descriptive analyses were performed to describe the characteristics of the study subjects; mean, standard deviation; median (used to overcome the influence of extreme values on the mean), range and quantiles.

For further analyses the variables were examined for their approximation to normality by inspection and by using the normality test (Statworks 1985). Thereafter the appropriate parametric or non-parametric test was applied. The type of analyses considered were those designed to fulfil the aims and objectives of the study. Correlation tests were performed using the "Pearsons correlation coefficient".

The values of the variables were plotted before computing a correlation coefficient, since Pearsons correlation coefficient is to be used only for linear relationships. Proportions were compared using the Chi-square analyses on the absolute numbers involved.

Three methods were suggested for measuring accuracy of detection rate (Goldberg and Huxley 1980):

1. Spearman's rank-order correlation coefficients, if 'n' is larger than 40;
2. Cohen's Kappa (measurement of agreement);

3. Percentage agreement.

Spearman's correlation coefficients, which show the amount of agreement between estimates of morbidity provided by screening questionnaires and by physicians' and percentage agreement, have been calculated.

Correlation coefficients between variables grouped at the GP level were weighted according to the number of patients the GP contributed to the study. Correlation coefficients between patient response variables were calculated within each GP practice and pooled using the inverse of the variance of the coefficients as weights, using the transformation $z = \ln[(1+r)/(1-r)] \times 1/2$. This transformation has the property that z is normally distributed with variance $1/(n-3)$. The z values were then pooled using the inverse of the variance and then inverted using the formula $r = (y-1)/(y+1)$ where $y = \exp(2z)$. Confidence intervals were calculated on the z scale and then back transformed. The above calculation was performed to minimize the effect of ecological fallacy, which result -from making a causal inference about individual phenomena on the basis of observations of groups (Morgenstern 1982).

3.11. Feedback to Participants

The results of the study were sent to the individual general practitioners who participated in the study. Their questions and comments have amplified the understanding of the data.

3.12. RESULTS

3.12. 1. Response rate.

(I) General practitioners' response rate (Figure 2).

Eighteen general practitioners agreed to participate. One withdrew from the study because of difficulties with practice organisation; another GP did not start early enough as a result of outside practice commitments, and since the data collection process had already started, he was excluded; two GPs did not provide GPRQ coding (matching of patient and GP questionnaires was therefore impossible); and two GPs distributed less than half of the questionnaires to patients. The results from these four GPs were therefore discarded.

(II) Questionnaires' response rate (Figure 3).

1500 questionnaires were given to 12 GPs . 1476 questionnaires were distributed to patients. From these a set of 1188 patients' questionnaires were collected. 27 questionnaires were eliminated, including those patients who were under 16 years of age. For those who answered more than one questionnaire, the first one was kept and the second discounted. So the total number received which fulfilled the study criteria was 1161 (80.1%) of 1449. The total number of completed patients' questionnaires was 772 (53.3%) from the total distributed (1449). 121 uncompleted patients' questionnaires were included where not more than 10% of the questions were missing. 893 (61.6%) patients' questionnaires were considered as completed.

(A) GPRQ

1405 (96%) General Practitioner Rating Questionnaires (GPRQ) were received and from these 1402 were complete. Age and sex were not recorded in 16 questionnaires. Of these, 509 GPRQs were received with no patients' questionnaires to match them. So the analysis involved comparing this group of patients (non-respondents) with the total sample (893 patients), looking for difference in age, sex, degree of significant of psychosocial problem, degree of anxiety, and degree of depression.

(B) GHQ and CSQ

1033 (70.6%) General Health Questionnaires (GHQ) were received from patients (completed and uncompleted were included). 1075 (73.5%) Consultation Satisfaction Questionnaires (CSQ) were received from patients (completed and uncompleted were included).

(III) Patients' response rate for individual GPs

Table 2. shows patients' response rate for individual GPs. There was a wide variation in the number of questionnaires collected, ranging from 74 to 119, and the same variation for the completed questionnaires response rate, ranging from 55 to 91 percent.

3.12.2. Characteristics of respondents and non-respondents

Respondents' and non-respondents' data from GPRQ were examined to detect any significant differences in age (Table 3), using t-test; sex, using chi-square test; GP psychological impression; GP anxiety impression; and GP depression impression using Wilcoxon

test. No significant differences were found for sex ratio; there were significant differences between the age and between the three GP scales for both groups. Non-respondents were older, and more likely to be assessed by their GPs as having more psychological problems and more anxiety and depression.

3.12.3. General practitioners' characteristics

Table 4. showed GPs' characteristics: experience, practice workload, time devoted to patients with psychosocial problems and interest in psychosocial problems. The median age for GPs is 39 (range 33-52) and the male to female ratio is 5:7. The median duration of experience as a doctor before entering general practice was 5 years (range 4-11). The median duration of experience as a GP was 8 years (range 2-19). Six GPs had experience of a hospital psychiatric post, with median duration of this post being 22 weeks (range 12-24). Five GPs had been members of a Balint group, with median duration 96 weeks (range 6-96). The median number of patients seen each week was 135 (range 90-200), the median consultation time was 7.5 minutes (range 6-10). Nine out of 12 GPs provided more time for patients with psychosocial problems and six GPs indicated that they had a particular interest in psychosocial problems.

3.12.4. Distribution of questionnaires scores

(A) Consultation satisfaction questionnaires.

The distribution of the consultation satisfaction questionnaire scores is shown in Figure 4; the scale range is from 0 to 40. It appears that patients tend to be highly satisfied.

The mean scores for CSQ questions were compared with those of Dr. R. Baker's study (1990 a), Table 5 and it showed that in this study patients' mean scores are higher except for depth of relationship, question number 1, where the mean scores are the same.

(B) General practitioner rating questionnaires

The distribution of scores for GPRQ are shown in Figure 5; the scale range is from 0 to 50. The majority of GPs' scores for the psychological, anxiety and depression impressions lie within 0-10 interval. This indicates that GPs consider that for many patients the psychological content of the consultation was relatively low.

(C) General health questionnaires

The distribution of GHQ is shown in Figure 6, the scale range being from 0 to 28. The majority (67.4%) of patients' scores lie between 0-7. The number of patients decreases with the increase in scores; 3.4% of the scores lie within the interval 22-28. This indicates that the majority of patients are identified by GHQ as having no or mild forms of psychiatric disorders.

3.12.5. Correlation between and within questionnaires

(I) Correlation between questionnaires (Table 6)

(A) GPRQ and GHQ

In Table 6. a positive correlation between the GPRQ general psychological rating and the GHQ is seen within each practice. The correlation is reasonable for seven GPs (correlation range from 0.38-0.61). It is also reasonable ($r=0.39$, $p=0.0001$) for the

total respondent population. The mean value for the correlation coefficient is +0.37 with a standard deviation of 0.17 and a range of +0.15 to +0.6, which is similar to the findings of the Manchester study (Goldberg and Huxley1980).

(B) GPRQ and CSQ

A positive correlation between the GPRQ psychological impression and the CSQ is seen within nine practices. The correlation was reasonable (0.4, $p=0.0001$) for only one GP (number 12), and weak for the others. It was very weak for the total sample.

(C) GHQ and CSQ

No correlation was found between the CSQ and GHQ scores.

(D) CSQ and age

Regarding age, the correlation for the total sample is $r=0.2$, $p=0.0001$.

(II) Correlation within each questionnaire

(A) GPRQ

There were strong positive correlations between the scores GPs gave on the significance of psychological factors and scores on the anxiety item $r=0.82$, $p=0.0001$, and with the scores on the depression item $r=0.62$, $p=0.0001$.

(B) CSQ

Since the alpha coefficient is considered to be the most important index of test reliability (Nunnally 1979), this method

was used to assess the internal consistency of the short version of the CSQ. The SPSS statistical package was used for the analysis, and the value for alpha obtained was 0.8. Internal consistency is considered good for a value of alpha of 0.5 and above (Helmstadter 1964), and Nunnally recommends a value of 0.7 and above.

(C) GHQ-28

There were strong positive correlations between the scores patients gave on the somatic symptom scale and total GHQ scores $r=0.78$, $p=0.0001$, with the anxiety and insomnia scale and total GHQ scores $r=0.86$, $p=0.0001$, with the social dysfunction scale and total GHQ scores $r=0.82$, $p=0.0001$, and with the severe depression scale and total GHQ scores $r=0.74$, $p=0.0001$

3.12.6. Patients' characteristics and satisfaction.

(A) Patient sex and age

The percentage of male and female respondents is 31.8: 68.2 (Table 3). The ratio (M:F 1:2) is similar to those consulting in normal general practice (Fry 1993).

(B) Patient age

Respondents' age was divided into five age categories 16-24, 25-34, 35-54, 55-64, and 65-100. Figure 7 shows the respondents' age and sex distribution. This describes a population which is mainly middle-aged or younger with a predominance of females. Figure 8 shows the respondents' age and sex distribution compared with data for the Scottish population (NHS 1992). This shows a similarity between the two populations.

(C) Patient satisfaction, age and sex

Table 7 shows CSQ mean scores for each age group for the total number of patients, and for male and female patients separately. P. value was calculated using the Kruskal-Wallis test, since satisfaction scores were not normally distributed. It shows that as age increases CSQ scores increases.

Table 8 shows that male patients are more satisfied with professional care and perceived time, and the difference is highly significant ($p=0.001$ and $p=0.004$ respectively), while there is no significant difference related to depth of relationship subscale.

3.12.7. Descriptive information for individual samples.

Data in Table 9 shows basic information on the patients seen by each GP, together with GPRQ scores. Figures given are median, and interquartile ranges are in parentheses.

The number of patients for each GP varied from 56-95. Percentage of females in each GP population varied widely, from 48-81. There were substantial differences between GPs in the detection of psychological elements in the consultation. This is associated with variations in psychological morbidity amongst different practice populations.

3.12.8. Morbidity of psychosocial problems, detection rate, and accuracy.

(A) Morbidity and detection rate

The morbidity and detection rates for doctors in the Glasgow study were compared to those reported in Glenrothes (Wright and Perini 1987), and Lewisham (Boardman 1987) (Tables 10 and 11).

It is important to note that probable prevalence as shown by the GHQ was similar in the Glasgow study (42%) to that reported for patients in Lewisham (42.9%), and it is lower than that of Glenrothes (28%).

The Lewisham GPs consider only 19.3% of the patients to be cases, the Glenrothes GPs 26.5%, while in the Glasgow study the estimate was 25.5%.

It should be noted that in the other studies a 6-point general practitioner rating scale has been used, where the rating of 2-5 means the GP considers the patient as a case.

(B) Accuracy

Spearman's correlation coefficients between the patients' reported symptoms levels on a screening questionnaire (GHQ) and general practitioner assessments of his/her patients for Lewisham and Glasgow GPs were 0.35 and 0.34, which is approximately similar. The sensitivity and specificity is higher for Glenrothes.

Table 11 shows a comparison of validity coefficients for the three studies regarding detection rates by sex. The three studies found that GPs detected more female patients than male patients with psychosocial problems, particularly in Glasgow and Glenrothes.

The proportion of high scorers identified by both GPs and GHQ (those equal and above the cut-off points) is higher for Glenrothes.

(C) Detection rate for individual questionnaires

Figure 9 shows the percentage of case identification by GHQ and GPRQ. This figure represents the whole sample. The prevalence of psychosocial problems for GHQ is 29%. while GPs identified 25.9% of patients with psychological problems, 25.3% with anxiety, and 25.4% with depression. It appears that GHQ detected more cases than the GPs. GPs identification rates are similar for psychological problems, anxiety, and depression.

(D) Detection rate for total sample

Psychosocial problems

Table 12 shows that about 12.8% of the patients were identified by both general practitioners and GHQ (true positive) as having a psychosocial problem. About 16.2% were not identified by GPs (false negative). About 12.7% were identified by GPs only as cases (false positive). About 58.3% were considered as normal by both GPs and GHQ (true negative).

Anxiety

Table 12 shows that around 12.4% of the patients were identified as true positive. About 16.6% were missed by GPs (false negative). About 12.9% were misidentified by GPs as cases (false positive). About 58.1% were classified as normal by GPs and GHQ (true negative).

Depression

Table 12 shows that around 13.3% of patients were identified by GPs and GHQ (true positive) as depressed. About 15.7% were unrecognised by GPs (false negative). About 12.1% were

misidentified by GPs as cases (false positive). About 58.9% were classified as normal by GPs and GHQ (true negative).

(E) Detection rate and diagnostic accuracy by individual GPs

Figure 10 and Table 14 shows the four diagnostic groups of patients for individual GPs. It shows a wide variation in detection rate between GPs (range 1.4%-21.7%). Some GPs detect more cases at the expenses of more false positives ($r=0.49$, $p=0.01$) (Fig 11).

Table 14 shows the diagnostic accuracy (sum of true positives and true negatives) for individual GPs. It shows a wide variation between GPs (range 44.8-80.2%).

(F) Specificity and sensitivity for individual GPs

Table 14 shows the specificity and sensitivity for individual GPs. There is very considerable inter-physician variation in the specificity (range 47%-92%) and sensitivity (range 12%-76%). Specificity for the overall detection of psychosocial problems is 82.2%, while the sensitivity is 44%.

(G) Correlation between the groups

A positive correlation was found between the percentage of patients with true positive and the percentage of patients with false positive $r=0.49$, $p=0.01$ (Figure 11). It shows that as detection of cases increased, the number of false positives also increased.

3.12.9. Detection rate and patient satisfaction

Table 13 shows the effect of GPRQ general psychological impression ratings on total CSQ scores with low and high GHQ total scores. Values are mean CSQ scores, and standard deviation. Wilcoxon's two sample tests performed comparing CSQ mean scores for true positive versus false negative, and false positive versus true negative.

(A) Psychosocial problems

Patients assigned a high psychological score by GPs were more satisfied (CSQ mean score 30.9, sd 4.9) than those missed or considered as normal (CSQ mean score 29.2, sd 4.9) The difference is statistically significant ($p=0.0002$)

Table 13 shows that patients considered by GPs as normal and scored high on the GHQ (false negative) were less satisfied than those given high scores by GPs and scored high on GHQ (true positive), and the difference in the mean scores is significant ($p=0.01$). Patients identified by GPs and scored low on the GHQ (false positive) were more highly satisfied than those given low scores by GPs and scored low on the GHQ (true normal), and the difference is significant ($p=0.007$).

(B) Anxiety

The findings are similar to those patients with psychosocial problems. The differences between the groups are highly significant. For true positive versus false negative $P=0.004$, and for false positive versus true negative $p=0.002$ (Table 13).

(C) Depression

Table 13 shows that the difference in CSQ mean score between true positive and false negative and between false positive and true negative are small, and the differences are not significant.

(D) Psychosocial problems, anxiety and depression

Figure 12 shows the CSQ scale (y-axis) enlarged in order to show the differences in CSQ mean scores between false positive, true positive, true negative, and false negative for patients with psychosocial problems, patients with anxiety, and patients with depression. Figure 12 illustrates that patients identified by GPs as having psychiatric disorders were more highly satisfied than those who were missed and those who were normal.

Detection rate for individual GPs and CSQ mean scores

Table 14 shows CSQ mean scores for: the four groups of patients; for individual GPs; and for the total.

There is variation in CSQ mean scores and in the percentage of patients in each group. For true positives the range of CSQ mean scores is 23-35. For false negatives the range of CSQ mean scores is 25.3-32.5. For false positives the range of CSQ mean scores is 26.7-32.5. For true negatives the range of CSQ mean scores is 26.6-33.2.

An analysis was performed to detect any correlation between CSQ mean scores for the four groups and between the percentage of patients within the four groups, and a strong positive correlation was found between CSQ mean scores for the true positive group and the percentage of true positive (Figure 13), $r=0.7$, $p=0.01$. The

figure shows that as the percentage of true case detection increases, patient satisfaction increases.

Psychosocial problems detection rate and CSQ subscales

The CSQ measures three dimensions of the consultation: professional care, depth of relationship, and perceived time. The analysis is performed to identify which dimension of the consultation is influenced by GP detection of psychosocial problems. The following analyses have been carried out by looking at the mean score for each dimension (subscale) separately for the four groups of patients, the aim being to detect any significant differences between the groups.

Professional care

A significant difference was found in the mean scores of false positive and true negative groups ($p=0.006$). This indicates that patients identified by GPs only as having psychosocial problems (false positive) are more satisfied with professional care than those classified as normals by both the GHQ and the GPRQ (true negative) (Table 15).

Depth of relationship

Significant differences were found in the mean satisfaction scores for all patients identified by GPs as having psychosocial problems. The p . value for true positive and false negative groups was 0.005, and for false positive and true negative groups was $p=0.002$. This indicates that patients with psychosocial problems are more satisfied with the depth of relationship than those missed or identified as normal by GPs (Table 16).

Perceived time

There are no clinical or statistical differences between the groups regarding the time provided in the consultation (Table 17).

3.12.10. General practitioners' characteristics, detection rate and patient satisfaction

Two of the general practitioner characteristics examined were age and sex.

For each of the variables, age and sex, GPs were divided into two groups. For each group of GPs the following were calculated: detection rate (four groups of patients, represented by the number and percentage of patients in each group); sensitivity; specificity; and mean CSQ score for each group of patients.

(A) Number and sex of patients seen by different sex of GPs

Of the 12 GPs who participated in the study, five were males and seven were females.

Figure 14 shows total number of patients seen by sex of GP, total number of patients seen by each GP, and total number of male and female patients seen by each GP.

Figure 14 shows that male GPs saw more patients during the study period, with a higher proportion of male patients than the female GPs, and vice versa for female GPs.

(B). GPs' sex, detection rate and patient satisfaction

Patients were divided into two groups; those who had been seen by male doctors (Table 18) and those who had been seen by female

doctors (Table 19). Each of these groups are divided into male and female.

In each table patients are divided into four groups: true positive, false negative, false positive and true negative with regard to psychosocial problems detected by GPs and GHQ. Mean CSQ score, number and percentage of patients were presented for the four groups of patients. P. value using the Wilcoxon test was carried out for the CSQ mean scores. Also, the sensitivity and specificity were presented as percentages.

Male GPs

Table 18 shows that satisfaction improved for male patients identified by male GPs as having psychosocial problems (true positive and false positive), and the difference in satisfaction is statistically significant ($p=0.04$) for true positive and just not significant ($p=0.06$) for the false positive. Also there was significant difference ($p=0.003$) in satisfaction level for false positive female patients compared to the true negative true.

Female GPs

Table 19 shows no significant difference in satisfaction between true positive and false negative, and between false positive and true negative for male and female patients.

This indicates that patients identified by male GPs were highly satisfied and the difference in satisfaction is clinically and statistically significant. This was not the case for female GPs.

Sensitivity was higher when GPs and patients were of the same sex. Specificity was slightly higher for the male GPs for both male and female patients compared with that of female doctors. Overall sensitivity was higher for female GPs and specificity was higher for male GPs.

(C). GPs' age, detection rate and patient satisfaction

GPs were divided into two groups by age: those younger than 40 years of age (6 GPs) and those 40 or older (6 GPs) (Table 20).

There are differences in CSQ mean scores for each of the four groups of patients, and the difference is significant for true positive and false negative groups, $p=0.01$, and between false positive and true negative, $p=0.008$ for GPs below the age of 40 years.

Patients attending younger GPs tend to be more satisfied if their psychosocial problems have been identified, even in that group considered by the GHQ as normal (false positive). It appears that the probability of identifying a true case correctly is higher for younger GPs, and the probability of identifying a true normal is higher for older GPs.

3.13. Discussion

This chapter has been concerned with assessing the rate of detection of psychosocial problems in general practice and the influence of this detection on patient satisfaction. The evidence suggests that patient satisfaction increases with identification of psychosocial problems. This finding will be discussed in more detail, with an additional look at the influence of other areas such as study method, questionnaires, response rate, and patients' and GPs' characteristics.

General practitioner response rate.

Only 60% of the GPs completed the study, in spite of the emphasis on the confidentiality of the information, and in spite of minimising the effort and time needed from those GPs who took part in the study. The reasons given are related to practice organisation problems; other reasons might be lack of motivation, increasing workload after the 1990 contract, or that the study demanded adjustments to working arrangements and added more work to their existing high workload (Chambers and Blecher 1993). In addition, research which investigates GPs' behaviour or thought is sometimes considered threatening.

Method

Regarding study methods, consecutive attenders' methods have been used for this study, following in the path of most similar studies in identification of patients with psychosocial problems in general practice attendance (Goldberg and Huxley 1992). It has been proved that similar results to those studies which have used a random sample were obtained (Boardman 1987).

In this study patients were included if aged 16 years and over, to ensure that they would understand and be able to make adequate judgements on the standard of care they received.

Patients' demographic characteristics

There was variation in the percentage of female patients seen by different GPs during the study. This variation reflects the differences in the demographic characteristics and consulting behaviour of each community served by the different practices. Overall, the data shows higher rates of female attendance compared to males. Similar findings appeared for other consecutive attenders in general practice settings (Marks et al 1979, Boardman 1987, Goldberg and Bridges 1987).

There is also variation in the median age of practice population; the majority of attenders were of middle age.

Questionnaires' response rate.

There are many factors which affect a questionnaire's response rate. In this study the response rate was affected by the following:

1. Some patients did not have their glasses, which they needed to fill in the questionnaires.
2. Some patients were in a great hurry.
3. Even after the method was simplified, a number of patients' questionnaires were not of value (could not be matched with GPs' questionnaires), but the numbers were very small compared to that of the pilot study.

4. A number of questionnaires were not completed and it was not possible to identify the patients due to the confidentiality of the study.

The response rates were partly affected by giving priority to anonymity of participants in order to increase the proportion of negative opinion by patients on the satisfaction scale. It has been considered that response rates for surveys which are done with reasonable care lie within the 60%-75% range (Fowler 1993). Even so, for this type of study the response rates were high enough to allow the assumption that the findings are representative.

Patients' response rate for individual GPs

There was variation in the patients' response rate within practices. This might reflect the differences in practice attenders in different localities and practice organisation e.g. waiting time. Differential responding may have influenced some practices, e.g. patients who were relatively unhappy with the service may have expressed their feelings by not participating in the study (Pascoe 1983).

Characteristics of respondents and non-respondents

Non-respondents appear to be older, with more psychosocial problems, more anxiety, and more depression. This is only as analysed from the GPs' point of view (GPRQ) with the exception of patients' age. We have to be cautious about, these results, since the differences between the means are small, and the standard deviation is large.

In a follow-up study of depression in the community, Clark et al (1983) found that the mean depression level and ratio classified as depressed at the first interview were higher in non-respondents than at the second interview (using CSE-D scale), but the drop-out was mainly due to demographic factors, e.g. young male adult, low income. Their mean score were 9.0 for respondents and 10.0 for non-respondents, with a difference of 1 and $p=0.05$ (t-test). In this study the depression mean for respondents is 11.0 compared with non-respondents, which is 13.0 with a difference of 2 and $p= 0.02$ (Wilcoxon test).

From a postal survey study, no difference in response rate was found between high and low GHQ scores among women aged 40-55 years (Ballinger 1975). It would be useful to obtain more information about non-respondents' psychosocial problems and their satisfaction level if they were known, either by sending them questionnaires and/or interviewing them at home immediately after their visit to their GPs.

In this study the mean score for non-respondents given by GPs is higher for anxiety, depression and general psychosocial impression. The non-respondent patients might contain a high proportion of less satisfied patients than those with psychosocial problems.

General practitioners' characteristics

The GPs who participated in the study were mainly young and middle-aged. There were more females than males, with years of experience in the medical fields either as hospital doctor or as GP varying from two to 19 years. Half of the GPs had experience of a hospital psychiatric post, with five out of 12 having been

members of Balint groups. Nine of the GPs gave more time to those patients who have psychosocial problems, and six show a particular interest in psychosocial problems. Some of the GPs saw fewer patients during the study; this might indicate that those with low practice loads may work part-time or have other commitments outside the practice. Different GPs had different consultation times, which might reflect different practice lists, different patient demands, or different practice management or organisation. So the study population was different, GPs were different and practice organisation was different. GPs participating in the study were not a random sample.

Although the information presented above is derived from 12 practices in Glasgow, it may represent the real situation of different general practices in the UK i. e. different types of populations, and different practice organisation. This might enhance the generalizability of the findings of this study. It may be quite useful and interesting to compare these findings for those GPs who practise in a group outside a health centre, with those for GPs within a health centre and for single-handed GPs.

Distribution of questionnaires' scores and comparison with other work

Consultation satisfaction questionnaires (CSQ)

The positively skewed results for the consultation satisfaction questionnaires scores are similar to those reported in most patient satisfaction studies. This may reflect the true nature of patient satisfaction. It is important to consider that this represents the views of patients who completed the questionnaires, and not of those who either did not complete it or

refused to participate in the study. They represent a proportion of practice attenders, even regular attenders. This is a common finding in most similar studies.

The other major problem is that there is no cut-off point between satisfaction and dissatisfaction. In this study this has been overcome by looking at the mean scores for each group of patients and comparing them with the others.

By comparing our data with the data of the Bristol study, it has been shown that patients in this study are more satisfied with care provided than those in Bristol. In particular they are more satisfied with professional care, but less satisfied with depth of relationship. However, for Bristol patients the scores were high for depth of relationship and lower for professional care, which might reflect the difference in perception between the two populations. This indicates that GPs in this study are considered better at giving information and managing the patient as a person, but know less about their patients; and that patients have difficulty in conveying very important personal information to them when compared with the Bristol GPs as evaluated by their patients. It should be noted that the practice list in England is larger ($n=1945$) than that of Scotland ($n=1555$) (Fry 1993). Other reasons behind these differences in patients' satisfaction might be related to:

- patients' high demands and high expectations;
- differences in medical teaching methods;
- GPs' past educational experiences;
- differences in the orientations of GPs.

There is another possible explanation, which is that the prevalence of psychosocial problems and the participating factors in Bristol is higher than in Scotland. Alternatively the Bristol sample might contain a large proportion of patients who are willing to criticise their doctors.

Sociodemographic characteristics and satisfaction

In this study it has been shown that there is a positive correlation between age and satisfaction: as age increases patient satisfaction increases. The significant correlation in the DiMatteo et al (1980) study was less. This study's findings support the findings of others (Hopton et al 1993, Fitzpatrick 1984, Locker and Dunt 1978, Williams and Calnan 1991a).

The reason given is that elderly people are more aware of the improvement in health care, they have lower expectations, and they develop a closer relationship with their GP (Fitzpatrick 1984). They become more dependent on the care they receive and are more reluctant to criticise. They become generally mellow, accepting and less demanding (Hall and Dornan 1990, Zastowny and Roghmann 1983). In addition GPs have more positive attitudes toward older patients and provide them with more positive treatment (Hall and Dornan 1990). For female patients the reverse is true; this indicates that in total female patients are less satisfied (Williams and Calnan 1991a) .

In this study female patients were less satisfied with the time provided in the consultation. This indicates that as age increases female patients expect more from GPs in the consultation,

especially regarding time, while this is the opposite for male patients. This might be explained by the fact that female patients' expectations and demands become higher, or that they receive less attention and care from their GPs as they grow older, or, most probably, that they have a low tolerance threshold to minor life events. They have, or see themselves as having, more illness (Cartwright 1967, Cartwright and Anderson 1981). Their responsibilities may also become more difficult and intolerable for them, e.g. looking after other members of the family.

Morbidity of psychosocial problems in general practice and detection rate.

The results found in this study are not dissimilar to those found in other works (Wright and Perini 1987, Boardman 1987, Marks et al 1979, Crossely et al 1992). The sensitivity and specificity is higher for Glenrothes for two possible reasons: that different GP rating questionnaires have been used compared with Glasgow, or because of the involvement of a single GP with an interest in psychosocial problems.

The reason may be that Glenrothes' GP skills in detecting cases are high or that patients differ in expressing or presenting their problems.

The prevalence estimate varies among the three studies for different sex. It has been suggested that the variation is probably related to:

1. the GHQ
2. the settings of the study
3. the number of GPs involved in the study

4. the use of different criteria of caseness. (Boardman 1987).

Morbidity of psychosocial problems in general practice

There is a wide variation in morbidity between different practices as measured by the GHQ. This is mainly related to the differences in the prevalence of psychosocial problems between different communities and different populations.

Detection rate

The general practitioners missed approximately half the cases; this finding is similar to those reported by other studies (Goldberg and Bridges 1987, Boardman 1987, Jencks 1985, Marks et al 1978, Shiber et al 1990). The number of patients detected by both GPs and GHQ vary widely between different GPs. This result is similar to other studies' findings (Marks et al 1979, Boardman 1987, Goldberg et al 1992).

Patients' age and detection rate

By categorising Glasgow patients' ages into groups similar to those of the Lewisham study (Boardman 1987), case identification by both methods (GHQ and GP) was higher in the middle age groups, which is similar to their findings.

Detection rate and patient satisfaction

In this study patients who were suffering from psychosocial problems and those suffering from anxiety or anxiety-associated problems were detected by GPs (true positive). Their satisfaction increased, compared with those who had been missed by their GPs (false negative). The differences are highly

significant for both groups, while those detected by GPs as having depression or associated depression had a satisfaction level similar to those missed. Those patients who were identified only by GPs as having psychosocial problems and anxiety (false positive) were more satisfied than those who were considered as normal (true normal), and the difference is highly significant. However, patients considered as having depression (false positive) or associated problems were less satisfied compared with those who were considered as normal. This may reflect the complexity of this disorder, the associated physical and social events, and the possibility of the presence of a high proportion of women within this group.

This shows that patients with minor psychosocial problems were more satisfied than those with major problems. These former groups benefit more from identification of their problems and they represent the majority of patients with psychosocial problems in general practice (Goldberg 1992).

There are patients who have an associated psychosocial problem as a result of their physical illness. These patients might or might not benefit from the identification of their psychosocial problems, or they might be dissatisfied because the identification of psychosocial problems may be seen as a failure of the GP to manage their main physical problems.

Detection rate and CSQ subscales

The importance of components of the consultation is different for different patients with psychosocial problems. It might be

different for specific types of psychosocial problems. The importance of different dimensions of the consultation is related to the type of patient and to the type of the disease.

Professional care

The high score given to professional care by all patients may be explained by the fact that this dimension possibly reflects the total GP performance in the consultation. Alternatively, it may be either because patients feel that they cannot judge such care well or because it is threatening to contemplate that care in this area is not the best (Hall and Dornan 1988 b).

Patients who were identified by GPs as having psychosocial problems (false positive) are more satisfied with professional care than those considered as normals (true negative). This group of patients could be considered to have minor and transient psychosocial problems. Patients who have a controlled chronic psychological illness might fall into this group. The expectations and demands of these patients are probably fulfilled by either examination, provision of treatment, or by giving them advice.

Depth of relationship

In this study depth of relationship was found to be the most important component for patients with psychosocial problems.

Regarding differences, the depth of relationship is significant for all patients identified by GPs as having psychosocial problems. This indicates that patients with psychosocial problems are more satisfied with the depth of relationship than those missed or identified as normal by GPs.

True positive female patients appear to be different from the other groups, since they do not show any significant difference in satisfaction. This may be related to their sex or the type of problem they have, or it may depend on their expectations and demands. This group of patients needs to be studied in greater detail.

Perceived time

Time provided in association with GP skills is an important factor in detecting and developing a good relationship with patients, especially those with psychosocial problems and female patients. There are time-constraints in general practice and different GPs possess different skills and interests. Some GPs have the ability to use the limited time efficiently while others do not.

In this study female patients in general were less satisfied with time compared to male patients. There is a limitation to the results of this subscale, since only one item was included for the purpose of this study. This might reflect the weakness of analysis for a single item dimension. More information could have been obtained if all items of this dimension had been included.

General practitioners' and patients' characteristics , detection rate and patients satisfaction

(A) Detection rate

A high proportion of female patients scored high on GHQ compared to male patients. Similarly a high proportion of female patients were identified by GPs as having psychosocial problems. Since women have a tendency to report problems more openly than men in an interview (Briscoe 1987), these findings coincide with

those of other studies (Tarnopolsky et al 1979, Boardman 1987, Wright and Perini 1987).

The prevalence of psychosocial problems among male patients attending female GPs is high. This can be explained by the fact that patients with psychosocial problems attending GPs of the opposite sex may have been looking for solutions to problems related to a partner of the same sex as the GP. Alternatively, they might not have wanted their problem to be acknowledged by a GP of the same sex. Male GP's detected more male cases, but the opposite was true for female GPs. Overall, female GPs detected more cases. GPs of both sexes missed more cases among patients of the opposite sex than among those of the same sex as themselves.

This may indicate that GPs are more likely to understand and share the problems and feelings of patients of their own sex.

In this study patients came from different practices and do not represent a group of GPs from the same practice. Also patients were free to choose the doctor they wanted to see.

It would be interesting to study those patients who asked to see GPs of their own or of the opposite sex. Is this behaviour related to their illness?

(B) Patient satisfaction

Generally GPs have the skills and the ability to improve patient satisfaction by improving the depth of relationship with patients. Female patients with a psychosocial problem show no difference in satisfaction, whether the problem has been identified by a male or a female GP. This indicates either that a female patient

with such a problem is difficult to satisfy, or that they need more special skill and more time, or that their problem may differ from those of other patients.

Patients of both sexes were more satisfied with the professional care and depth of relationship provided by male GPs.

Patients identified by male GPs only (false positive) were more satisfied compared with normal patients. This might indicate that male GPs encountered less serious cases, in whom detection led to more satisfaction. Alternatively patients with less serious problems are perhaps easier to satisfy compared with those with severe disorders who consult female GPs. Other explanation for this:

- a greater ability to develop and improve the doctor-patient relationship;
- may provide more time for patients with continuous follow-up;

(C) GPs' age, detection rate, sex and patient satisfaction

Younger GPs with less experience are more sensitive in identifying psychosocial cases. These findings are not consistent with Marks et al (1979), they found that detection rate are higher for older and more experienced GPs. In their study more detailed analysis showed that such doctors asked more questions with a psychosocial content, avoided technical jargon, were more likely to be more settled in their practice and possessed higher qualifications. This might be related to the difference in number of GPs involved.

Satisfaction is greater among all patients identified by all GPs (true and false positive) but the difference is significant for patients seen by younger GPs, and similar results were found in other studies (not specific to patients with psychosocial problems).

The reasons might be that less experienced or younger physicians have been shown to display more competence, technically and interpersonally and to conduct longer visits (Hall et al 1988 c).

Suggested explanations are: that such physicians engage in more of the types of behaviour that promote satisfaction than more experienced ones, that younger physicians possess more recent, and better, training (especially interviewing skills); that they may have a less-demanding time schedule; that they are conscious of being evaluated by their superiors; and that they have not yet become cynical or 'burned out'.

3.14. Conclusions

The estimate of psychosocial problems among general practice attenders and frequency of GPs' detection rate is similar to that of other studies.

The findings of this study show that patients appreciate recognition of their mental status by GPs. Depth of relationship is considered as the key element for identification of psychosocial problems. Male patients benefit more, compared with female patients. Female GPs detect more cases, which demonstrates their ability or the characteristics of patients they normally see. Younger GPs possess the ability to detect more cases and satisfy their patients.

3.15. Recommendations

1. This study has shown the benefit and the importance of identification of psychosocial problems in general practice and its influence on the outcome. This reflects the need for more adequate training programs for undergraduate and postgraduate medical professionals in this area.
2. The study demonstrates the need for GPs to improve their skills and knowledge in how to improve doctor-patient relationships and how to detect psychosocial problems. This will prepare young GPs to cope with the new trend of increasing psychosocial problems in the community and among general practice attenders.
3. More work is needed to compare the behaviour of male and female GPs in the consultation and to compare those differences with patient satisfaction.
4. A better understanding of the preferences in the consultation of patients with psychosocial problems, especially female patients and those with depression, is needed. A method of videotape analysis of consultations, aided by patient-satisfaction assessment is a possibility.

Chapter 4. Does the presence of a desktop computer affect patient satisfaction with consultation in General Practice ?

Summary

A questionnaire surveying patient satisfaction (CSQ) with consultations was carried out to assess how this might be affected by the introduction of a multi-user desk-top computer system. The survey was carried out in a rural training practice of 5,900 with five full-time partners. Patients' opinions were sought the week before installation of the computer system, six weeks after installation and six months after the installation. The CSQ questionnaire considered not only the overall satisfaction score, but also the following subscales: general satisfaction; professional care; depth of relationship; and perceived time. The initial survey revealed that 22.6 % of patients considered it was a bad idea for doctors to have a computer on their desk, but this fell to 14.4 % six weeks after, and 11.7% six months after its arrival. No differences were found between any of the satisfaction subscales between baseline, the six-week, and the six-month follow-up.

Larger studies may perhaps be needed to define problems leading to impaired patient satisfaction when GPs use desk-top computers in their consultations.

4.1. Introduction

4.1.1. Computers and general practice

Almost 85% of general practices are computerised and 50% of GPs use desk-top computers (GMSC 1992). In the long term it is hoped that improved information available to doctors during consultations will raise standards and improve efficiency in consultations (Mugford et al 1991, Pringle 1990, Pereira Gray et al 1994, Handysides 1994, Irvine 1990).

The relational databases which are used in general practice computing allow integration, analysis and retrieval of the information needed in a short time, and in an effective way. Computers can be used to produce prescriptions faster, with clear and improved information, and to reduce queries from the pharmacist (Roland et al 1985). They can also be used to develop an age-sex register, for patient recall, adequate record-keeping, and they help in effective management of chronic illness in the community, which is increasingly shifting from hospitals to General Practice. The computer has been used:

- as a diagnostic aid to improve the quality of care offered by the doctor;
- to augment clinical management;
- in the implementation of preventive strategies;
- to improve practice organisation.

Other possible uses include linkage with hospitals, with other members of the primary care team and with other health services (Brown 1988), with the advantage of showing the full picture of patient care (Mugford et al 1991) and the improvement of communication with clinical colleagues (Jones 1986). Another important advantage is the development of computer-based

protocols for clinical care (Chan et al 1988), with improvements in standards of care, by comparing them with similar protocols from other practices. It has been shown that the recording of illness on computer can be accurate and complete, provided that specific guidelines are used for data entry (Nazareth et al 1993). Unfortunately, studies have shown that data were incompletely recorded in computers (Mant and Tulloch 1987, Jick et al 1991). Pringle and Hobbs (1991) regarded this as one of the main deficiencies in the software supplied by the computer companies.

It is time to reconsider the impact that the use of desktop computers is having on the consultation. The main drawbacks are a loss of confidentiality (Pringle et al 1984), time consumption (Pringle et al 1986), the need for expert software developers, cost and maintenance.

One of the most important components of general practice is the relationship between doctor and patient. Through this relationship a decision will be made by the patient to follow the doctor's advice, to comply with treatment, to attend for follow-up consultations, and finally to be satisfied with the consultation.

Factors which influence this relationship include the time spent with the patient and the ability of the doctor to listen and pay attention. The presence of a computer during the consultation may affect these factors, leading to a lessening of the "intimacy of the consulting room", which both parties would like to preserve. Doctors might devote too much of the consultation time to the computer and patients might be more reluctant to speak frankly about their personal matters, and as a result a

"hidden agenda" might be missed.

Studies have attempted to measure the effect of the introduction of a microcomputer upon patient satisfaction. Cruickshank (1984) found that 23 per cent of patients would not be comfortable if they saw a computer in the surgery and over 50 per cent of patients thought the personal touch would be lost with a computer in use. Cruickshank showed that the presence of a computer produced undesirable effects on the level of patients' post consultation stress (Cruickshank 1982) ; but Pringle et al found that computers had no effect on patient stress (Pringle et al 1985a). Pringle et al also found the presence of a computer had a beneficial medical effect on the consultation, by increasing the proportion of topics initiated by the doctor. These topics replaced some of the normal social and patient- initiated medical exchanges (Pringle et al 1985b). In another study they found that, although the computer affected the consultation by increasing the amount and length of administration, it may have had the advantage of reminding the doctor of appropriate preventive activities (Pringle et al 1986).

4.1.2. Patient satisfaction and the consultation

Several techniques to measure satisfaction with consultations in primary care have been shown to be reliable and valid (Baker 1990 a, Wolf et al 1978, Ware and Hays 1988, Zyzanski et al 1974, Dimatteo and Hays 1980). The questionnaire chosen for this study was designed to measure patients' evaluations of the individual interviews with doctors which were used to assess patient satisfaction before and after the arrival of a desktop

computer in a single practice. It took advantage of the "natural experiment" occurring in many surgeries in the UK at present whereby many GP's are introducing computers into the consultation room.

4.2. Objectives

1. To describe patients' satisfaction before, during and after the arrival of a desktop computer.
2. To identify patient characteristics e.g. age, sex, which influence satisfaction in association with the presence of a desktop computer.
3. To describe differences in patients' attitudes in relation to the presence or absence of a desk- top computer in the consultation.
4. To assess the effect of a desk- top computer on general practitioner paperwork in the consultation.

4.3. Patients and methods

4.3.1. Sample size

Calculating the sample size for this study was achieved by applying the data from the pilot study to a nomogram (see Chapter 3, page 79, 3.6.2.). The CSQ total score is 90. We postulated that an extra increase in satisfaction in the group of 4.5 (5% increase in satisfaction score) on average would be an important difference and we wanted a high probability of detecting a true difference at least that large.

The standard deviation available from the pilot study of 11 patients in a single practice was 8.9. So according to the standard difference formula:

standard difference = relevant difference/standard deviation

$$\text{standard difference} = 4.5/8.9 = 0.51$$

For the nomogram to achieve a 90% chance of having the specified difference of 4.5 significant at the level 0.05, we would need a total of about 85 adult patients in each group.

4.3.2. Patients (Figure 15)

In order to allow for an expected large drop-out rate in the second and third phases of the study, 300 questionnaires were distributed. These were applied to adult patients, aged 16 years and over, when they registered with the receptionist before seeing the doctor, at every morning and evening surgery, before, six weeks after and six months after the changeover. Each consecutive adult patient was asked to fill in the questionnaires

at the end of the consultation and to put the completed questionnaire in a box provided.

4.3.3. Materials

Consultation satisfaction questionnaire (Appendix 1)

see Chapter 2, 2.1., page 41.

4.4. Confidentiality

see Chapter 2, 2.9., page 63.

4.5. Main outcome measures:

see Chapter 2, 2.1.3., page 42.

4.6. Data cleaning process

Questionnaires were included if they fulfilled the following criteria:

1. CSQ - at least 16/18 questions completed
2. Patients aged 16 years and over
3. Last visit to GP within 12 months.

Checking data.

The data were entered on an Excel database, using an Apple Macintosh microcomputer, for later analysis using SPSS. For the uncompleted questionnaires, a special code was used for the missing values. A frequency distribution was done for each variable to detect abnormal values, and to obtain a good, basic look at the data. A general idea of how many missing values there were obtained with a frequency histogram.

4.7. Statistical methods

Descriptive analyses were performed to describe the characteristics of the study subjects (mean and standard deviation). For further analyses the variables were examined for their approximation to normality by inspection and using the normality test (Statworks 1985). Thereafter the appropriate parametric or non-parametric tests were applied. The type of analyses considered were those designed to fulfil the objectives of the study.

4.8. Results

4.8.1. General practitioners' response rate (figure 16)

Letters were sent to VAMP, GPASS, and AAH Meditel Ltd, asking them for the names of practices which were most likely to install computers in the consultation room in the near future in Scotland. GPASS suggested including a short item about the project in their newsletters to GPs (Appendix 9). The short item was included with the May and September 1992 issues. A reply was received from nine GPs who were interested in the study. Two GPs were approached directly. More information about the study was mailed to all those who were interested. Seven GPs could not participate, two of these were already computerised, three decided not to participate after further discussion with their partners, two GPs decided to install the computers after one year. Four GPs agreed to participate. One GP dropped out because of fund-holding problems. Two practices completed the first phase of the study and then decided to pull out, one because of expecting more delay with installation, the other because the practice was being moved into another building. By the end of July 1993 only one practice had completed the study.

4.8.2. Patients' response rate

300 questionnaires were distributed in each phase of the study. 71% of these were returned during the first phase, 86% during the second phase, and 78% during the third phase. The number of completed questionnaires of those distributed during the three phases were 55%, 75% and 64% respectively, Table 21.

4.8.3. Distribution of CSQ scores

The distribution of the consultation satisfaction questionnaire scores is shown in Figure 17; the scale ranges from 0 to 90. There is a positive skewness to the distribution. Most scores lie in the range 61-70, which represents 41.6%, 49.6, and 40.1% of the scores for the three phases respectively. The CSQ mean scores and standard deviation for the three phases are 67.4 (8.6), 67 (9.3), 65.7 (10.1) respectively.

4.8.4. Characteristics of those who completed the questionnaires and those who did not

Data from the CSQ were examined to detect any significant differences in:

- age, using t-test;
- sex, employment status, last visit to practice, attitudes to prescription, and presence of a desktop computer in the consultation room, using chi-square test.

There were significant differences in CSQ scores between age, sex, and occupational status. A large proportion of older patients, and a minority of housewives and students did not complete the questionnaires (Table 22).

4.8.5. Patients' age and sex

Respondents' age was divided into five age categories 16-24, 25-34, 35-54, 55-64, and 65-100. Figure 18 shows the respondents' age and sex distribution. This describes a population which is mainly middle-aged or younger, with a predominance of females. Figure 19 shows the respondents' age distribution compared with data for the Scottish population (NHS 1992). This shows a

similarity between the two populations, except for patients aged 65 and above. The proportion of this age group is higher than that of the general Scottish population.

4.8.6. Occupational status

Table 22 shows the occupational status of the study sample. It shows that 9.3% of patients were unemployed and 6.4% were retired. Morris and Carstairs (1991) have shown that the percentage of unemployed and those who are retired in the Scottish population are 12.4% and 22.3% respectively. This shows that unemployed and retired patients under-represented in the study.

4.8.7. Last visit to practice

The majority of the patients' last visits to the practice were within days and weeks (93.8%), table 22.

4.8.8. GPs paperwork

Patients' perception of the GPs' amount of paperwork within the consultation was not affected by the presence of a desktop computer. Six months after the introduction of a desktop computer, 3.2% of patients noticed that GPs spent a great deal of time on paperwork, compared with 4.3% before installation, Table 24.

4.8.9. Patients' attitudes to computer and age

There was no age difference regarding the group of patients who were in favour of the computer (mean 36.6, sd 14.1) and those who were not (mean 37.4, sd 16.3). The sex ratio was the same

for both groups (M:F, 37.1: 62.9) and (M:F, 32.6: 67.4) respectively, Table 23.

4.8.10. Patients' attitudes to computer

Table 25 shows the number and percentage of patients who said that having a desktop computer was a good idea and the number and percentage of those who did not. Patients' attitudes to the computer changed once it actually arrived on the doctor's desk. 22.6% of patients did not relish the prospect of the computers, stating that they "did not think that it was a good idea for the doctor to have a computer on his desk" but 85.4% liked it six weeks after it had arrived and 88.3% liked it six months after its arrival, see Table 25. The difference is significant ($p=0.02$, using chi-square test). The initial dislike was virtually eliminated by the arrival of the computer.

Comments

The following are examples of different types of positive and negative comments made by patients regarding the presence of a computer in the consultation:

Positive comments

- *Doctors who may find a computer more convenient or more efficient. In updating medication or notes, it would be a good idea.*
- *May contribute to a better diagnosis.*
- *Would give immediate background on patient.*
- *Could enable doctor to look up your medical history quickly before you enter the room.*

- *A computer is a valuable asset for a doctor. A whole range of relevant information at close hand is essential.*
- *Saves time for doctors.*
- *Very efficient. No time wasting. Very helpful.*
- *Saves paperwork.*
- *Easier to find files.*
- *Speeds up the system.*
- *Doctor can consult a certain file just by punching a few buttons.*

Negative comments

- *Computers are impersonal.*
- *Do not think it is necessary.*
- *It may lead to people finding out confidential information due to computer-hacking.*
- *Rather impersonal.*
- *I like the personal touch and not too much technology.*
- *Too impersonal. I would find it very off-putting if the doctor was keying information into a computer as I was speaking.*

4.8.11. Patient satisfaction

Table 26 shows CSQ mean scores for each age group of patients for the three phases. The CSQ mean scores decreased in the second and the third phases for the first and second age groups of patients. The differences in the CSQ mean scores between the first age group (16-24) for the three phases were not significant. The same is true for the second age group (25-34). For the first age group p. value was 0.18, and 0.37 for the second age group.

Table 27 shows no significant difference in the CSQ mean scores for male patients within the three phases ($p=0.77$). The same is true for female patients ($p=0.21$).

Table 28 shows mean and standard deviation (sd) for the CSQ total and subscale scores for the three phases. P. values were calculated using the Kruskal-Wallis test, since the distribution of the scores was not normal. It showed no significant differences between the results of the three phases. At the same time a wilcoxon test was performed to detect any significant differences between phase one and two, phase one and three, and phase two and three. No significant differences were detected.

Table 29 shows mean and standard deviation (sd) for the CSQ total and subscales scores for the two groups of patients, those who said having a computer was a good idea, and those who said it was a bad idea. P. values were calculated using the Wilcoxon test, since the distribution of the scores was not normal. The differences were highly significant regarding GP professional care ($p=0.006$), depth of relationship ($p=0.0001$), and total CSQ scores ($p=0.0005$). They were not significant for general satisfaction, $p=0.09$ and for perceived time ($p=0.11$). Patients who said the computer was a bad idea, were unhappy with professional care and depth of relationship.

More analyses were performed by comparing the CSQ mean scores for the three phases for each patients' characteristics i.e. sex, occupation, last visit, time spend on writing. A significant

difference was found ($p=0.01$) only for patients who said that doctor spends too much time writing notes and making out prescriptions; the number of patients in each group was less than 13.

4.9. Discussion

This was a prospective study measuring patient satisfaction in the consultation as a result of the introduction of desk-top computers. It was carried out on an opportunistic sample of patients attending unselected consultations in a single practice.

General practitioner response rate

In spite of the simplicity of the method, only one practice completed the study.

Reasons given by some GPs were:

1. Organisation difficulties, regarding fund-holding.
2. Disagreement between GPs.
3. Uncertainty about the time when the computer would be installed in the consultation rooms.

Other possible reasons were:

1. The method used to approach GPs in this study was indirect i.e. through a third party (GPASS). Direct contact with GPs would perhaps be a more successful method.
2. The interest of GPs in computers and patients' satisfaction.
3. The limited time of the study.
4. GPs felt threatened by the satisfaction questionnaires.

Patient response rate

The response rate increased in the second and third phases compared with the pilot study. This was most probably due to the information attached to each questionnaire for each phase. The other reasons were most probably due to the adjustments needed

by the receptionist to cope with this extra work. Lastly it may be related to the type of patients: in this practice most patients were in early middle age and younger. It has been found that elderly people are reluctant to participate or to complete questionnaire. The reasons for this are:

1. reading difficulties
2. difficulty in understanding the questions.

Consultation satisfaction questionnaires.

The particular questionnaire used was chosen in preference to others primarily because it did not draw the patient's attention to the computer by relating every question to it. For example, instead of a question such as "Computers will mean that you see even less of the doctor than before" (Cruickshank 1984), it allowed for a more objective response by asking "I feel the doctor did not spend enough time with me".

Distribution of CSQ scores

In this study the scores distribution was nearly normal compared with that of the psychosocial study. This may be as a result of using the 18 items of the CSQ with an additional subscale (general satisfaction) compared with the 8 items used in the previous study.

Method

A short interval was used between the first and second phase in order to detect early changes in the patients' reaction to the use and presence of the computer in the consultation room, where GPs

were just starting to learn, and adjust the consultation and their style to the new technology.

The third phase was initiated after an interval of six months, to detect changes where the use of the computer reaches its maximum level (Herzmark et al 1984). A similar control practice could have been included from the same area for comparison. This would be more important if we found a decrease in patient satisfaction.

Last visit to practice

The patients were asked about their last visit to detect those who had not visited the practice for more than one year, and those who were visiting the practice for the first time. These patients were few in number and most stated that they could not give their opinion.

Questionnaires belonging to these groups were eliminated. This question is mostly important for the first and second phase patients, to identify the proportion of patients who experience the consultation with no computer and those who experienced both the first and second phases of the study. However, the majority of patients in each phase had still visited the practice within one month. Although it might be desirable on theoretical grounds to have the same group of patients in all three phases, this was impracticable.

GPs paperwork

A comparison of the first and third phase shows a decrease in the consultation paperwork from the patient's point of view, but it was not significant. This may mean that the presence of the

computer has no obvious effect on paperwork from the patient's point of view. These findings were similar to that of Herzmark et al (1984). A change might be noticed with prolonged use and with the change in the way information is to be recorded.

It is important to consider the effect of the following factors on the patient point of view:

1. type of illness;
2. expectation;
3. experience.

The effect of these factors is supposed to be eliminated by using the same method and same practice, with no or limited change in doctor, patients and organisation.

Patient age, satisfaction and attitudes to computer

There was no difference in age between those patients who said the presence of a computer was a good idea and those who said it was a bad. The same is true regarding sex. Differences were noticed when patients age was divided into five groups. In an other study it was found that women and elderly patients were unhappy with the computer (Cruickshank 1982, 1984). The difference between the results of the two studies may be related to the difference in the:

1. instrument used;
2. setting of the study;
3. type of population;
4. method used;
5. type of analysis.

Characteristics of those who completed the questionnaires and those who did not

Those who did not complete the questionnaires were older, more likely to be female than male, less likely to be employed and students and more likely to be housewives and retired.

This indicates the possibility that they were in a hurry after the consultation (housewives), not interested, unable to read, or needed an assistant to help in understanding some of the questions. For this group the reason for not completing the questionnaires might be unhappiness with the presence of the computer. Again, it would be interesting and important to find out their point of view, since patients above the age of 64 years represent a large proportion in this group. A minority of patients in this age group were represented in the study.

Patients' attitudes to the presence of a desktop computer

Attitudes were looked at using two different methods:

1. Asking direct questions with a "yes" or "no" answer.
2. Indirectly, by examining at patient satisfaction regarding the content of the consultation, since it is supposed to be affected.

Regarding direct questions, it has been found that as time passes patients' negative attitudes change. Different reasons might be behind this:

1. As time passes GPs become more expert and quicker in using the computer.
2. Patients who were unhappy attend less frequently.

3. Patients get used to the new technology.

Patient satisfaction

The results show no significant difference in satisfaction regarding the content of the consultation in terms of general satisfaction, professional care, depth of relationship, and perceived time between the three phases. This finding is similar to that of other studies (Pringle et al 1985, Brownbridge et al 1985, Legler and Oates 1993).

It is essential to have discriminating questions in addition to the satisfaction questionnaires in order to identify specific groups of patients. Comparisons can be made to identify important areas affected in the consultation related to this particular group. Pringle et al (1984) looked at four different areas: confidentiality, impersonality, economy, and general anxiety. Cruickshank (1982) looked at the effect of patients' arousal and stress. In this study two questions were included:

1. GP workload (from patient point of view) "Do you think the doctor spends too much time writing notes and making out prescriptions?".
2. attitude to the computer ("yes" or "no" question) "Do you think it is a good idea for the doctor to have a computer on his/her desk?".

Regarding the first question, most of the patients found no difference in workload due to the presence or absence of the computer. Other studies (Herzmark et al 1984) using the point of

view of doctors, have found that more time was devoted to record keeping than before with an increase in the consultation time.

In this study there was no change in the scores related to perceived time in the three phases, indicating that time devoted to patients did not change.

Regarding the second question, a comparison of satisfaction was performed for those patients who said "good idea" and those who said "bad idea" about the computer. Patients who said the latter were less satisfied with professional care and depth of relationship. It may be important to look at other factors related to this group of patients e.g. type of illness, personality, attending frequencies, psychosocial problems, etc., and to compare these findings.

The general practitioner point of view was not looked at in this study for the following reasons:

1. A similar instrument to measure GPs' point of view did not exist.
2. A simple method was agreed upon to improve practices' participation rate.
3. Lack of time.

The effect of different computer systems used and different machines needs to be considered, and at the same time we should appreciate that different patients have different demands in the

consultation i.e. these results need to be repeated in other settings before their true impact is known.

The change in the total patient satisfaction scores and in subscales might not be related to the presence of the computer alone. Other factors which might affect patient satisfaction have to be considered such as patient disability or severity of illness, psychological stress and general life satisfaction, previous satisfaction with a practitioner or health care facility, and other characteristics of the health system (e.g. waiting time, continuity of care) (Like and Zyzanski 1987).

4.10. Conclusions.

1. There was an increase in acceptance of the desktop computer by patients with time.
2. The effect on age was not relevant, and no difference in sex in relation to attitudes to the computer was found.
3. There was no effect on the GPs' amount of paperwork was noticed by patients.
4. No change in patient satisfaction after the introduction of the computer.
5. Patients who were unhappy with having a computer in the consultation were less satisfied with the depth of relationship and professional care .

4. 11. Recommendations

1. Specific studies are required to look at factors related to patients in term of illnesses which affect their satisfaction in the presence of a desk-top computer.
2. More detailed studies of specific difficulties experienced by doctors and patients are still required. This may involve testing a number of methods of altering consulting room layouts and the structure of consultations to optimise the benefits to patients and their doctors.
3. If further studies confirm the lack of major problems with the introduction of desk-top microcomputers, then general practitioners and patients can be reassured that the intruder on their desk does not pose a substantial threat.

Chapter 5. An audit of surgery satisfaction in Lanarkshire

Summary

An audit of surgery satisfaction was carried out to investigate whether audit can improve patient satisfaction.

7210 adult patients from 11 general practices (two with branch surgeries) in Lanarkshire were involved. Questionnaires were distributed at the time of attending (n=4710) or by post to non-attenders (n=554) and diabetics (n=1946). The SSQ examined the following dimensions of the primary care: continuity of care, access, medical care, availability, and general satisfaction.

4014 patients completed the questionnaires, with a response rate between 23.8-100% in different practices. Sex ratio and age distribution for attenders were similar to that of the practice population. Characteristics of non-attenders in terms of age and sex were similar to those of other studies done in general practice. Diabetics were older, with a greater proportion of males. The characteristics of respondents and non-respondents for non-attenders and diabetics in terms of age and sex were the same. The response rate was higher among attenders and diabetics compared with that of the non-attenders, which reflects the difference in behaviour of this group.

Overall, no difference in patient satisfaction was detected by comparing the results of the first and second phases. Differences were detected, however, when comparisons were made for

individual surgeries. Some surgeries have shown a significant increase in patient satisfaction in certain areas. More significant changes in satisfaction regarding general satisfaction, continuity, access, medical care, premises, and availability were found when practices changed practice organisation in the light of evidence from the first data collection.

The work has shown that it is possible to use the SSQ for audit of services provided by general practice. The results obtained were useful to the doctors in improving their practices. It is also suggested that it might be useful to audit certain areas more deeply to explore hidden causes. The availability of such readily-collected data would be of value to the participating surgeries and also for others who are interested.

The limitation of improvement in patient satisfaction in spite of changes may reflect the inappropriateness of the solutions applied to overcome these deficiencies, limitation of time and lack of resources. It might still be possible to detect significant improvement in the most criticised areas with the development of effective and practical guidelines, with more time and resources.

5.1. Introduction

5.1.1. Historical background

One of the earliest examples of audit can be found in the work of Florence Nightingale as quoted by Crombie et al (1993). During the Crimean war in 1854 it was found that the mortality of soldiers in British hospitals was high compared with that of French soldiers. As a result of the political row which followed, a team of nurses lead by Nightingale was sent to the military hospital in Scutari. She found that hospital lavatories were flooded with sewage, the water supply was contaminated, linen was filthy and there was a shortage of medical and surgical supplies and edible food. The cause of these problems was a chronic shortage of money, and the division of responsibility among three agencies who wanted to deny the existence of the problems. To improve the conditions she started building confidence between her team of nurses and the doctors. She also documented the conditions in reports to influence and to persuade local and higher authorities of the need for change. As a result of this effort the mortality rate had fallen from 40% to 2% within a period of six months.

The Nightingale example illustrates the basic features of modern audit:

1. identifying an obvious area of concern;
2. documenting deficiencies in the delivery of care;
3. identifying required action;
4. use of the documented evidence to support the case for changes in practice.

Development of the theoretical base of audit was taken forward in 1916 in the United States by J. G. Browman (Lembcke 1967), who carried out a large survey of selected conditions; a set of criteria which constitute good management were specified in advance. The management of individual patients was then compared against these criteria. The survey identified those hospitals which were unable to meet the criteria of good care. The list of the names of these hospitals was burned to keep it from the press. As a result of this, the Hospital Standardisation Program was established; as a result of the success of the Program it was expanded to include other medical colleges and the health care profession, forming the Joint Commission on Accreditation of Hospitals. In 1966 the level of standards was changed to specify an optimal achievable level.

The second example has illustrated two important themes of audit:

1. standards defined in advance;
2. awareness of the confidentiality of information.

Both examples emphasise the importance of starting work on a small scale.

5.1.2. The development of audit in general practice

General practice audit was started in the early 1970s, mostly by academic departments and interested GPs (Hughes and Humphrey 1990, Shaw 1980). The outcomes of this work were mainly related to data collection and interpretation, measuring performance and describing practice (Webb et al 1991).

In 1980 the Royal College of General Practitioners took the initiative in the quality of services in general practice. In 1985 it issued its policy statement "Quality in General Practice". In 1989 the Department of Health introduced the White Paper "Working for Patients". It stated that all doctors should become involved in audit.

5.1.3. What is audit?

Audit is defined in different ways but none of the definitions seem to cover all the properties of audit (Crombie et al 1993). A precise definition of audit is influenced by the person who controls the activity (Gillam 1991). However, the definition should include the purpose, method, area of investigation and remedy of problems (Crombie et al 1993). The following definition fulfil this criteria (NHS 1993):

"Clinical audit is the systemic and critical analysis of the quality of clinical care. This includes the procedures used for diagnosis and treatment, the associated use of resources and the effect of care on the outcome and quality of life for the patient."

Audit may share some research techniques such as survey samples, questionnaire design and statistical analysis. It differs in the sense that it compares performance against standards, examines the whole work conducted by clinicians, and involves simple data collection; the process is ongoing and continuous, results are fed back for discussion and for appropriate changes and the results apply only to the population examined.

There is agreement that the main aim of audit is to improve the quality of medical care (Baker 1990 b, Shaw and David 1989, Leavey et al 1989).

Good audit require: the consideration of confidentiality of participating practices and the information collected; the involvement of all members of the team; the selection of few important areas in the field and choosing the most valuable one for audit (Baker and Presley 1990).

5.1.4. Audit and patient satisfaction

The patient's point of view has become an important issue in the improvement of primary care. Involvement of patients is emphasised by the patient's charter (HMSO 1991). At the same time support has been given to the importance of clinical audit (NHS 1993) and to involving patients as contributors to and as a reformer of primary care at several levels (Donabedian 1992). Several methods have been adopted:

1. suggestion boxes;
2. patient groups;
3. questionnaires (Whitfield and Baker 1992, Hughes and Humphery 1990).

Patient satisfaction questionnaires can be used as an audit tool to assess various aspects of primary care.

The evidence that patient satisfaction is considered an important part of a medical audit (Whitfield and Baker 1992) will stimulate many GPs to take part in a survey.

5.1.5. Conducting an audit of patient satisfaction in general practice.

Identifying the problem

If we consider, for example, the question: "How would a practice know that they are giving enough appointments?" the issue of patient satisfaction is raised. Thus the first step is to identify and confirm the existence of such a problem by collecting data using a valid and reliable satisfaction questionnaire (Whitfield and Baker 1992) and analysing the collected data.

Identifying the reason for the problem

If patients are dissatisfied (or less satisfied) with the appointment system, the next step will be to identify the root causes of the problem, which may involve additional data collection in terms of qualitative data or specific questions. Audit is an evolving process and the findings at one stage can determine what needs to be done at another.

Implementing the solution

Identifying the underlying causes of the deficiency is an important factor in suggesting a remedy. The changes should stem directly from the root causes of the deficiencies. It is important for effective implementation that the staff agree that the problem is an important one, that they agree on the standards, and lastly that they are involved in the development of solutions. In this way they can be made responsible for the success or failure of the audit.

Audit of surgery satisfaction questionnaire

This study was conducted by following the basic audit method of identifying the area of deficiency in general practice for a group of practices in Lanarkshire. It used the surgery satisfaction questionnaire (Baker 1991 a), and provided practices with feedback to implement changes and to close the audit loop by assessing the effect of changes made.

5.2. Aims and Objectives

Aims

1. To offer interested practices in Lanarkshire the opportunity to audit patient satisfaction.
2. To investigate whether audit can improve patient satisfaction.

Objectives

1. To complete the audit cycle using the SSQ to identify areas for improvement among surgery attenders, non-attenders and those known to have a chronic disease e.g. diabetes.
1. To compare the responses of attenders, non-attenders and those known to have chronic disease e.g. diabetes.
3. To identify other areas important to patients not included in the questionnaire.
4. To look at patients' characteristics in relation to services.

5.3. Patients and methods

5.3. 1. Pilot study

A pilot study was conducted to:

1. identify the sample size needed in order to detect a change in patient satisfaction;
2. identify problems and difficulties;
3. improve and simplify the method;
4. improve the response rate.

The pilot study was divided into two parts. In the first part the researcher distributed the questionnaires to consecutive attenders for a period of one week. In the second part the receptionist distributed the questionnaires for the same period in the same practice.

5.3.2. Sample size

Calculating the sample size for this study using data from pilot study in the nomogram as explained previously (see Chapter 3, page 76, 3.6.2.). The SSQ total score is 85. We considered that an extra increase in satisfaction in the group of 4.3 (5% increase in satisfaction scale) on average would be an important difference and we required a high probability of detecting a true difference at least that large.

Standard deviation available from the pilot study of 56 patients in a single practice is 7.18. So according to the standard difference formula

$$\text{standard difference} = \text{relevant difference} / \text{standard deviation}$$

$$\text{standard difference} = 4.3 / 7.18 = 0.59$$

To achieve a 90% chance of having the specified difference of 4.3 significant at the level 0.05, we would need a total of about 60 adult patients in each group.

5.3.3. Patients (see Figure 20)

Three groups of patients were selected from each practice: attenders, non-attenders, and diabetics.

Attenders

Questionnaires were distributed by the receptionist to 200 consecutive attenders aged 16 years and over, while waiting to see the doctor at every morning and evening surgery, over a one- to two- week period. The patient was asked to complete both sides of the questionnaires and to put the completed questionnaire in a box provided.

Non-attenders

The practices were asked to record names and addresses of all patients aged 16 and over who made an appointment to see the GP but did not attend during the period of each phase of the study.

Diabetics

The names and addresses of all diabetic patients aged 16 and over were asked for. For the second phase a new list was obtained in order to look out for change of address, patients who had left the practice, and deceased patients.

An SSQ was sent to non-attenders and diabetics with an attached letter. The patient was asked to complete both sides of the

questionnaire and to return it to the Department of General Practice in stamped addressed envelope attached to the questionnaire. A contact name and telephone number was included on the letter so that respondents could contact the researcher if they had any queries about the study.

A second reminder was sent to non-responders after two weeks when the flow of returns had almost stopped, including another copy of the questionnaire, an attached letter (Appendix 10) and a prepaid envelope.

5.3.4. Materials

Surgery Satisfaction Questionnaires (SSQ) were printed on both sides of a size 5.8 X 8.3 " card (Appendix 3). At the end of the questionnaires patients were asked about their sex and age, and for further comments in terms of suggestions, and complaints regarding areas which were not included in the questionnaires.

5.4. Confidentiality

see Chapter 2, 2.9., page 63.

5.5. Main outcome measures

see Chapter 2, 2.2.3., page 46.

5.6. Data cleaning process.

The data was entered first in Paradox (1990) for immediate presentation to practices, then transferred to an Apple Mac. as before and analysed using SPSS. A frequency distribution was calculated for each variable to detect abnormal values, and to obtain descriptive statistics which describe specific

characteristics of data. The number of missing values was obtained using a frequency table.

5.7. Statistical Methods

A laptop computer application was developed for this study. Entry of questionnaires scores was done immediately. This method has been used successfully in a number of specialities (Gruer et al 1986, Ellis et al 1987). The span of time used in entering data for one practice ranged from one to one and half hours. Data analysis was done immediately, and a report produced as requested in the form of a histogram for SSQ subscale mean scores. For more information about the application; see Appendix 11.

The program was developed and modified by Dr. F. Sullivan, Dr. Sami Hussain, and Jim Charlton, working from the description of the SSQ in the Baker papers and previous work (Stearn and Sullivan 1993) to compare the results of one group of patients (attenders) in one surgery with those of all the other surgeries. As a result of having three groups in each surgery, it was decided to modify the program so that the different phases could be compared, to print the scores and to back up data regularly onto a floppy disk for saving and for doing more analysis using the SPSS package on the Apple Macintosh. A histogram was found to be the best method in comparing the performance of practices and to allow easy understanding of the information by GPs. Patients' comments were divided into three categories: positive, negative and neutral.

Comparison of satisfaction between surgeries

Appendices 12 and 13 are examples which show how the results of the first and second phases were presented to participants.

Appendix 12 shows the mean scores and standard deviation for the SSQ subscales for one surgery compared with the mean of peer surgeries for the first phase and the breakdown of one subscale (continuity subscale) into questions for one surgery. For continuity question three "I see the same doctor almost every time I go to the surgery" the mean score was higher than that of the peer surgeries. However, question 16's, which states "I do not always see the same doctor when I go to the surgery.", means the score was the lowest among the remaining three which constitute the continuity subscale. This shows the scores more specifically for each question, so that changes can be made regarding these specific questions.

Appendix 13 shows a comparison between the first and second phases for the same surgery.

Further statistical analysis performed on the data was transferred to the Apple Mac. Descriptive analysis was performed to describe the characteristics of the study subjects using mean and standard deviation. For further analysis the variables were examined for their approximation to normality by Statworks. Thereafter the appropriate parametric or non-parametric tests were applied. The types of analysis considered were those designed to fulfil the objectives of the study. In addition Wilcoxon test was done when the number of patients were less than 20.

5.8. Methods used for feedback of the results

Three methods were used to feed the results back to practices.

1. Photocopies of the results with a covering letter.
2. Overhead projection of more detailed findings at a personal visit to the practice.
3. Laptop computer analysis for more detailed questions specified by the practices during visits.

Period between phases

The second phase was started after a period of six months, because:

- enough time had elapsed to effect some changes;
- it was judged soon enough to retain enthusiasm of the participant;
- there was adequate time left to repeat the exercise later if necessary.

Feedback

Before the first feedback to surgeries, the following points were considered:

1. GPs' limited time;
2. the importance of stimulating more discussion within this limited time;
3. the provision of written information for further discussion e.g. practice meetings and practice annual report.

An overhead projector was used to illustrate the main information at a practice meeting, including patients' comments. A laptop computer was used for further information if it was needed. The use of a laptop computer for feedback of some of the

results enabled the GPs to consider using the same application in the future to repeat the same audit or to start a new audit in a new surgery.

It was agreed with most of the practices to choose the most convenient time for feedback, so that all partners could be present, including the practice manager, and to allow enough time for discussion.

The feedback started by presenting data using an overhead projector. Patients' response rates were shown first, followed by a comparison of SSQ subscale scores for practice attenders with the average of all surgeries. Specific information was shown by breaking up two subscales into its questions. This was followed by positive comments and then by the negative comments. Discussion was started and directed during the presentation using small group methods (Ramsden 1992). At the end of the meeting, photocopies of the results, a sample of the SSQ, and an attached letter containing more information about the results were distributed to all partners including the practice manager. GPs were informed in the letter that more information could be supplied if needed.

In these meetings only the first phase attender results were presented. First phase non-attenders and diabetics' results were sent later to all GPs and practice managers.

Presentation of SSQ data

For the audit study the data was presented by condensing the total average scores to five by dividing the total SSQ scores (85) by the number of questions (17). The same was done for the SSQ subscales.

5.9. Results

5.9.1. General practitioners' response rate (see Figure 21)

15 practices were interested and information was sent to them. After two weeks they were contacted by telephone to find out if they were still interested and to make an appointment. Three withdrew from the study and 12 practices agreed to participate. One practice did not complete the study, because one of the partners was on holiday and so was not questioned. Two practices had two branch surgeries, and these surgeries were located in different areas, were different in organisation and structure and served different population. The total number of surgeries which completed the study was 13.

5.9.2. Patients' response rate

Overall, 84.6% of the attenders returned the questionnaires in the first phase, compared with 55.5% of the non-attenders and 80% of the diabetic patients. In the second phase, 88.9% of the attenders returned the questionnaires, compared with 59% of the non-attenders and 82% of the diabetic patients (tables 30,31, 32). Response rates were high among attenders and low among non-attenders. This raises a few points:

1. Non-attenders may have been unhappy with service/s and this was reflected in their lower participation rate.
2. The high response rate among attenders was due to the direct method used in the distribution of the questionnaires e.g. direct contact.

3. The high response rate among diabetics could reflect either the good care provided to this group, and/or indicate that older patients were more likely to complete questionnaires.

Response rate within practices

Tables 30, 31 and 32 show the different response rates within surgeries and within phases. The response rates are not normally distributed. For attenders the median is 91 for the first phase and 90 for the second phase, with a range of 50.5% to 98.5% . For non-attenders the median is 55.2 for the first phase and 58 for the second phase with a range of 23.8%-100%. For diabetics the median is 78.3 for the first phase and 78 in the second phase, with a range of 67%-92%. The overall response rate for the second groups have increased while there were differences in response rates between surgeries. The difference in response rates between surgeries can be explained by either the:

1. different type of patients;
2. different methods used in the distribution of questionnaires;
3. different practice organisation or care provided;

5.9.3. Groups characteristics.

Sex

Table 33 shows the sex ratio for the six groups of patients. The ratios for attenders and non-attenders were similar to those of the practice population (Fry 1993). For diabetics the percentage of males was higher than females. The difference between the groups is highly significant ($p < 0.0001$ (Chi-square test)), which is explained by the high proportion of female patients among attenders and non-attenders.

Age

Data from Table 33 shows that non-attenders were young, while diabetics were older. The difference between the groups is highly significant ($p < 0.0001$), which is explained by the high proportion of younger patients among non-attenders and the high proportion of elderly among the diabetics.

Figures 22 shows age distribution for the six groups of patients. The distribution was similar for the two groups of attenders and the two groups of diabetics. The age distribution for the two groups of non-attenders were different. There were more younger patients in the second phase group.

The distribution of the attender group is similar to that of the Scottish population (NHS 1992), except for patients aged 65 and above. The proportion of this age group is lower than that of the Scottish population.

5.9.4. Characteristics of respondents and non-respondents

Data from respondents and non-respondents in the second phase were examined for the non-attenders and the diabetics to detect any significant differences in age, using Wilcoxon test; sex, using Chi-square test.

No significant differences were found for age and sex ratio for both groups (Tables 34 and 35), which shows that respondents and non-respondents have similar basic characteristics. This suggests that the study sample is representative for these two groups.

5.9.5. Characteristics of patients with comments

Table 36 shows sex ratio for all patients with positive, negative, neutral, and no comments. It shows that the percentage of positive comments for male patients was higher compared to negative comments, while it was equal for female patients. The difference between male and female patients is highly significant, chi-square = 10.0, d.f. 3, $p=0.02$. This indicates that female patients were less satisfied than male patients and more willing to address this in writing when given the opportunity to do so.

5.9.6. Distribution of SSQ total scores

Figure 23 shows the distribution of total SSQ scores for the six groups of patients. The scores were normally distributed for the six groups. The distribution was similar for the groups of attenders, non-attenders and diabetics. The mean and standard deviation are shown in Table 39.

5.9.7. Distribution of comments

Table 37 shows that the percentage of comments were higher among non-attenders and diabetics compared to attenders. This may indicate that patients were reluctant to comment while in surgery, even to make positive comments, either because they were in a hurry or they felt that if they commented negatively this might be discovered or identified. Figure 24 shows that the percentage of positive comments were higher among the diabetic group, and negative comments were higher among non-attenders. This shows that older male patients were more satisfied. Figure 25 shows the distribution of comments by age for first phase

attenders only. It shows that as age increases positive comments increased and negative comments decreased. This indicates that younger attenders were less satisfied with some of the services and attempted to report it, while older attenders were either more satisfied or reluctant to criticise practice services.

Characteristics of patients with positive and negative comments

Table 38 shows characteristics of patients with positive and negative comments. The figures given are mean, and standard deviation in parentheses for age, and male to female ratio. Significance figures were obtained using the Wilcoxon test for age and the chi-square test for sex. In all the groups older male patients are more satisfied. The difference in age between patients with positive and those with negative attitudes for the attenders and diabetics is statistically significant. It shows that high proportion of negative comments made by younger patients, and high proportion of positive comments made by older patients

5.9.8. Patients satisfaction

An analysis was performed by looking at differences in the means between different age groups, between one surgery and the total surgeries within the same phase, and between two phases for the same groups.

5.9.8.1. Total satisfaction

From Table 39 the mean score shows that diabetics groups are more satisfied than attenders and non-attenders. The differences between the groups is highly significant $p=0.0001$ (using Kruskal-Wallis test).

5.9.8.2. Satisfaction subscales

Diabetics were more satisfied with premises, and continuity. Non-attenders were less satisfied with continuity, medical care, availability, and in general. The difference between the groups is highly significant for all subscales ($p=0.0001$). Continuity and availability are given the lowest scores by all groups (Table 39).

5.9.8.3. Satisfaction and age

Figure 26 shows a scatterplot with standard error bars representing 1 standard error of the mean for the SSQ total scores for attenders first phase male and female patients. The scale on the y-axis has been enlarged to emphasise the differences. In general it shows that male patients were more satisfied than female, with the exception of male patients between the ages of 25-34, who were the least satisfied among the total sample. The differences between males and females are highly significant for the attenders $p=0.002$, but not significant for the diabetics $p=0.1$ and non-attenders $p=0.7$.

By looking more specifically at the individual subscales in Figures 27 and 28 it is shown that first phase male attenders were more satisfied than female with continuity and access, and the elderly patients were more satisfied than the younger with the continuity but less with access.

5.9.8.4. Comparison between phases

Table 39 shows the comparison between phase one and two for attenders, non-attenders, and diabetics. There is no significant difference between the first and second phases SSQ total scores for each sample.

5.9.8.5. Changes in satisfaction within each group for individual surgeries

This is done by subtracting first phase scores from second phase scores for individual subscales and for individual surgeries for each group separately.

Figures 29, 30, and 31 show the changes in mean scores for attenders, non-attenders, and diabetics for surgeries 4, 5, and 6 which are given as examples.

For the attenders, the figures show that differences in scores in terms of positive, negative or no difference were different for different surgeries. The same is true for other groups. This indicates that one/both of the following are valid:

1. some surgeries have the ability to change while others do not;
2. applying new systems might have a positive effect, no effect, or a negative effect on patients.

Changes in scores for attenders in surgery number four were highly positive for all subscales.

Correlation between changes and first phase scores

Correlation was performed between changes in scores (subtracting first phase scores from second phase scores) and first phase scores within each SSQ subscales for attenders, non-attenders, and diabetics.

Significant negative correlations were detected between the changes in the scores of access between the phases for attenders. This is shown in Figure 32. The practices which show a positive changes in satisfaction started with the lowest scores. The correlation for access as illustrated is $r = 0.57$, $p = 0.04$.

The correlation for the attenders general satisfaction scores is $r = 0.74$, $p = 0.004$ and for medical care is $r = 0.97$, $p = 0.0001$. These high correlations are influenced by the large change in scores in surgery four (outlier). The correlations for the changes in general satisfaction dropped to $r = 0.23$, $p = 0.5$, and for medical care to $r = 0.48$, $p = 0.1$ when data for surgery four was removed.

Correlation between changes in satisfaction and the number of changes made

No correlations were found between the changes in the overall scores and the number of changes implemented per surgery. A significant positive correlation was detected for availability for the attenders when data for surgery seven is discarded, $r = 0.8$, $p = 0.001$, which indicates that most changes implemented by most surgeries were related to availability (Figure 33).

Surgeries with significant changes

Data in Tables 40, 41, 42, 43, and 44 shows first and second phases attenders, non-attenders, and diabetic satisfaction scores for individual subscales for individual surgeries. The figures given are mean, with standard deviation in parentheses.

Some surgeries show significant improvement, while others show significant reduction in the quality of services provided from the patients' point of view. This may be explained by the fact that

changes made by some surgeries were not effective, not well planned, or that it may need more time to demonstrate an effect.

5.9.8.6. Positive and negative comments and satisfaction

Further analyses and comparisons were performed for patients with positive comments and those with negative comments. The difference in satisfaction is shown in Tables 45, 46, and 46. The figures given are mean, and standard deviation in parentheses. Significance figures were obtained using the Wilcoxon test.

The differences in all subscales are all highly significant, as might be expected.

They show that patients making negative comments had low scores for all subscales, even with highly-satisfied groups such as the diabetics. This reflects the importance of including a comment question in any satisfaction questionnaire in order to identify those groups with negative opinions i.e. who are dissatisfied.

Types and frequencies of comments

Tables 48-53 show the first phase frequency and percentage of first phase comments. More positive comments were given to the doctor by some of the diabetics, while less positive comments were given by non-attenders. Diabetics were the only group who gave comments regarding nurse care, all of which were positive. This suggests that involving practice nurses in the follow-up treatment of chronic patients is obviously highly appreciated. Nearly 70% of attenders gave positive comments to receptionists compared to 50% of diabetics, while 100% of non-

attenders gave negative comments . Most probably this reflect non-attenders' negative attitudes towards their doctor and receptionist or their need to justify their non-attendance. In turn, diabetics' satisfaction was expressed in terms of positive attitudes regarding the care provided by doctor and nurses. This shows that there are two groups of patients represented at both extremes of the satisfaction scale, which represents the differences in the type of care provided for different groups of patients and the difference in attitude and expectation of these groups.

The importance of appointments for the attenders was expressed in terms of negative comments. At the same time negative comments were given by the three groups of patients regarding appointments for working people and telephone access to the practice. This reflects the importance of the modification of practice working- time to fit patients' circumstances and the importance of improving access via the telephone. Nearly all attenders' comments regarding continuity were negative. This reflects the importance of continuity for attenders.

Comments

The following are examples of different types of positive and negative comments made by patients:

positive comments

- *I am very satisfied with the performance of my GP.*
- *Perfectly satisfied with all the treatment I receive at this practice.*

- *This is a very good surgery, and doctors and nurses are all very helpful.*

negative comments

- *Losing the family doctor touch.*
- *More use of computer by doctors, means not sufficient time is allocated to providing information about the treatment or possibly side-effects of drugs being given.*

5.10. Application of audit cycle stages

Stages of audit cycle have been applied to all surgeries. The first stage was the identification of problems. The second stage was to identify the reasons for these problems. The third stage was the implementation of solutions for these problems. Finally the changes implemented were assessed (Tables 54).

5.11. Discussion

Patient response rate

The response rate varied between the three study groups. This might be related to the method used and the type of patients. The response rate was similar to that of Frankel et al (1989); the non-attenders' and diabetics response rate was 58% after two mailings and the diabetics', 84%. A low response rate for non-attenders might reflect the differences in personality, behaviour, and sociodemographic characteristics of this group of patients compared with the rest of the practice population.

In this study a high proportion of non-attenders were young. Frankel et al (1989) and Cosgrove (1990) found that non-attenders are more likely to be young male patients, of low socioeconomic status, with large families, have more psychosocial problems and self-limiting illnesses. They have a low threshold for making appointments, are less likely to have a telephone and more likely to fail to cancel the appointment, make more visits to the surgery than the control group, forget the appointment time or be severely ill and need a home visit.

Distribution of SSQ scores

The SSQ score shows a normal distribution pattern which is different from that usually obtained in satisfaction studies.

This can be explained in that patients can judge more accurately the services included in this questionnaire. Patients were asked in general about medical care, so high scores have been given to this important dimension. If more specific questions were

included in this dimension, then the distribution of scores might be different.

Questionnaire

The questionnaire was inappropriate for housebound patients, as the majority returned the questionnaires with comments that they could not judge services other than the care provided to them at home by their GPs or other team staff. This opens a new area which needs to be included in evaluating the services provided by a general practice. A different questionnaire needs to be developed for housebound patients. A large number of patients complained about one question, which they found difficulty in answering "The doctors in this surgery never make any mistakes". Many patients commented that no doctor can be perfect.

Distribution of comments

More comments have been obtained from postal questionnaires by diabetics and non-attenders. However, the percentage of negative comments was higher among non-attenders. This shows that more comments regarding different practice services can be obtained by a postal questionnaire; the most likely reasons include:

1. more time at home to think about and write a comment;
2. the influence of relatives or friends;
3. feeling more secure;
4. patient factors, such as patient characteristics;
5. practice factors e.g. no privacy, lack of time;

Characteristics of attenders with positive, negative, and neutral comments

A high proportion of comments came from young patients and those in early middle age. The negative comments were higher amongst the young age group. Female patients made more comments. This is more pronounced for negative comments. This pattern is similar to that of satisfaction, where younger patients were less satisfied compared with the older age group, and female patients were less satisfied than male patients. Also, this means that there are other factors which influence patient satisfaction that were not included in the questionnaire, which can possibly be identified from patients comments.

Patient satisfaction

There was no difference in satisfaction when all attenders of the first phase were compared with those of the second phase for individual SSQ subscales. This was also true for diabetics and non-attenders. This is because the sample contains different types of patients, receiving different types of care and differing in their judgement. The small number of unsatisfied patients became diluted in this large sample.

Differences exist between phases when the total groups were divided into their individual surgeries. More differences were found by breaking down each subscale into its questions. It has been found that even subscales with higher scores contain low score questions compared with the average score of total surgeries. This reflects the importance of specificity in patient satisfaction studies, where there is a need to consider specificity in all areas of the study e.g. objectives, methods,

analysis, and discussion, in order to detect pronounced and significant differences and to target a group of unsatisfied patients (Fitzpatrick 1991 b).

Differences also exist between phases when the patients' comments were divided into positive and negative points of view for the individual groups. This shows that patients with negative comments were less satisfied with all subscales, even if comments were related to one individual area only e.g. the appointment system (availability).

Group comparison

Diabetic patients were the most satisfied and non-attenders were the least. This difference is influenced by age, socioeconomic factors, and the difference in care provided for each group (Murphy et al 1992). Availability and continuity of care were given the lowest scores by all the groups. This reflects the importance of these two dimensions for all patients. There is a need for studies on further evaluation and improvement of these two dimensions. However, access to surgery and medical care were given the highest scores by all groups. Further analysis has shown that elderly patients were less satisfied with access. The medical care subscale contains generalised questions which reflect the high satisfaction scores given to this dimension.

It may be of interest to compare satisfaction between diabetic patients within those practices which have special diabetic clinics run by a nurse, those run by GPs and those practices which

have no clinics. To achieve satisfactory results there is a need for a large number of practices to be included.

Correlation between changes in satisfaction and number of changes made

A significant positive correlation was detected for availability dimensions for the attenders, which indicates that:

1. most changes implemented by most surgeries were related to availability;
2. it is easy to make changes to improve availability;
3. availability is a priority for all patients.

Changes within individual surgeries

This shows that there were variations in priorities for the identified problems within each surgery. Selected problems were tackled differently, with each practice taking into account the availability of resources and the considerations of practice organisation and patients' interests.

Existing problems

Some practices were aware of the existence of major problems. Changes were made before the start of the first phase for improving these areas. The results of the first phase of data showed that previously-suspected problems did exist. By specifying the level of patient satisfaction, this study allowed practices to discuss appropriate changes to their services and see if improvements occurred. This study shows the importance of using an audit of patient satisfaction to evaluate a new system.

Comments

The importance of including a space for comments in a patient satisfaction questionnaire has been demonstrated in this study. The observation that a high proportion (22%) of patients made comments suggests that the earlier questions in the SSQ helped to focus patients mainly on areas of satisfaction/dissatisfaction. The perceived negative attitudes of some receptionists have been explored, which was relevant for some patients, although this area was not included in the questionnaire. The importance of a play area for mothers with children was highlighted. The importance of urgent appointments for many patients was documented in the comment space, while a group of patients who work during surgery hours and are unable to attend any appointment have suggested a solution for their GPs, regarding their problem. Comments have been used to identify two groups of patients, those with negative and those with positive attitudes. Further analysis has shown that they differ widely in their satisfaction levels.

Comments have provided qualitative information which has been considered and given priority by many practices. This shows more detailed information can identify areas of deficiency more accurately; at the same time it has an immediate influence in promoting changes. In one practice, blinds have been fixed in the waiting room as a result of only one comment.

Younger and female patients were less satisfied and this was reflected in negative comments made by these groups of patients. It is important to notice that patient dissatisfaction with one dimension of the services is reflected in other dimensions as

well. For example, patients who were unhappy with the appointment system were dissatisfied with all other areas as well. This means that if a patient is unsatisfied with one area he/she will score low in other areas as well, even though they might be satisfied with them (halo effect). They criticise the dimension they were most unsatisfied with, either due to its importance, its priority or to the limited space provided in the questionnaire for comments.

Generalisability and specificity were also noticed in patients' comments. Generalisability was more noticed for positive comments while specificity was more pronounced for negative comments. This raises the question whether the difference in satisfaction scores between the two groups was influenced by those with positive comments only, or by both groups. Also, it shows that specificity was used by patients to criticise certain areas relevant to them, while satisfied patients tend to generalise their satisfaction.

Most of the negative comments were related to the following areas:

Receptionist

The heavy workload of receptionists might affect their behaviour and this might be reflected in patients' satisfaction. From patients' comments it appears that many patients perceive the role of the receptionist in a practice team as very important. Some patients were unhappy about giving details of their illnesses, as they consider this to be confidential. This might reflect the fact that some patients did not even want the receptionist to know that they wanted to see the doctor, for

confidential reasons. This might damage patient-staff relations and the doctor-patient relationship. It has been suggested that part of a patients' anxiety is related to friction between patients and the receptionist (Williamson 1989).

Confidentiality

In one practice, patients complained about confidentiality in the first phase. They stated that when talking to the receptionist about private matters, patients waiting could hear everything. In the second phase there was no mention of this problem as it had been solved by the practice of using a separate room at the back of the surgery for those patients who wanted to talk privately.

Premises

In one practice most patients criticised the building. This practice is planning to move to a new building by summer 1994. The practice has used the first phase results to modify part of the internal structure for the new building. It will be interesting to repeat the audit cycle in the new practice.

Waiting room

It was mentioned by one GP that as waiting time increased in their surgery, many patients complained about the waiting room. In practices where patients wait for a longer time, it is important to pay more attention to making this room more comfortable for patients. One practice redecorated their waiting room and the results of the second phase show an increase in satisfaction regarding the waiting room. Two practices decided to enlarge the waiting room.

Play area for children

More patients and mothers were concerned about a separate play area for children next to the waiting room. Other patients were annoyed by children while waiting.

In one practice a new plan has been developed to expand the waiting room for this purpose. This information could be passed on to parents in the practice by leaflets or posters.

Continuity of care

Continuity was mostly affected in practices where locums were employed frequently.

Study findings were similar to those of other studies regarding continuity in group practices (Roland et al 1986, Freeman and Richards 1990). In this study the lowest scores were given to continuity and younger patients were less satisfied than elderly. Elderly patients generally had chronic problems such as diabetes and hypertension, so any appointment with the chosen doctor could be arranged well in advance. This shows that the majority of practices suffer from the same problems. The reason behind this could be either be that:

1. continuity is a crucial part of the provision of good care.

Kaim-Caudle and Marsh (1975) found that over 80% of patients prefer to see their own doctor, which is related to good doctor-patient relationship;

2. their organisation was not appropriate (Roland et al 1986);
3. the organiser was unaware of the scale of these problems (Roland et al 1986);
4. there was an absence of an immediate solution;
5. resources were limited;

6. these problems were very complex;
7. priority was given to improvement of other areas (Roland et al 1986).

Roland et al (1986) concluded that it was possible to provide excellent continuity of care even in group practices. Mothers considered both continuity and availability as important aspects of good medical care (Williamson 1989).

Patients' satisfaction and age

Male patients were more satisfied than female patients, and as age increased satisfaction increased, with the exception of male patients within the age group 25-34, who showed the lowest satisfaction scores. This group includes young employed patients who need an adjustment in services to cope with their working hours. There is a need to interview a random sample of patients aged 25-34 to examine this problem in greater depth.

By looking at subscales we can specify which services have been influenced by age and sex. The pattern of satisfaction was similar to that of the total scores, with the exception of access to the surgery, where older patients found difficulty getting to the surgery. Similar patterns for continuity and availability were found, which reflect the strong connection between these two dimensions and the provision of good care. It shows that elderly patients were happier with both which reflects the special type of care they receive. We should not forget that availability is influenced by the type of disease and that the majority of the elderly have chronic diseases which differ from those of young patients. It has been shown that the majority of patients prefer to see the same doctor regularly. Mothers of

children prefer to see the doctor as soon as possible, even at the expense of continuity (Williamson 1989). This reflects the strong influence of type and severity of the disease on availability.

There is a need to modify the system for mothers with children, to see the same doctor if possible, in order not to lose continuity, and to increase their satisfaction with these services.

Practice leaflets

Practice leaflets can be used to improve practice-patient communication (Albert and Chadwick 1992). It has been shown that practice leaflets are well-received (Bhopal et al 1990) and they can influence patients' behaviour (Neville and Mason 1987, Morrell et al 1980). The practice's policies and procedures can be explained to patients in more detail e.g.: when to call for a repeat prescription and when to call for an appointment; the type of care provided; and if changes are about to be made. The leaflets could include a detachable part containing satisfaction questionnaires, with an extra part to assess other areas of the practice and medical care provided e.g. asthma and diabetic clinics. The practice leaflets should be mailed to all patients and given to new patients joining the practice. In this way patients will be able to adjust themselves accordingly and they will be able to give comments and evaluate services every time new leaflets with attached questionnaires are mailed. At the same time, practices should be aware of the problems and improve accordingly, and then give feedback information to patients in the next practice leaflet. Patients' points of view should be taken seriously. This process can be simplified and improved by using

the same questionnaires regularly. Analysis can be performed easily by using a computer application similar to the one we have used in this study, which can be obtained from the Lanarkshire Audit Resource Centre. Adjustment and improvement of the computer application can be made if needed.

Information leaflets should include the study results for each practice with the comments made by patients, what the practice intends to do, why some areas have been recommended by patients to be improved, how the practice will do its best to improve these and other areas which are difficult to improve, and state the reasons. More information should be included in the leaflets telling patients what services the practice is providing, since some of those who registered with the service do not know about the practice. A patient will be happy to see that his/her point of view has been recognised or considered and this might stimulate patients to obtain and read practice leaflets.

Use of patient satisfaction data for extra resources.

This study has shown that patient satisfaction data can be used as a trigger for practices in improving care and in obtaining extra resources from the local health authority in order to improve the areas important to patients. In this study some practices have included feedback results in their annual reports, while others have managed to obtain extra resources. For example, two practices have drawn up a plan to increase the size of the waiting room with an extra play area for children. The plans have been supported and agreed on by the local health board. One practice managed to obtain an extra consulting room to improve availability.

Application of study results

This study provides valuable information for participating and non- participating practices in the same locality.

The study findings represent the attitudes of patients in the West of Scotland, so it could be applied to different practices, since the practices involved have the type of organisation and team which has become the norm in practices operating from all health centres.

This study has been designed to collect accurate data about the current situation in order to stimulate and increase practice team commitment to changes (Whitfield and Baker 1992, Spiegel et al 1992, Spencer 1993). The information provided to practices will establish a baseline for future changes, which can either be measured (Spiegel et al 1992) or used for continuous improvement. This returns the responsibility for improvements in quality to the practice team (Baker 1991 c).

The main reasons for the limited nature of the changes which have taken place as a result of this study were most probably:

1. the absence of guidelines for improvement with feedback (Mugford et al 1991);
2. lack of active intervention (Baker 1991 c).
3. the short duration between the first and second phase;
4. limitation of resources and absence of incentives (Horder et al 1986);
5. lack of motivation and interest;
6. the need for more specific additional informations regarding certain areas.

To improve this study there is a need to develop clear and practical guidelines to make changes (AMCPHCT 1991, Keeble et al 1989). These guidelines need to be developed and discussed with the help of participating practices (Schoenbaum and Gottlieb 1990). This needs to take place after the audit's first phase. Meetings can be organised and run using Spiegel et al's (1992) guidelines for achieving change in practice. Guidelines need to be flexible to overcome differences between practices in terms of different organisation, needs, priorities, interest, expertise, and availability of resources (Grol 1992). Improvements in specific areas can be achieved with well-developed, well-disseminated, and well-implemented guidelines (Grimshaw and Russell 1993, Grol 1993).

5.12. Conclusions

The findings of this study indicate that patient satisfaction is a useful tool for audit in general practice. The results have identified deficiencies in most surgeries; they have also identified the effectiveness of modification of a current system - a common deficiency found in continuity and availability for most practices.

Regarding the effect of feedback, some surgeries have made changes immediately. Other practices have used the results to obtain urgent extra resources and they have succeeded in doing so. Some practices planned to make major changes before conducting this study and they have used the results to modify part of changes already planned.

The use of a comments space by many patients has led to the identification of other problems which were not included in the questionnaire. Interestingly, qualitative data had a strong and immediate influence on GPs in persuading them to make changes. This has been demonstrated in this study. At the same time, through these comments, unsatisfied groups of patients have been identified even within the highly-satisfied group.

A group of patients have been identified who could not answer most of the SSQ for the reason that they are housebound. At the same time some patients have criticised some of the medical care subscale questions. This may suggest the need to amend the questions in this subscale if it is to be useful for discovering the views of these patients.

Regarding satisfaction, diabetics were highly satisfied and non-attenders were less satisfied. Younger and female patients were less satisfied. Younger patients were more satisfied with access compared with elderly patients.

This study shows improvements in satisfaction can be achieved by studying a specific group of patients within individual practices using questionnaires with specific dimensions.

5.13. Recommendations

1. The importance of examining patient satisfaction in detecting deficiencies and improving the care provided should be more widely acknowledged.
2. Many surgeries showed lower level of satisfaction with continuity and availability. Most attempts to improve these two areas failed. There is a need for more in-depth research into these two areas in order to identify the underlying causes of the problems.
3. Changes to services were limited. More effective strategies are needed for improvement. This highlights the need for acceptable but effective guidelines to improve certain areas in general practice, such as availability and continuity. In addition, it is often necessary for resources to be redirected from within practices or elsewhere to effect change.

6. Discussion

Summary

Patient satisfaction in general practice is influenced by many factors. Some of these factors have a major impact, while others have a more indirect effect. This chapter reviews the findings of the three studies, examining those factors which have been shown to influence patient satisfaction such as:

- depth of doctor- patient relationship,
- continuity of care,
- availability of care,
- staff-patient relationship.

It also considers the reasons behind the variations in satisfaction, and the specific research criteria which influence the accuracy of the findings, such as:

- study questionnaires,
- type of data,
- factors which influence negative opinion.

Various strengths and limitations of the methods used are further discussed.

Depth of doctor-patient relationship

The depth of relationship has been shown to be the major determinant of patient satisfaction with a medical consultation (Woolley et al 1978, Bensing 1991, Cleary and McNeil 1988, Simpson et al 1991).

Depth of relationship is not just important for patients with psychosocial problems. It is important for the majority of patients who attend general practice.

In the first investigation, which focused on patients with psychosocial problems, the depth of their relationship with the GP was the most important factor in determining satisfaction. This suggests that GPs who wish to satisfy such patients should concentrate on this part of the consultation when they detect that the principal problems in a consultation lie in the psychosocial domain. This can be done by building up trust, mutual respect and empathy (McAvoy 1987). More specifically (Goldberg and Huxley 1992) by :

- listening,
- allowing the patient to talk,
- asking questions related to the problem,
- providing more time,
- sharing the management plan.

Bertakis et al (1991) found that encouraging patients to talk about psychosocial problems in an atmosphere that is characterised by absence of doctor domination is associated with high level of patient satisfaction. Hall et al (1988 c) found that more social conversation was associated with greater satisfaction. Stewart et al (1979) observed that the doctor's knowledge of the patient's complaints was positively associated with their satisfaction.

In addition, patients who were unhappy with the desktop computer were dissatisfied with this area. This may reflect the tendency of GPs to ignore either partially or completely this essential area as a result of concentrating on, and spending more time with, the computer. It would be of interest to follow this up beyond 6/12 to see if this persists.

As other researchers have found, patients are better able to understand and evaluate interpersonal care than technical care. This finding may be true for the majority of patients attending general practice, who need attention, listening, empathy, and to be looked at as a whole person.

It has been found that compatibility between the patient's desire and the doctor's performance has an important influence on the success of the relationship (DiMatteo and Hays 1980). In a study done in primary care Bartlett et al (1984) found that the quality of interpersonal skills (sensitivity to patient's feelings, interchange of information, organization of interview, and environmental factors) influenced the outcome more than the quantity of teaching and instruction given to patients. Perhaps the teaching that was accomplished did not address the patients' questions.

Lupton et al (1991) found that patients mentioned affective care (aspects concerning the interpersonal relationship between the doctor and patient) more commonly than other issues when asked about a "good doctor". In their study affective care was second in order in their list of reasons for first choosing their regular doctor, before "a recommended doctor", and it was the first choice in their list (41% of patients) of reasons for continuing to visit the same doctor. They have also shown that patients have the ability and motivation to actively evaluate their GPs.

The doctor-patient relationship is not just important to patients. Skolnik et al (1993) have shown that family doctors identified

relationships with their patients as the single most satisfying aspect of their practice.

It has been shown that a doctor-dissatisfied patient relationship can be improved by discussing the relationship between them, and considering the patient's point of view, instead of just looking at the patient's ailment (Bareman et al 1993).

Increased enquiry about the patient's family and social situations, which has been taken by the patients as a sign of concern, was associated with high level of satisfaction, (Weinberger et al 1981). This reflects the need to include in any consultation satisfaction measure questions relating to the patient's social and family situation.

Understanding and practising the appropriate behaviour in the consultation in association with modern technology is necessary for patient satisfaction with medical care (Vuori 1987).

Providing information

It has been shown that providing information to patients is a key element for enhancing the doctor-patient relationship (Williams and Calnan 1991 a, Hall et al 1988 c). This might reflect the advice and reassurance given to patients with or without psychosocial problems. This explains why women with psychosocial problems can show no satisfaction when their problem has been identified. It has been shown that women are given more information during the consultation because they ask for it (Hall et al 1988 c). This reflects the need for more time to

provide those women with more advice and counselling. It also reflects their need for more information to overcome the particular kinds of problems most women encounter.

Non-verbal skills

Empirical studies suggested that physicians' nonverbal skills are related to their patients' satisfaction with medical care. DiMatteo et al (1986) found that nonverbal skills were significantly related to patient satisfaction with affective care. Bensing (1991) found that affective behaviour and especially nonverbal affective behaviour is the most important determinant of patients' satisfaction. This shows that nonverbal communication has a strong influence on patient satisfaction. This important behaviour, which might have influenced the results, has not been examined in this investigation. There is a need to include a measure of nonverbal skills in future research, for a more complete understanding of the problem.

Consultation time

No relationship has been found between consultation time and patient satisfaction in the psychosocial and computer studies. The possible reasons are:

1. a single item representing time was included in the questionnaire used for the psychosocial study. Similarly, the measure of patient satisfaction used by Bensing (1991) included one item which reflected Ware's dimension of 'humaneness' (Ware and Snyder 1975) or what other researchers describe as 'affective satisfaction' (Roberts and Tugwell 1987).

2. flexibility of GPs regarding time. i.e. sufficient time is provided for patients with psychosocial problems and during the period of introduction of the desktop computer.
3. unawareness of patients of the importance of time, since they know that they can come back to see their GP at any time.
4. some GPs possess good skills in dealing with complicated cases and are able to use their limited time more efficiently, thus leaving their patients more satisfied.

For patients, consultation length is an indicator of the doctor caring. It is worthwhile noting that several studies found that the doctor spends more time with patients with psychosocial problems than with others (Howie et al 1991, Whitehouse 1987, Morrell 1971, Anderson and Mattsson 1989).

In two studies the length of the consultation time was found to be significantly and positively correlated with patient satisfaction (Williams and Calnan 1991 a, Greene et al 1994), while in others no significant relation has been found (Arborelius and Bremberg 1992, Weinberger et al 1981).

In a study by Williams and Calnan (1991 b) in general practice, 25% of patients were dissatisfied with the length of time spent in consultation. Greene et al (1994) found that the length of the visit was significantly correlated with satisfaction in older patients.

In a study done by Arborelius and Bremberg (1992), it was found that GPs provided more time to achieve a shared understanding and involved the patient in management in the positive encounter, where both GP and the patient had a positive

impression. The time for positive consultations was on average two minutes less than for negative consultations, where both had a negative impression, but this difference was not significant. Patient satisfaction was higher for a positive encounter. The problems presented in both consultations were very similar. Not clarifying the reason for consulting has been found to be the most common reason behind communication problems.

Weinberger et al (1981) found that length of encounter was not of concern to patients. This reflects the finding that it is the quality rather than the quantity of time spent with the doctor that is important to patients.

Professional care

Although patients may not have the necessary technical knowledge to accurately assess the technical quality of the care they receive, they certainly appreciate its importance (Vuori 1987, Donabedian 1992, Fitzpatrick 1990).

Some patients have the ability to judge the technical part of the consultation. This may be due to their access to other sources of care which gives them the opportunity to use this source as a standard, while others have more exposure to information about medical technological development (DiMatteo and Hays 1980).

In this investigation, patients in general were more satisfied with professional care compared with depth of relationship and perceived time. This is explained by the fact that patients give high ratings to professional care, either because they feel they

cannot judge it very well or because they believe that the care they have chosen is of the highest quality (Hall and Dornan 1988b).

In the psychosocial study, patients identified by GPs as having psychosocial problems (false positive) were highly satisfied with depth of relationship and professional care compared with the normal (true negative). While those patients identified by GPs and the GHQ (true positive) were highly satisfied with depth of relationship only compared with those missed (false negative).

In the computer study patients who considered that the desktop computer is a bad idea were less satisfied with depth of relationship and professional care. These findings can be explained by:

1. The degree of patient satisfaction with depth of relationship was reflected in their appreciation of professional care.
2. Patients with some degree of psychosocial problems are concerned more with depth of relationship. Another possible explanation is that GPs concentrate more on depth of relationship with this group.

The first explanation is supported by the DiMatteo and Hays (1980) investigation, which suggested that patients' perceptions of one aspect of their physicians' behaviour tend to be strongly related to their perceptions of other aspects. This means that if patients felt their doctor performs well in communication, they also considered them to be technically competent and provide appropriate care (Donabedian 1988). This may reflect the possibility that patients first judge the depth of relationship they receive and then generalise to an assessment of professional care, without a knowledge base for such an assessment.

In this investigation a difference in score distribution for services (SSQ) and consultation (CSQ) was found. The SSQ scores show a nearly normal distribution pattern compared to the CSQ, which showed a positive skew. This might indicate that patients feel they have the ability to judge more accurately other services than the care provided by the GP in the consultation. Other possible explanations for the skewed CSQ distribution would include:

- patients' reluctance to criticise their doctor;
- the reluctance dissatisfied patients to participate in the study;
- the instrument not including the full range of dimensions or items responsible for dissatisfaction;
- the instrument not being highly sensitive to the range of satisfaction that patients experience.
- the lack of specificity of certain items.

Continuity and availability of care

It has been found that satisfaction is positively related to continuity of care (DiMatteo and Hays 1980, Weinberger et al 1981, Weiss and Ramsey 1989). Cleary and McNeil (1988) in their review found that personal care is valued highly by many patients. The audit study shows that patients were less satisfied with continuity and availability of care. These results are similar to those of a study done by Hjortdahl and Laerum(1992) in which it was found that personal, continuous care is linked with patient satisfaction. At the same time it was found that patients diagnosed as having psychosocial problems were less satisfied with consultations compared with other patients. No information

was given as to whether these patients were less satisfied with personal or continuous care. Weiss (1988) found that having a regular source of care was a more important predictor of patient satisfaction than patient's age, sex, educational level or income.

In the psychosocial study, the effect of continuity of care was not examined. Deficiencies in continuity and availability of care have a great influence on GP accuracy and rate of detection of psychosocial problems. Patients with psychosocial problems might have difficulty in seeing the same doctor. They may see any doctor or delay seeking help due to the effect of their problems on their behaviour. Alternatively, they may have a tendency to "shop around", looking for a doctor who fits their own style and standards. If these patients are given a late appointment, the doctor will have difficulty in accurate diagnosis due to disappearance of major symptoms on their recall. Also, these patients might not realize the importance and effect of continuity and of having a personal doctor in the management of their problem. They might need to be helped by doctors and practice staff asking them to make an appointment with the same doctor or the doctor having a personal list (Pereira Gray et al 1994). In the audit study one of the reasons why patients were dissatisfied with continuity of care is the frequency of use of locum GPs. This problem can be solved by having a part-time partner or a fixed locum. Availability can be improved by having extra staff. It would be interesting to find out the relation between the identification of psychosocial problems, continuity and availability of care and patient satisfaction.

Organisation

Greenley and Scholenherr (1981) found that if staff are more professionally-orientated, more pro-client attitudes, and less committed to organisation rules, patients are more satisfied. Freeman (1989) found that most receptionists thought it was important that patients should see the same doctor, but their influence was small compared to that of the doctor as expressed in practice policies. If individual decisions regarding patients can be made more quickly by staff without having to consult their busy GPs, clients feel that the staff are more interested in them. Also, they found that role discretion (the extent to which the staff enjoy flexibility in handling their tasks) is related to greater work-group satisfaction of the staff, lower intrastaff conflict, and lower staff frustration with patients. This reflects the importance of flexibility in improving patient satisfaction. Mechanic et al (1980) found that patients were highly satisfied with the interpersonal aspect of care when the doctors work in less bureaucratized settings, where they are flexible, responsive, and interested.

Personal characteristics of the staff members who actually come into contact with patients influence patient satisfaction with different areas of the practice. Having staff with low morale or high frustration will have a negative effect on patient satisfaction.

Practice staff

Less attention has been paid to patient satisfaction with practice staff (Williams and Calnan 1991b). In the audit study a proportion of patients with negative comments criticised the

receptionist. This correlated with a decrease in their satisfaction with other aspects of care, compared to those who were happy with the receptionist. This shows that the relationship between patients and other members of the primary care team is becoming increasingly important (Williams and Calnan 1991 b).

Basic socio-demographic characteristics

Sex

In this investigation it has been found that women are less satisfied than men with the care provided in general practice; this finding is consistent with other recent work done in general practice (Williams and Calnan 1991a, Khayat and Salter 1994).

This may reflect:

1. difference in expectations and needs;
2. difference in utilisation patterns of health care;
3. difference in experience of health care.
4. influences of familial and social factors.

Weiss (1988) found that certain predispositional factors such as confidence in the community's medical care system, having a regular source of care and being satisfied with life in general are more important predictors of patient satisfaction than patients' sex, age, education, and income. His study population sample was selected randomly from a local community which included patients from alternative delivery systems.

Age

The three studies have shown that satisfaction of patients increased with age: this finding is similar to that of other studies (Cartwright and Anderson 1981, Hopton et al 1993, Fitzpatrick 1984, Fitzpatrick and Hopkins 1983, Locker and Dunt 1978, Khayat and Slater 1994), except for access where the reverse was true, findings supported by a previous survey (Williams and Calnan 1991a). It may be that:

1. older patients viewed GPs more positively than did younger patients;
2. younger patients show less satisfaction with professional care since they are more exposed to modern technology than the elderly;
3. elderly patients have experienced a poorer quality of professional care in the past;
4. GPs provide better care for elderly;
5. there is a sense of urgency felt by GP's in treating patients in the later years of their life.
6. Less effort and time is needed in the ongoing management of chronic diseases in the elderly.

For both age and gender, there is a need for more detailed research in order to unravel the reasons behind these findings.

Variation in satisfaction

Variation in satisfaction is found in different patient subgroups. For instance, older patients are more satisfied with the consultation, continuity, and availability, and less satisfied with access, than younger patients.

Although such data are reported, research has not systematically examined these subgroup variations. One might ask what is it about the consultation that results in older patients' satisfaction? More specifically, what reactions and processes in doctor-patient visits are associated with older, or male patient satisfaction and younger, or female patient dissatisfaction.

The theory that patients of different sociodemographic backgrounds, with different psychological needs and different medical needs, have different communication needs, has not been fully explored. There is little work which investigates why different patients are satisfied or dissatisfied with different aspects of their medical care. This might be related to the complexity of some areas such as the consultation, more specifically the doctor-patient relationship (Stewart 1983). Different patients have different relationship needs and preferences. It is difficult to investigate individual patient requirements for different communication approaches, which suggests we should look for a consistent and most common approach associated with patient satisfaction (Stiles 1989).

Satisfaction

Having a regular source of care, the ability to change doctor at any time, and to consult a doctor of one's own choice in general practice explain the high rate of satisfaction of the majority of patients in this research.

It has been shown that when patients feel that their main objectives have been achieved, they tend to attach little importance to deficiencies in the process of achieving it (Carmel

1985). Greenley and Schoenhen (1981) found that patients were satisfied because they enjoy greater flexibility and a wide range of services and stability of resource. High satisfaction scores are given because patients trust and have more faith in their GPs (Lupton et al 1991). Ross and colleagues (1982) found that patient satisfaction is higher if the sociodemographic characteristics of the physician are similar to those of the patient.

Dissatisfaction

Dissatisfied patients either have a low level of tolerance for discrepancies between their expectations and the actual care that they get, or their demands for care are higher than those of satisfied patients.

Dissatisfied patients may have different expectations of the role of the doctor and the role of the patient in the consultation than do satisfied patients. It might be that dissatisfied patients are less likely to challenge the authority of the doctor than are satisfied patients.

In this investigation, for patients who criticised one or more dimension of primary care (using the comment space) this attitude was reflected on all SSQ subscales scores, while for patients who showed unhappiness about the desktop computer, this attitude was reflected only with regard to professional care and depth of relationship. This can possibly be explained by:

1. the different behaviour of such a sub-group of patients;
2. attaching or connecting failure of one service with the other (Ley 1988);

3. trying to emphasize the negative opinion to attract more attention to this area;
4. the influence of other variables, e.g. type of disease;
5. type of area which is evaluated e.g. structure v.s. consultation.

Specificity

The findings of this investigation support other studies (Cartwright 1967, Cartwright and Anderson 1981, Locker and Dunt 1978, Fitzpatrick 1991 b, Fitzpatrick and Hopkins 1983, Williams and Calnan 1991, Cleary and McNeil 1988), where patients show a higher level of satisfaction when asked about medical care in general, while they criticise certain areas when asked specifically.

As a result of this, three groups of dissatisfied (less satisfied) patients were identified in this investigation: women with psychosocial problems, patients who were unhappy with the computer, and patients who criticised one or more service. Dissatisfaction was expressed in relation to one or all areas of services provided. For example, it was shown that patients with psychosocial problems (false negative) were dissatisfied with the depth of the relationship with the GP. Those who disliked the use of a computer were dissatisfied with the professional care and depth of relationship. Those who criticised one service tends also to criticise other services.

More information was obtained when the patients' age was divided into five categories. For example, in the audit study it was found that male patients within the age group 25-34 were less satisfied with all aspects of primary care. Most probably

these were the patients who complained that the surgery time did not fit in with their work schedules, and some suggested to their GPs that they hold a late or weekend surgery. Similarly, Khayat and Salter (1994) divided patients into two age groups, 17-44 years old, and 45+ years old. They found that the 17-44 year olds were less likely to like their doctors, were less satisfied with the doctor, more willing to question the doctor's competence, were more likely to be dissatisfied with waiting times, less compliant, and less satisfied with overall care than the 45+ year old.

In this investigation it has been found that in patients with positive comments, the comments were very general and few gave specific reasons, while in patients with negative comments, the majority gave a specific reason. This shows that satisfied patients tend to generalise their satisfaction, while dissatisfied patients tend to specify areas of dissatisfaction. This reflects the need for researchers in this field to concentrate mainly on identification of dissatisfied patients to achieve more accurate and specific information. This is in accordance with the Japanese principle of "Kaizen" where "every defect is a treasure". This is supported by the findings of Lupton et al (1991).

Factors which influence negative opinion

It has been suggested that more negative opinions can be extracted from patients if the questionnaires come from an independent body such as a university department (Baker 1990, Cleary and McNeil 1988). We found from the audit pilot study that patients were reluctant to criticise their practice to somebody from outside (researcher). Also, we have found that more

comments and criticism were received through the use of postal questionnaires.

Study questionnaires

Some patients used the comments space to criticise the content and the purpose of the SSQ in general, while a number of patients complained about one question, which they found difficult to answer, namely "The doctors in this surgery never make any mistakes". Many patients commented that no doctor can be perfect. There may be a need to modify this question and if possible to have more specific ones, to obtain more information regarding medical care. Some patients complained about answering similar questions in the SSQ. This might have affected their answer. This could have been improved by informing the patients that *"some questions look similar to others, but each question is different. You should answer each question by itself"* (Ware et al 1983). Finally, the SSQ was inappropriate for certain groups of patients who receive health care from general practice, e. g. the housebound patients.

The investigation findings show that there is a need to include other dimensions or to develop a separate questionnaire to include other services, for example, services provided by the receptionist or community nurses. At the same time, the number of items in terms of contents for each dimension should be increased to cover all aspects of the dimension. And, of course, there is a need to have specific questionnaires for specific illnesses e.g. psychosocial problems, and important areas in primary care such as continuity and availability of care.

The sensitivity of information provided by the CSQ and SSQ can be improved by including separate indirect, discriminating (with yes and no answer) questions for each dimension, for the purpose of identifying those patients who are unhappy with this particular service. At the same time, a comment space related to the same dimension should be given for each of these questions, to obtain extra information.

Modification of any questionnaire will have an effect on their validity and reliability. At the same time modification needs more time and work.

Quantitative and qualitative data

A few patients in the audit study have given detailed information regarding their specific problems by using the comment space; some even included more information on extra paper attached to the questionnaire. This information has been included in the feedback to practices. Surprisingly, qualitative data obtained from a small number of patients has a strong influence on GPs and practice staff. In this investigation more information could have been achieved by interviewing a random sample of patients (Carr-Hill 1992, Fitzpatrick 1990).

Comments

For the computer and the audit study we have fulfilled criteria recommended by Locker and Dunt (1987) and supported by Fitzpatrick (1993), Donabedian (1992), and Stone (1993), by combining the two methods, direct questions and comments. This has increased the sensitivity and provided a more comprehensive picture of consumer opinion. Locker and Dunt (1987) have

suggested asking patients for comments on the aspects of care from their experience prior to asking about their satisfaction. It is preferable to place the comments section at the end. The reason for this is to facilitate the recall process of events related to one or more aspects of the satisfaction questionnaire.

The importance of comments

We have found that by including a comments space with the questionnaire the following has been achieved:

1. more information is obtained;
2. more sensitive information is obtained;
3. discrimination between satisfied and dissatisfied groups is possible;
4. patients were allowed to state their own priorities;
5. the results are more likely to reveal differences between services and changes over time;
6. practices have found comments more valuable and they initiated more discussion.

Good qualitative material may provide just as useful feedback for the purposes of provoking critical appraisal of practice (Fitzpatrick 1993)

In this investigation valid and reliable questionnaires were used in order to obtain a reasonably high level of measurement accuracy.

Other areas in general practice e.g. specific staff-patient relationship, out-of -hours calls, health promotion and other clinics, could be included in the measure of patient satisfaction,

in order to measure the overall quality of care provided by general practice.

Lebow (1974) has suggested using more than one method to determine whether the judgement is typical. In the audit study a comment space has been included. The SSQ subscale scores for patients with positive comments were compared with the scores of patients with negative comments. The results confirm the judgement by patients, which strengthens the accuracy of the data.

A comparison between the results of the three studies can be made since: similar methods were used; the same questionnaire was used in two studies; the studies were done in the same setting; attenders' characteristics were the same. This allows the finding in one study to be applicable to the others.

In this study a complete picture of the patients' point of view was not obtained, since a number of patients refused to participate in the investigation. This could have been rectified by interviewing a random sample of non-respondents (Carr-Hill 1992, Fitzpatrick 1990) or collecting more information from their records.

Despite these reservations, the present investigation may be considered an important contribution to the understanding of the factors that may enhance or impede patient satisfaction with the quality of care in general practice. The findings of this investigation are supported by the Smith and Armstrong study (1989), where depth of relationship, continuity of care, availability of care, and staff-patient relationship were ranked highly by patients.

Conclusions

1. Depth of relationship is the most important factor which influences patient satisfaction in general practice.
2. Patients are also concerned with:
 - continuity of care,
 - availability of care,
 - staff-patient relationship.
3. Age and sex are important determinants of patient satisfaction.
4. Specificity is an important aspect in patient satisfaction studies, in order to identify dissatisfied groups of patients.
5. A specific dichotomy question can be used to identify dissatisfied groups of patients.
6. Qualitative as well as quantitative data are needed for a complete overall assessment of patient satisfaction.
7. Patient satisfaction questionnaires can be used for audit as well as for the assessment of the effect of the introduction of a new service into general practice.

Recommendations

1. There is a need to investigate further the influence of availability and continuity of care on detection of psychosocial problems in general practice and on patient satisfaction.
2. Future research is needed, to focus upon the primary health care team rather than solely upon GPs.
3. Qualitative assessment should be considered as a useful addition to the quantitative information produced by reliable, valid and practical questionnaires.



FACTORS INFLUENCING PATIENT SATISFACTION IN GENERAL PRACTICE

(Volume II)

Sami M. M. Hussain M. B. B. ch., F. P. R. P.

Ph. D. Thesis

The University of Glasgow

Department of General Practice

August 1994

Figure 1.

Psychosocial study method.

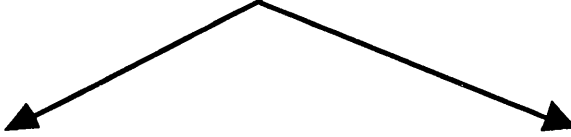
125 adult patients attending 125 consecutive consultations receive questionnaires when they inform receptionist of their arrival (patient should not be selected).



The number on the envelope should be written next to the patient's name in the appointment book



see doctor



both patients' questionnaires are to be completed after the patient has seen the doctor

Doctor will write patient's initial on the doctor rating questionnaire for each patient.



put the completed questionnaire in a box



at the end of each surgery the doctor will use the appointment book to make the numbers on his/her questionnaires correspond with the numbers on the patient questionnaires



Telephone Dr Sami Husain to say box available for uplift (tel : 3328118)



questionnaires will be analysed in Department of General Practice



the analysed data will be sent to the practices for comment



publication of anonymised data

Figure 2.**General practitioners' response rate**

18 GPs agreed to participate



2 withdraw from the study



2 did not provide GPRQ coding



2 distributed less than 50% of the questionnaires



12 completed the study

Figure 3.

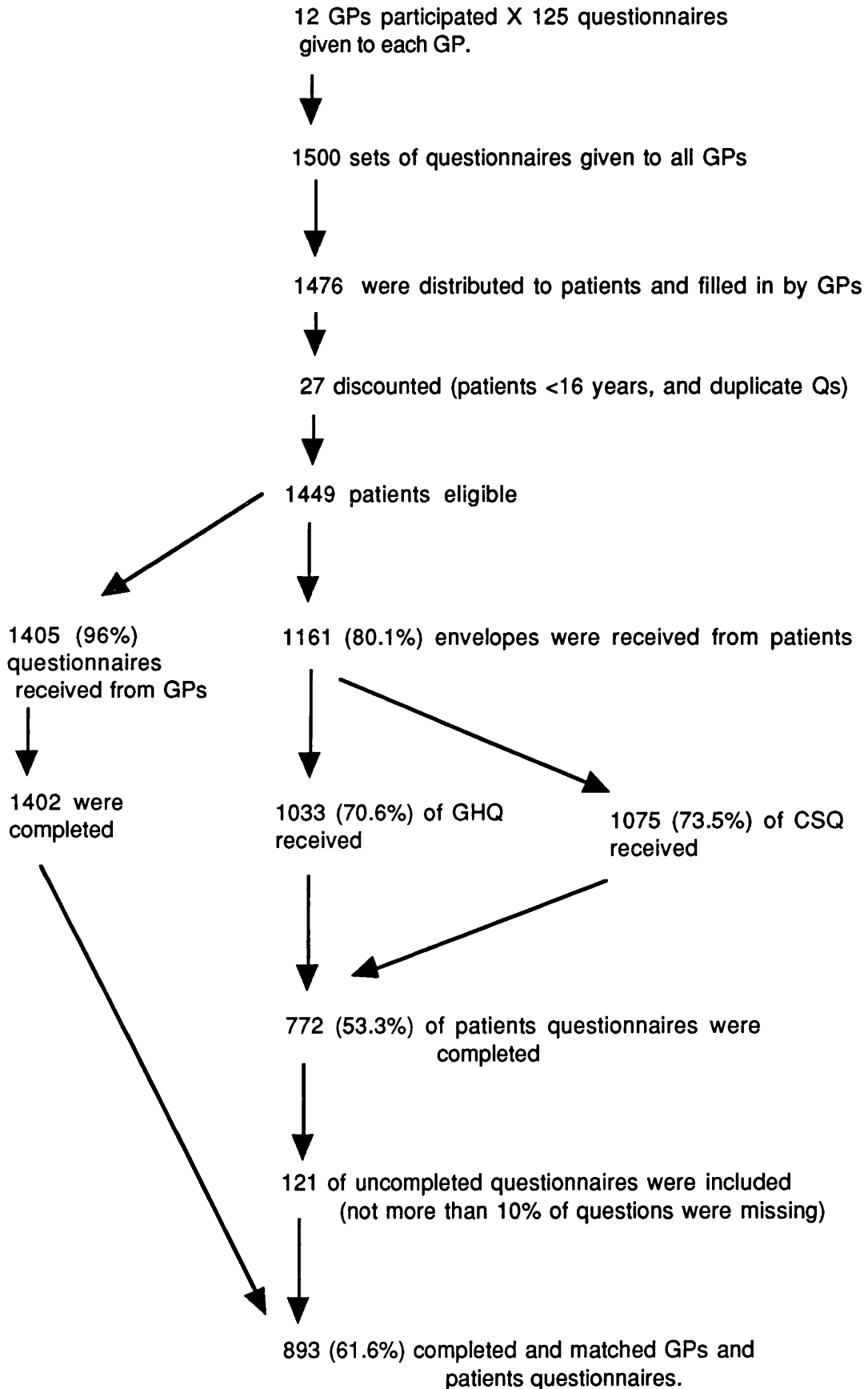
Response rate to the three questionnaires

Figure 4.

Distribution of the total scores for the short version of the consultation satisfaction questionnaire.

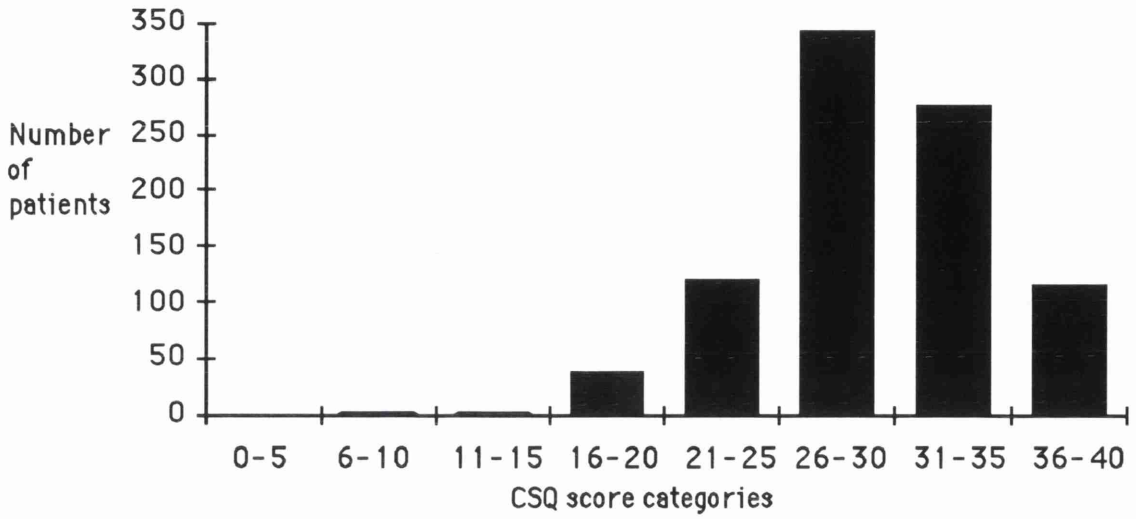


Figure 5.

Distribution of general practitioner rating scores.

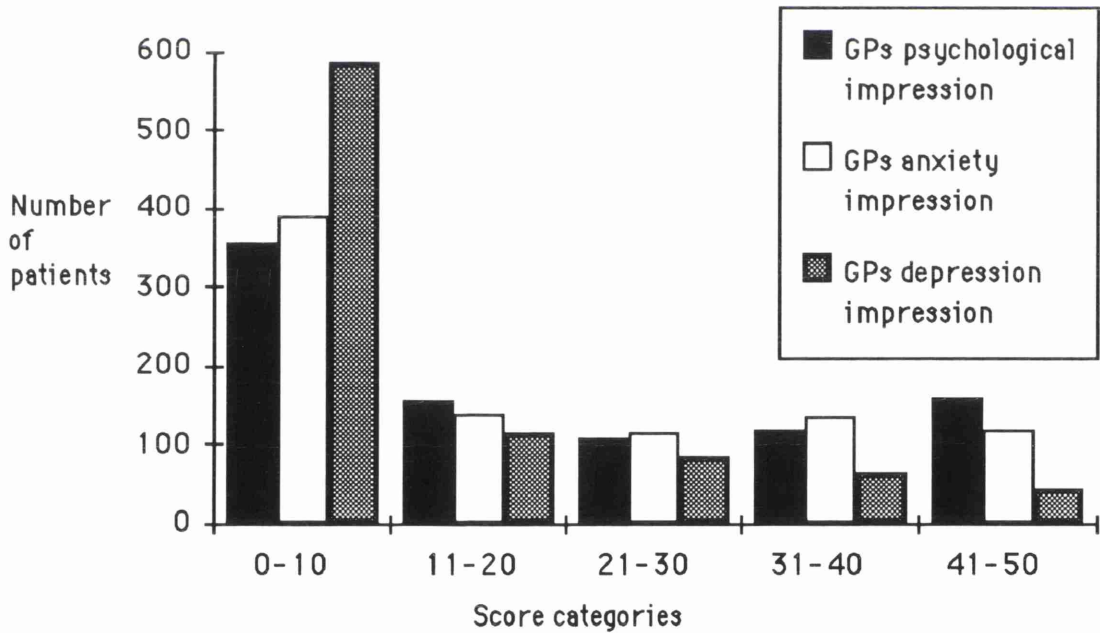


Figure 6.

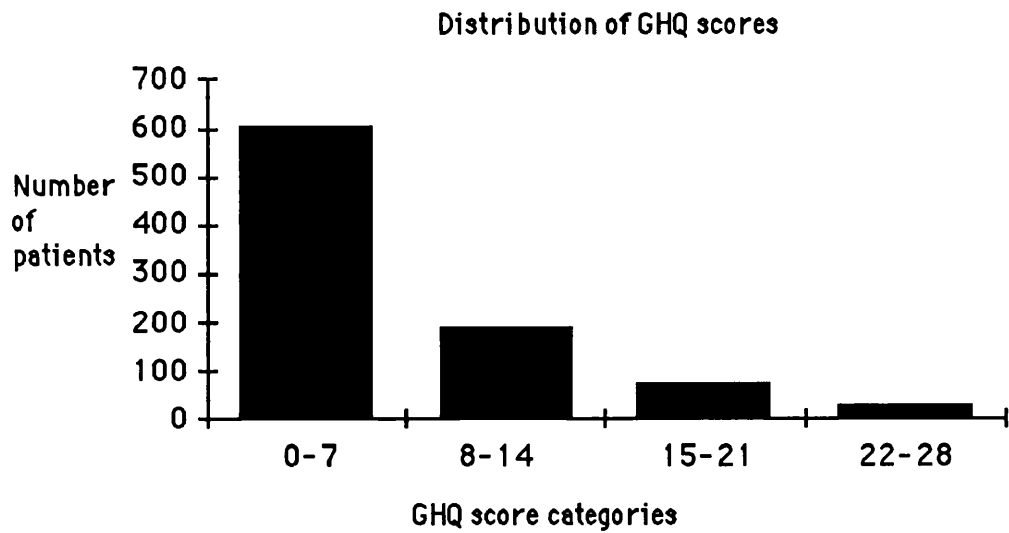


Figure 7.

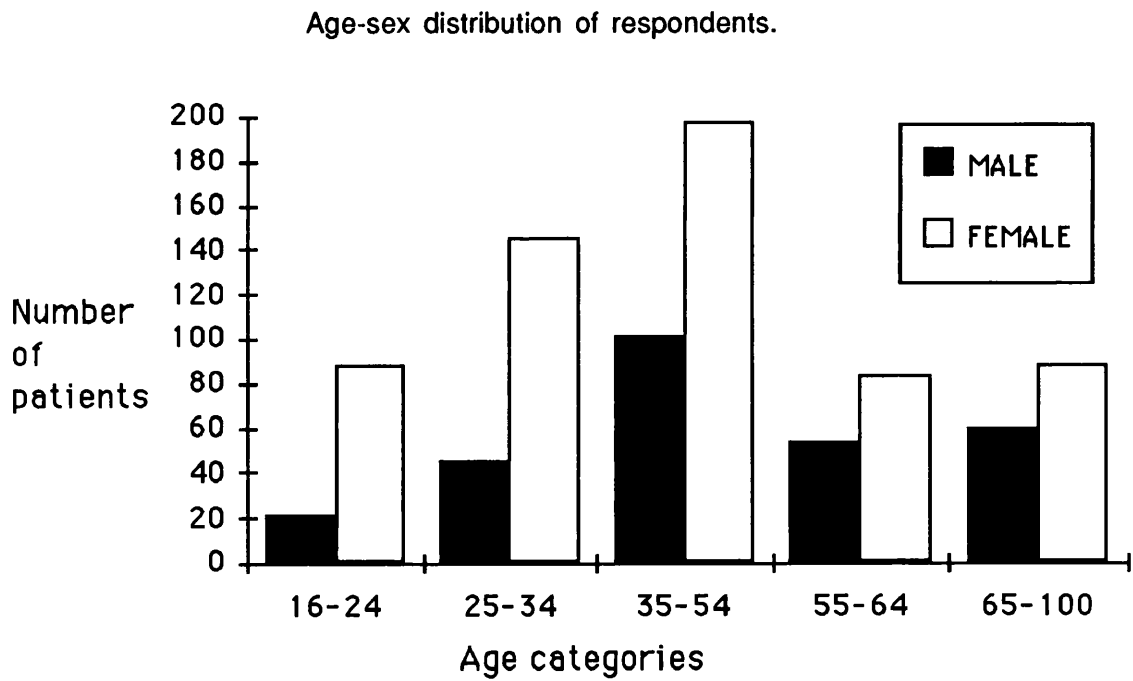


Figure 8.

Comparison of age distribution with Scottish population
(Source, The Patient's Charter. What Users Think 1992).

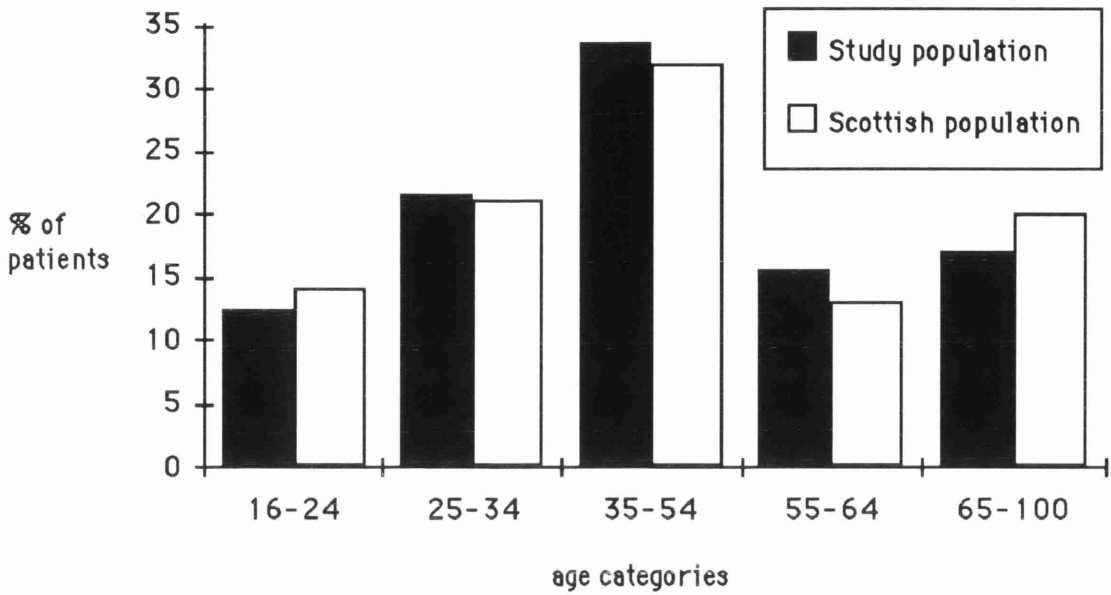


Figure 9.

Detection rate: percentage of cases by instruments.

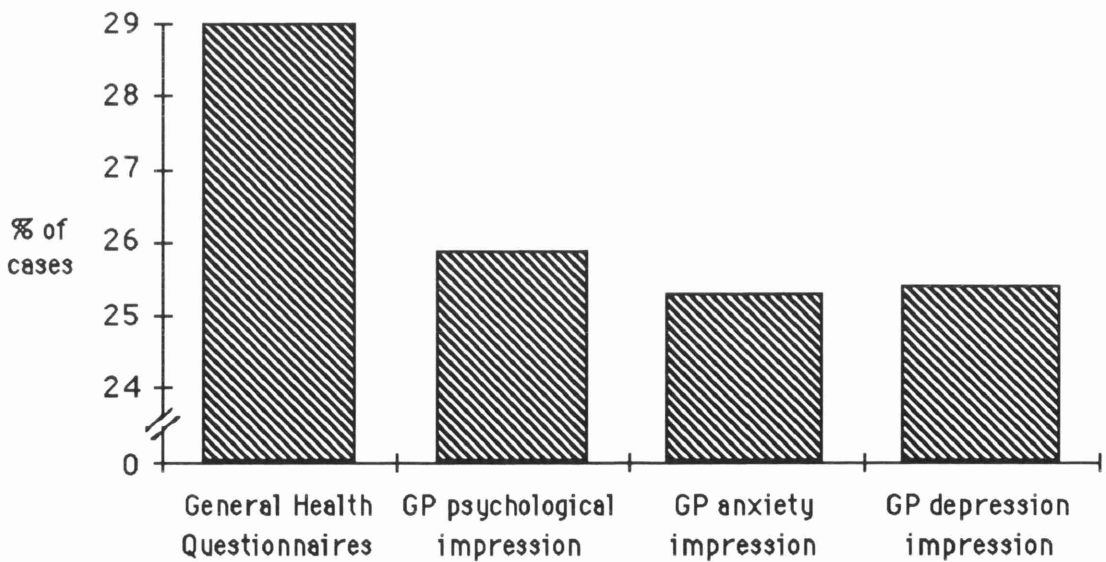


Figure 10.

Detection rate for individual GPs.

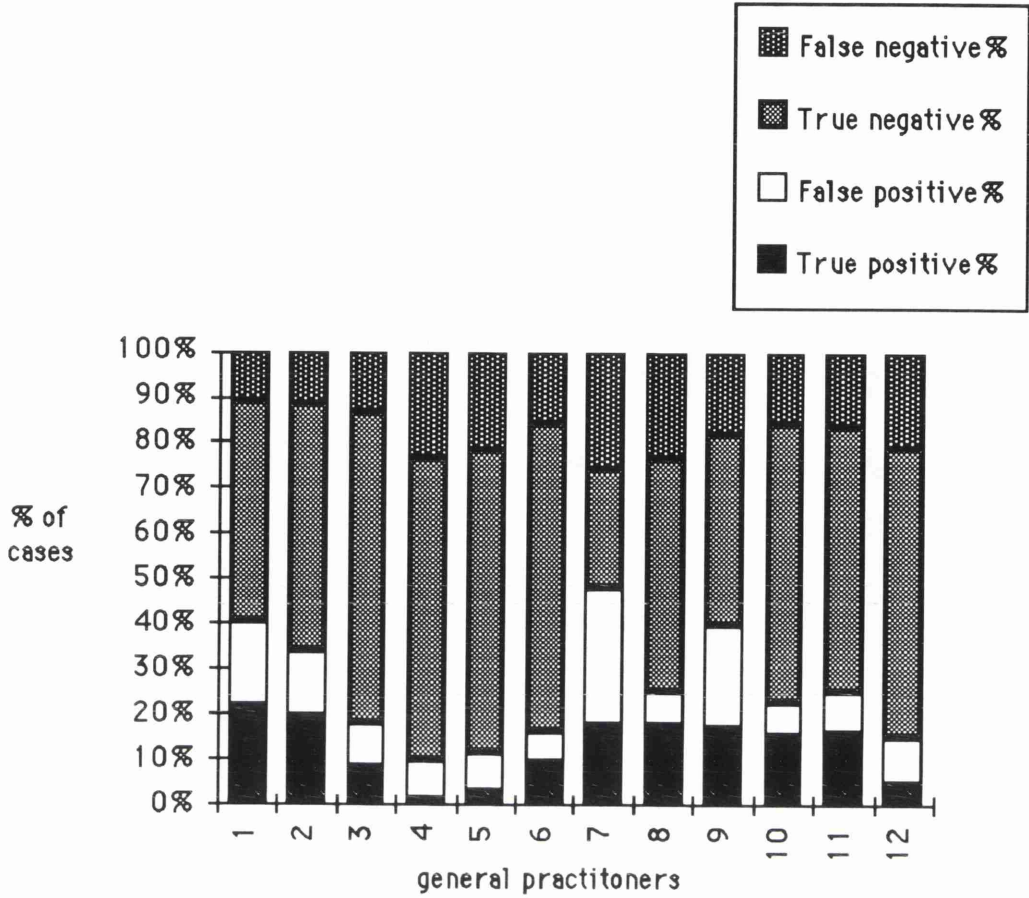


Figure 11.

Correlation between % of false +ve and % of true +ve.

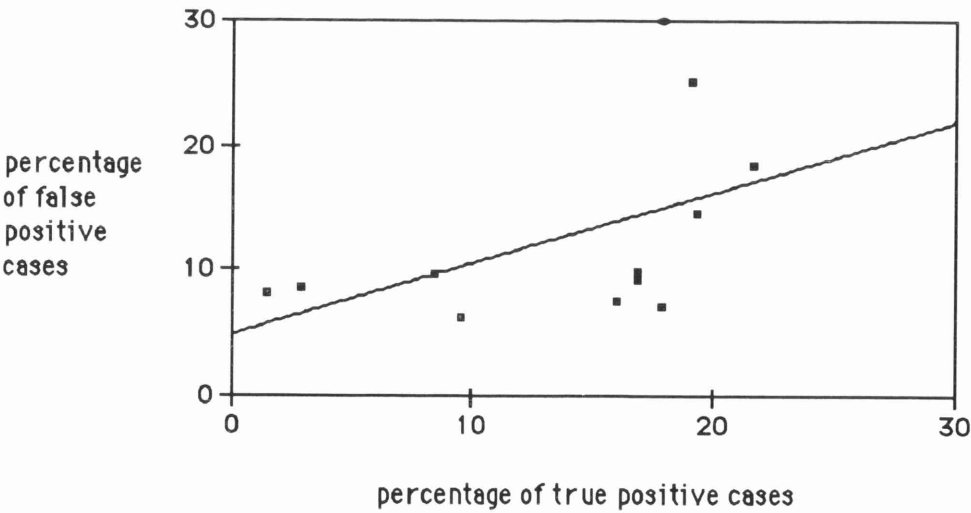


Figure 12.

Mean CSQ scores for psychological problems, anxiety, and depression.

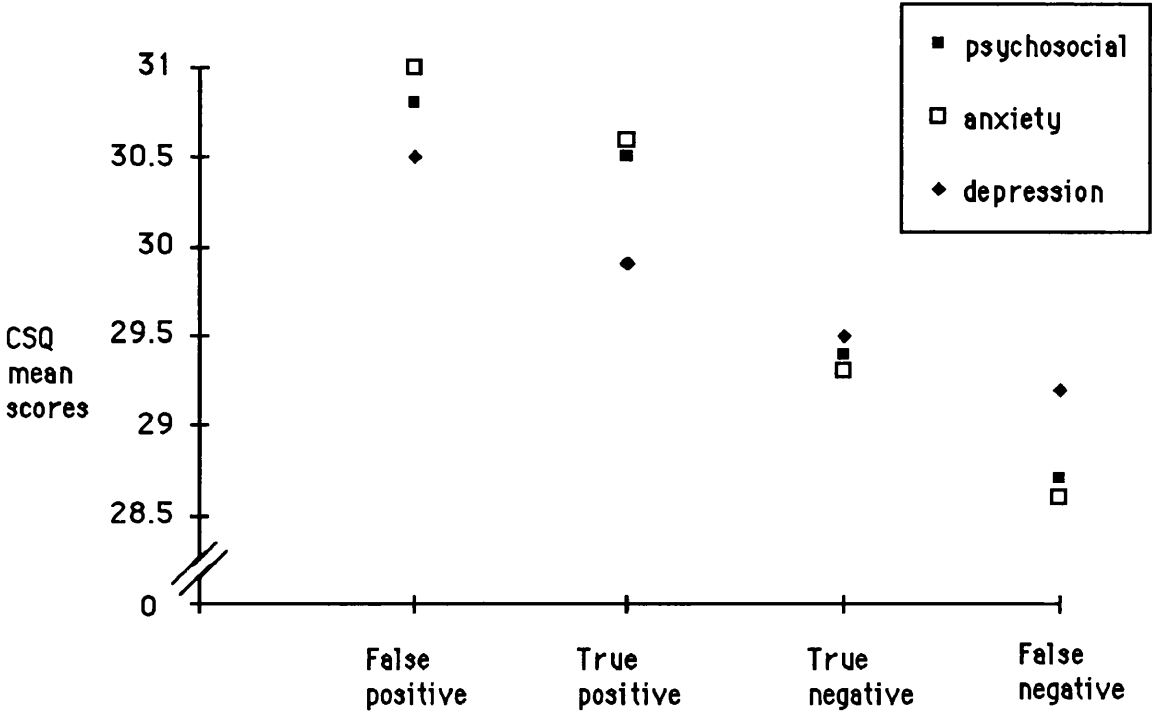


Figure 13.

Correlation between CSQ mean scores for true cases and the percentage of true cases.

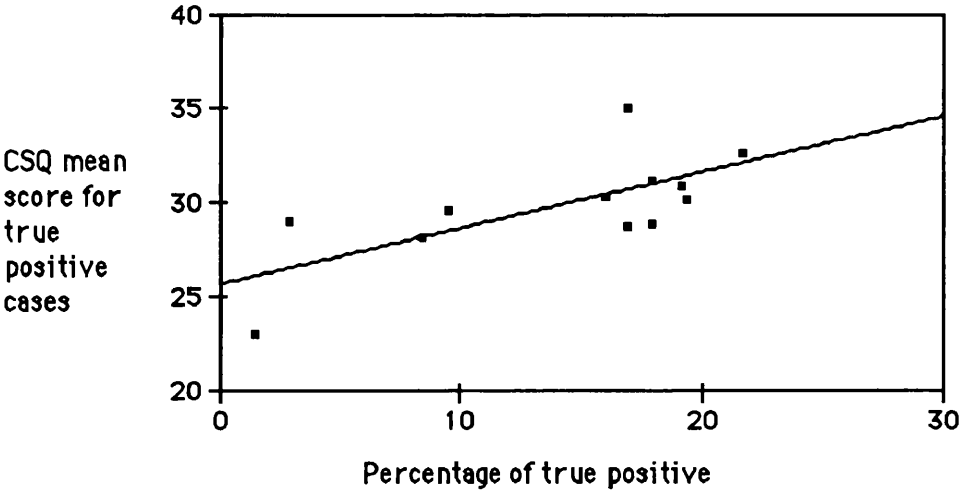


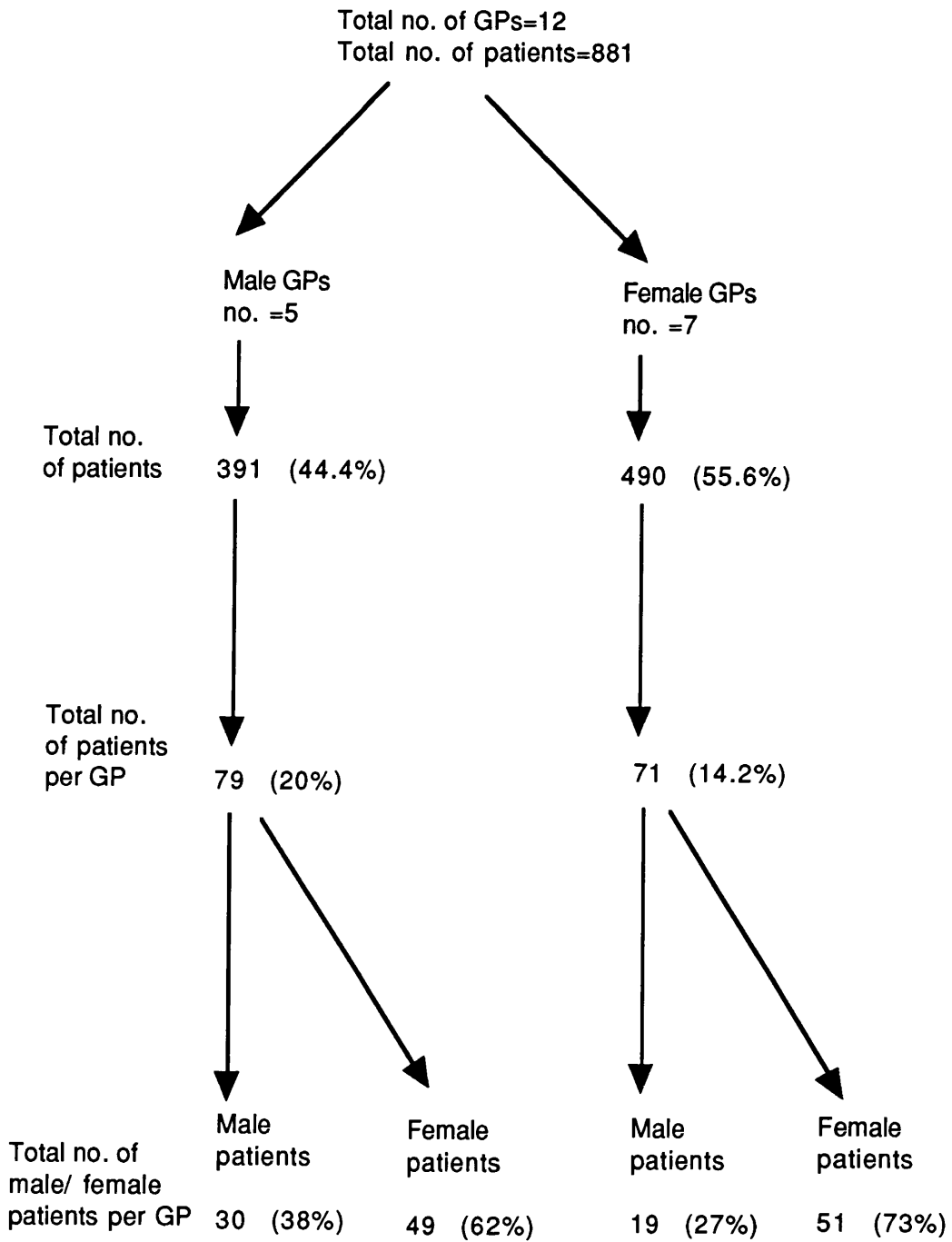
Figure 14.**Number of patients seen by GPs.**

Figure 15.

Computer study method.

300 adult patients (>16 years old) attending 300 consecutive consultations receive questionnaires when they inform receptionist of their arrival

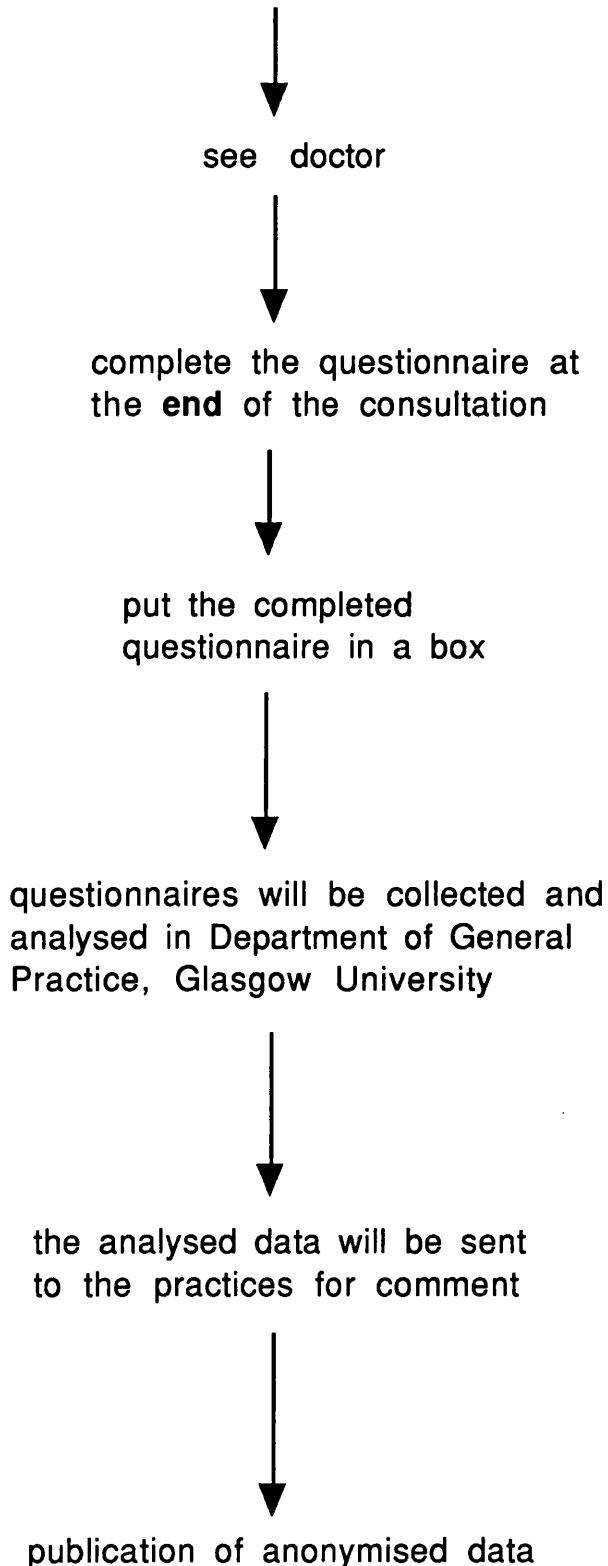


Figure 16.

General practitioners' response rate.

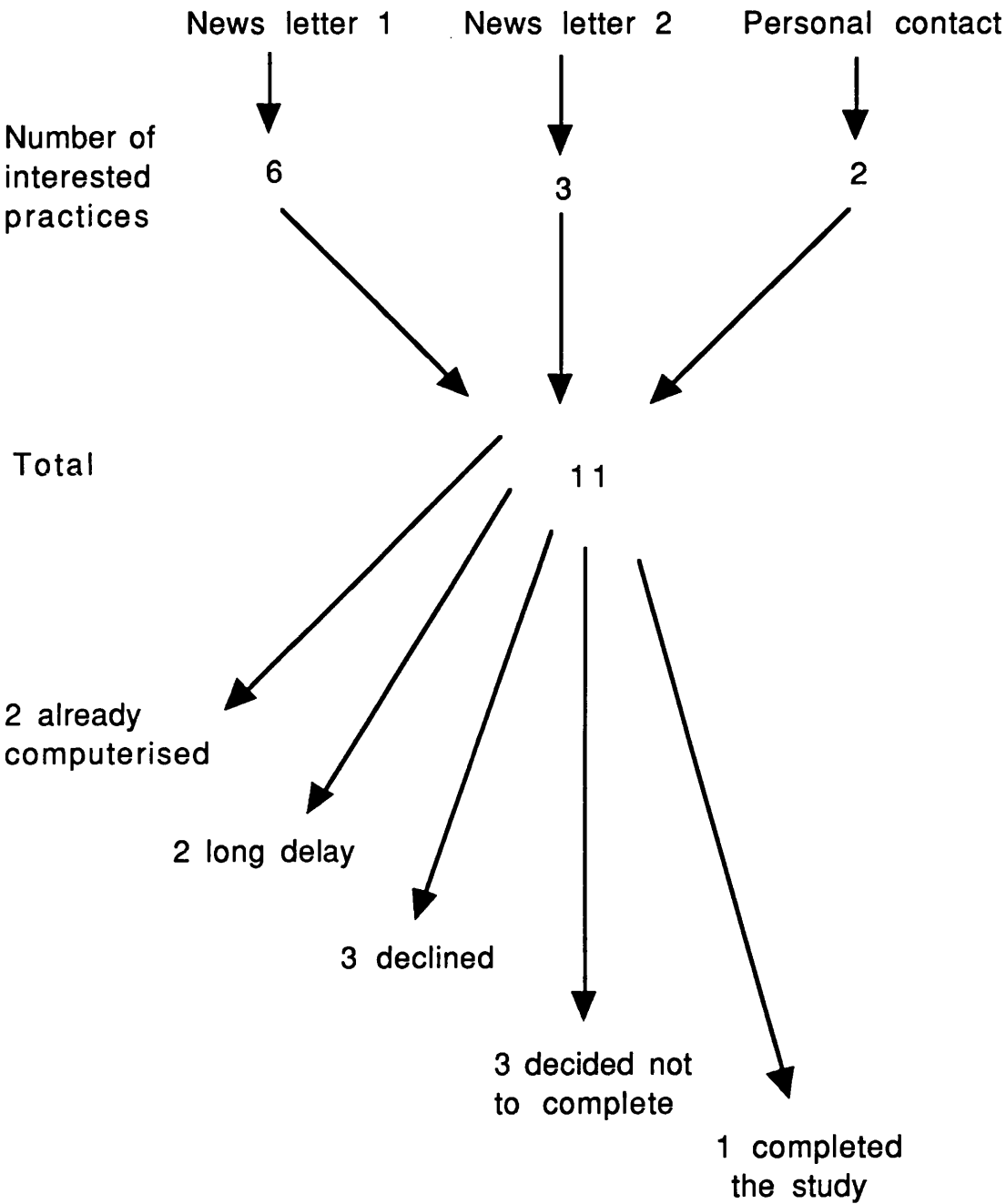


Figure 17.

Distribution of the total scores for the consultation satisfaction questionnaire in the computer study.

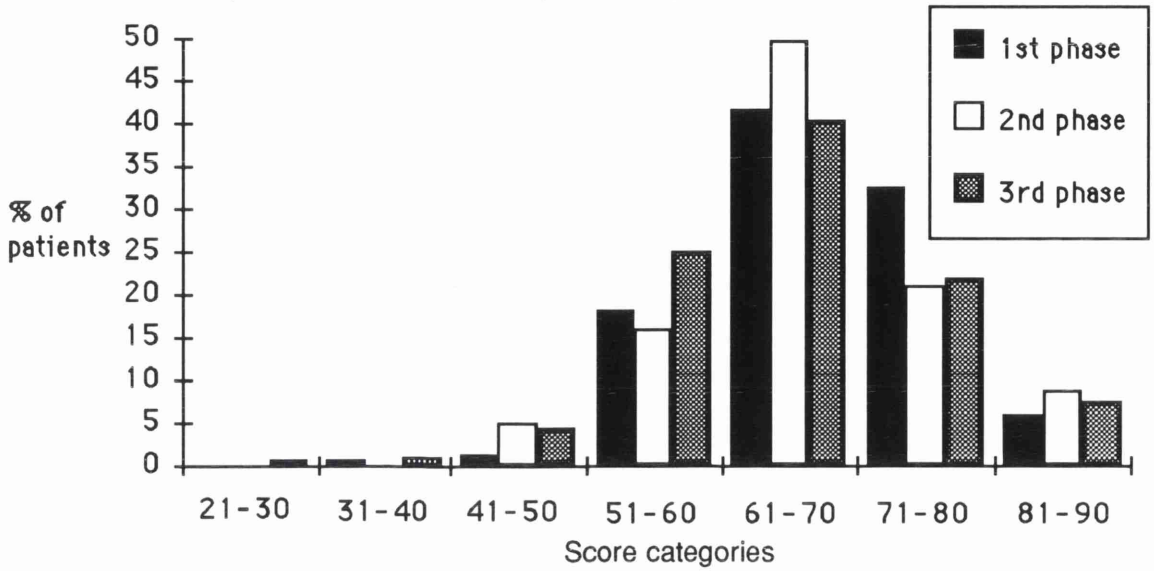


Figure 18.

Age-sex distribution of respondents.

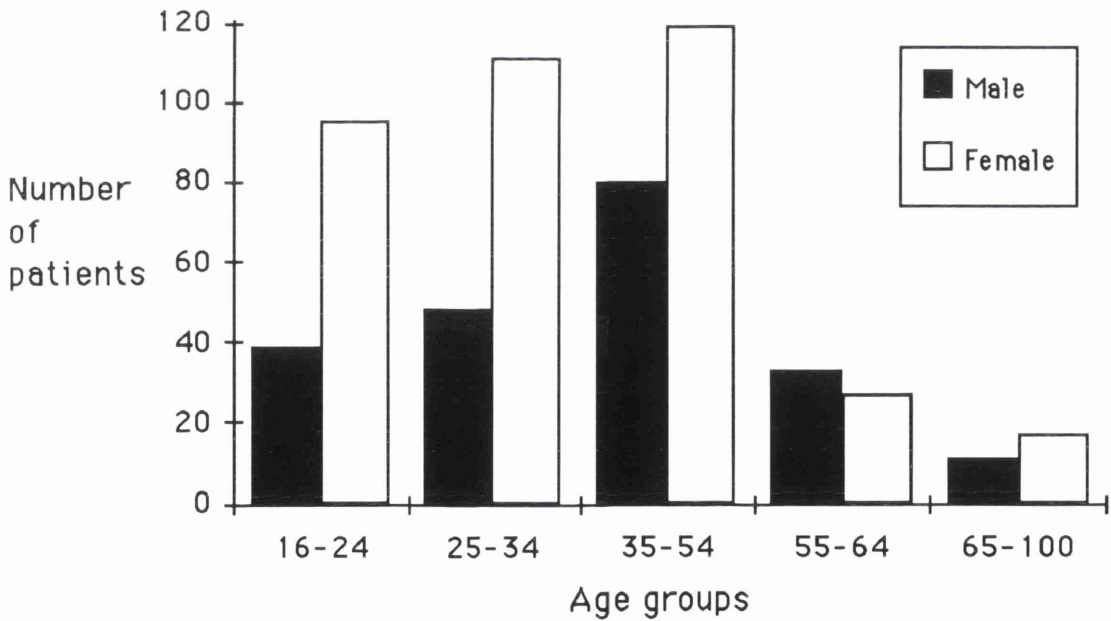


Figure 19.

Comparison of age distribution with that of Scottish population
(Source, The Patient's Charter. What Users Think 1992).

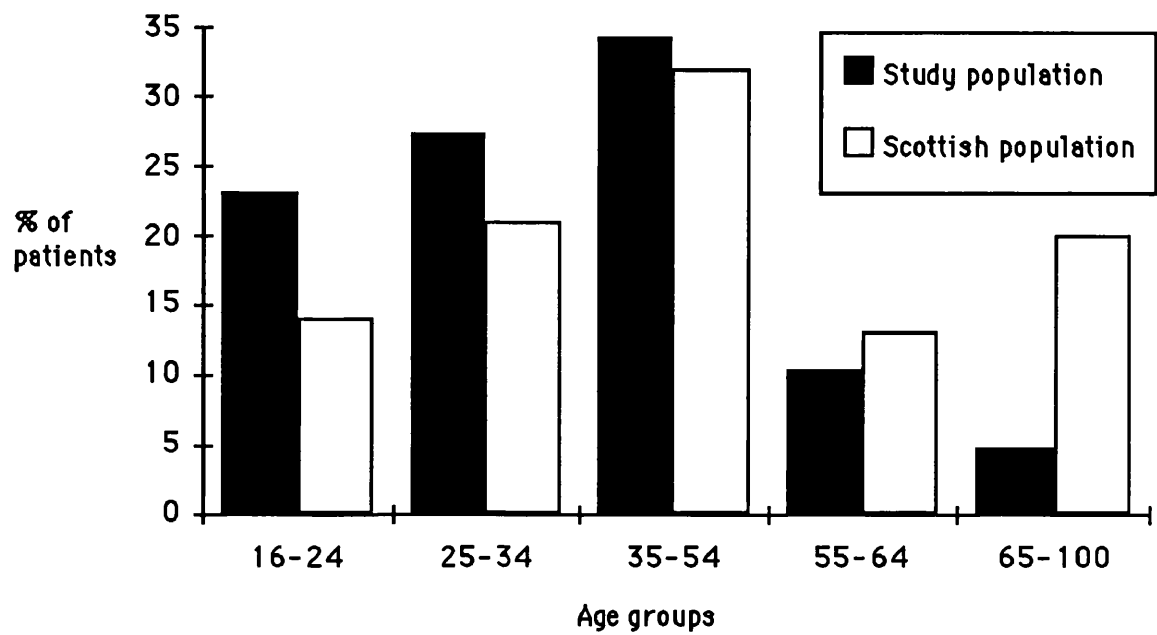


Figure 20.

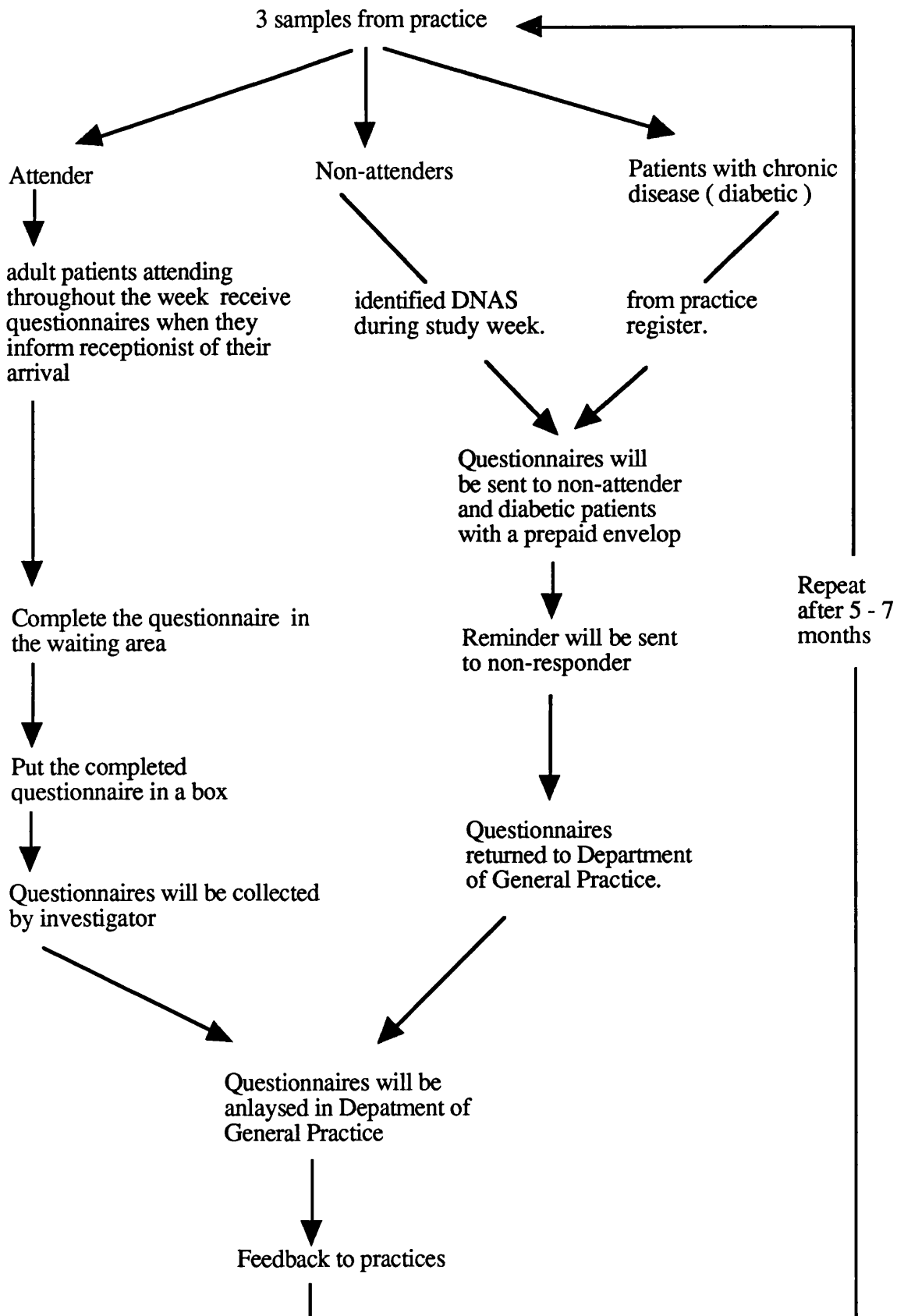
Audit study method.

Figure 21.

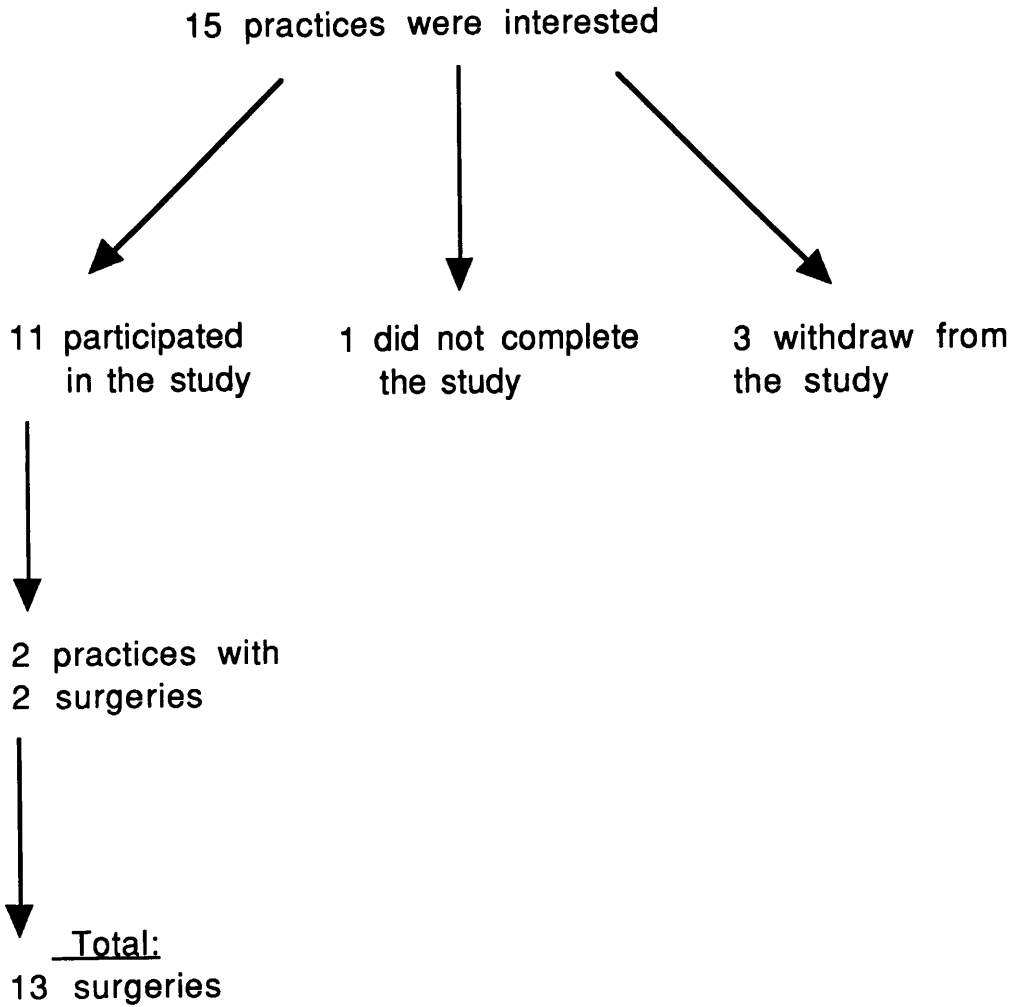
General practitioners' response rate.

Figure 22.

Age distribution.

Comparison of age distribution with that of Scottish population
(Source, The Patient's Charter. What Users Think 1992).

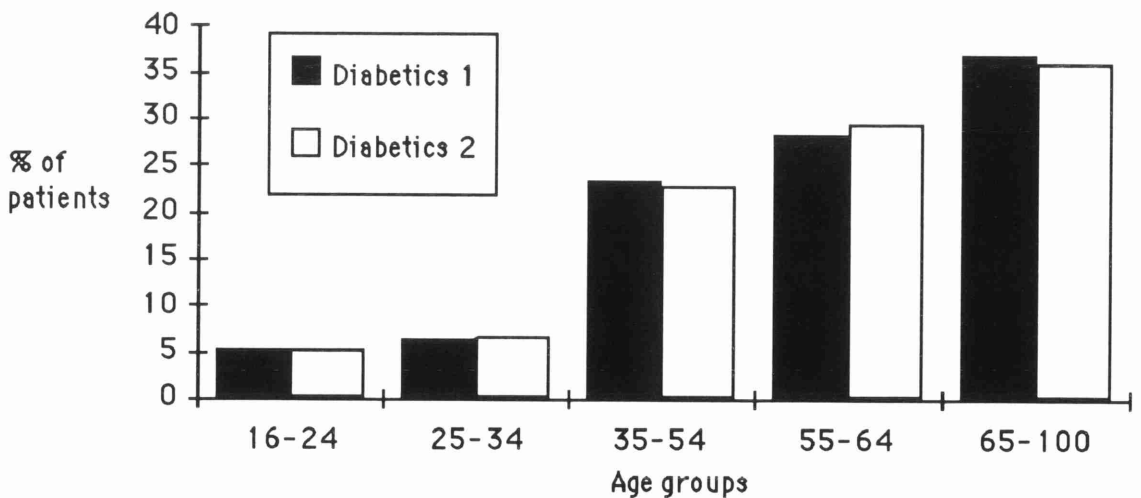
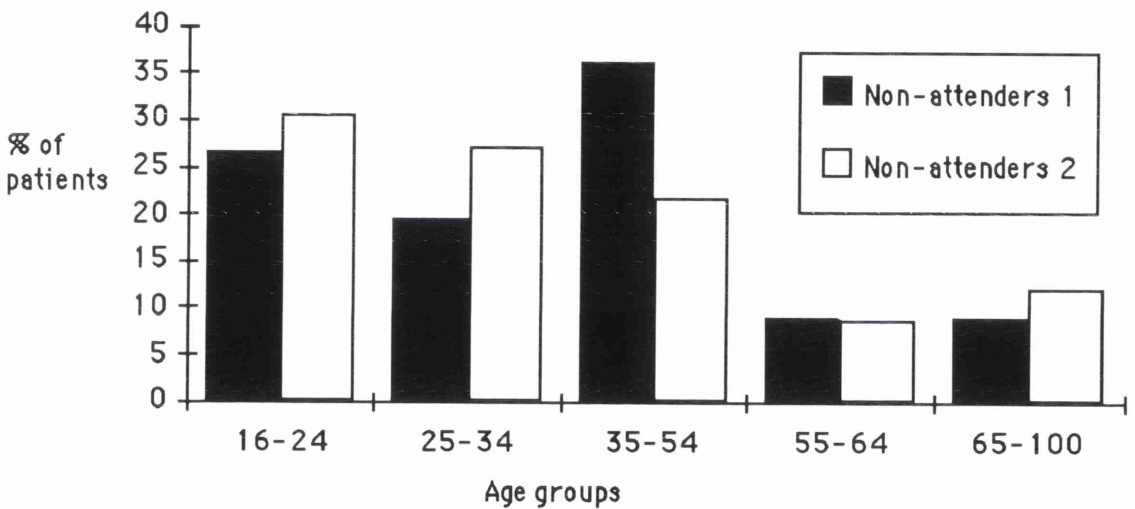
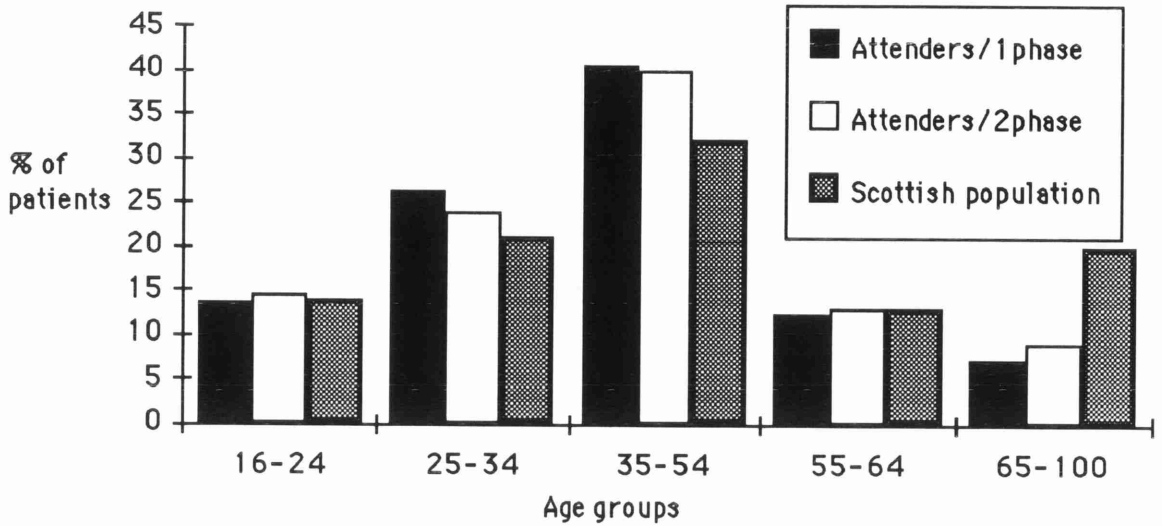
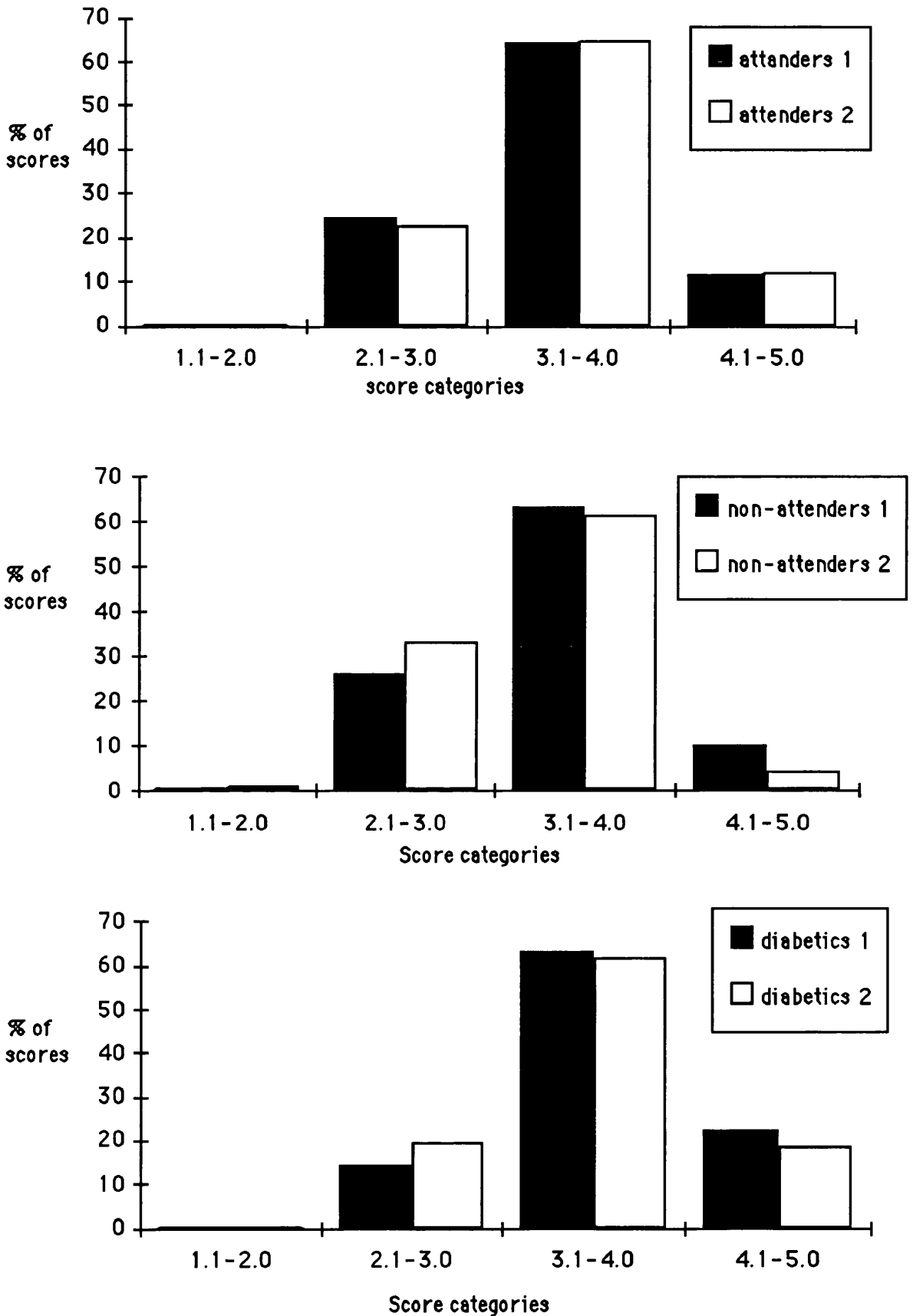


Figure 23.

Total (average per question) SSQ score distribution.



Figures 24.

Percentage of patients with different comments and those with no comments made for the three groups.

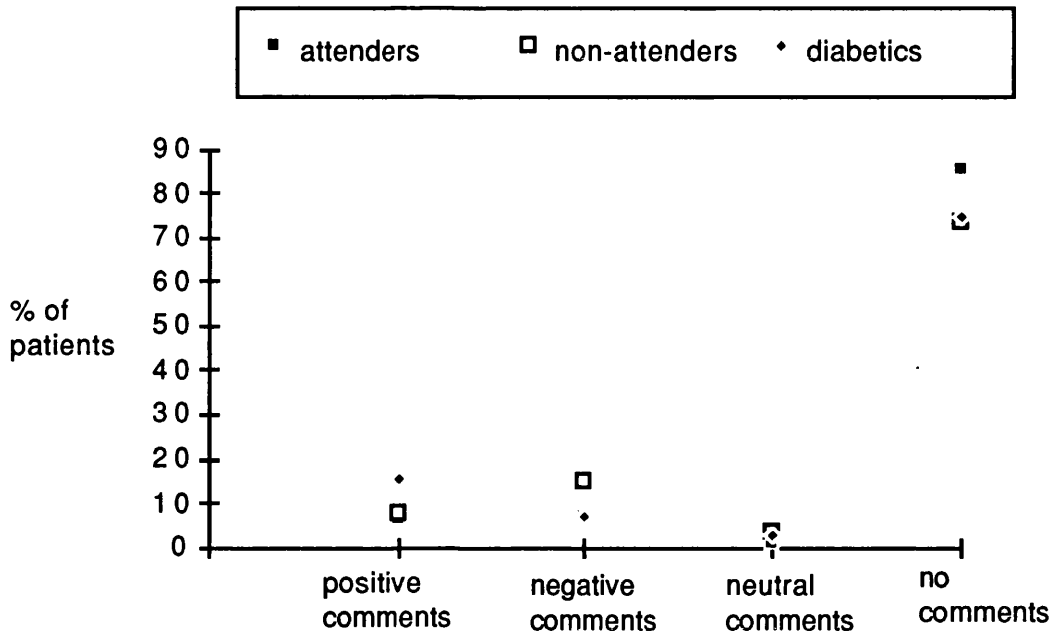


Figure 25.

Age distribution and percentage of comments made by attenders.

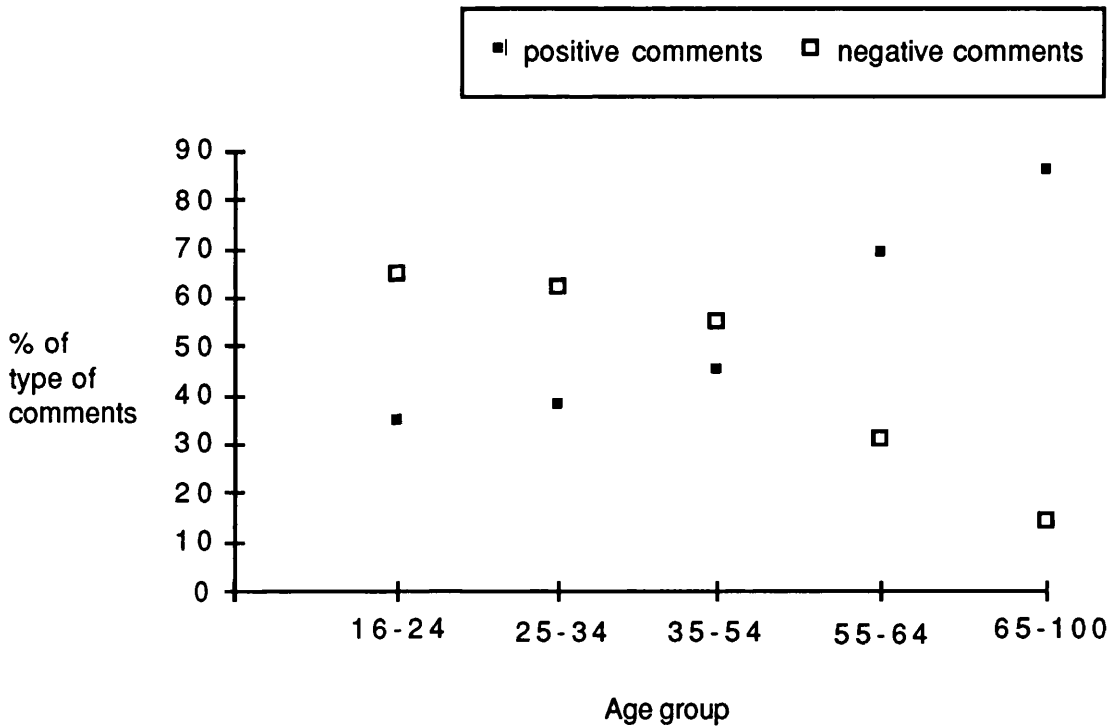


Figure 26.

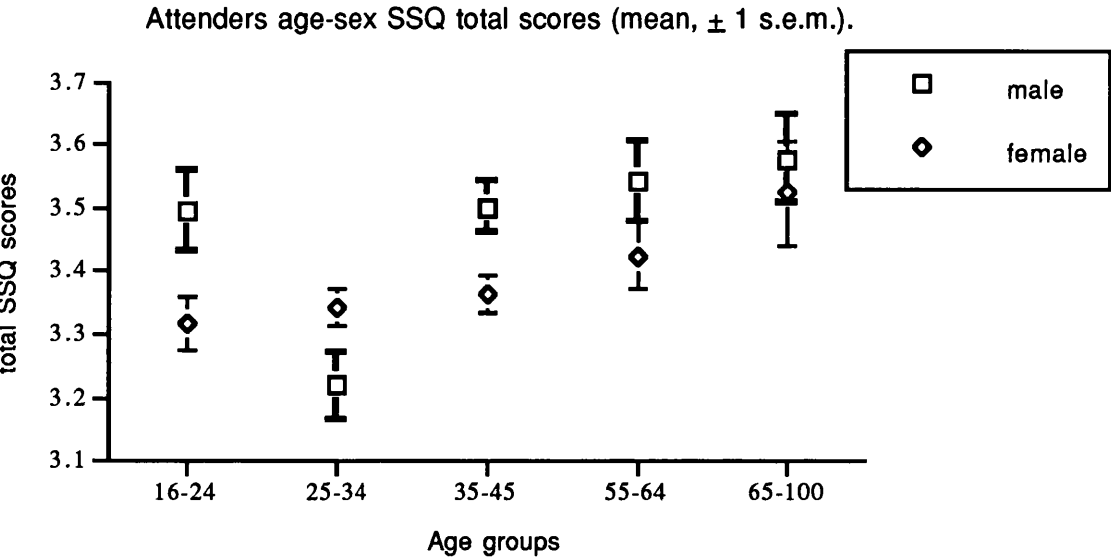


Figure 27.

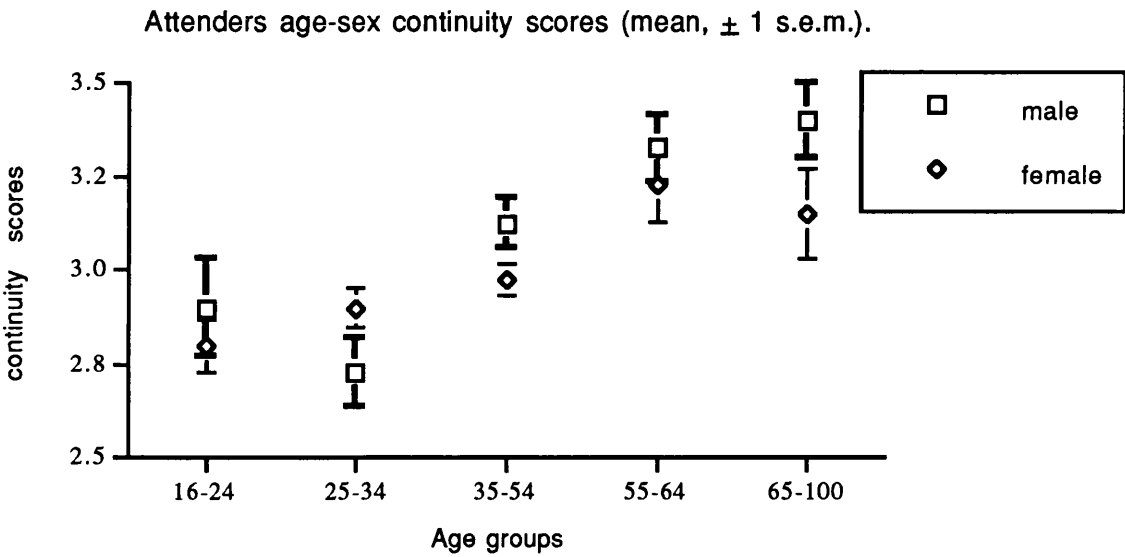


Figure 28.



Figure 29.

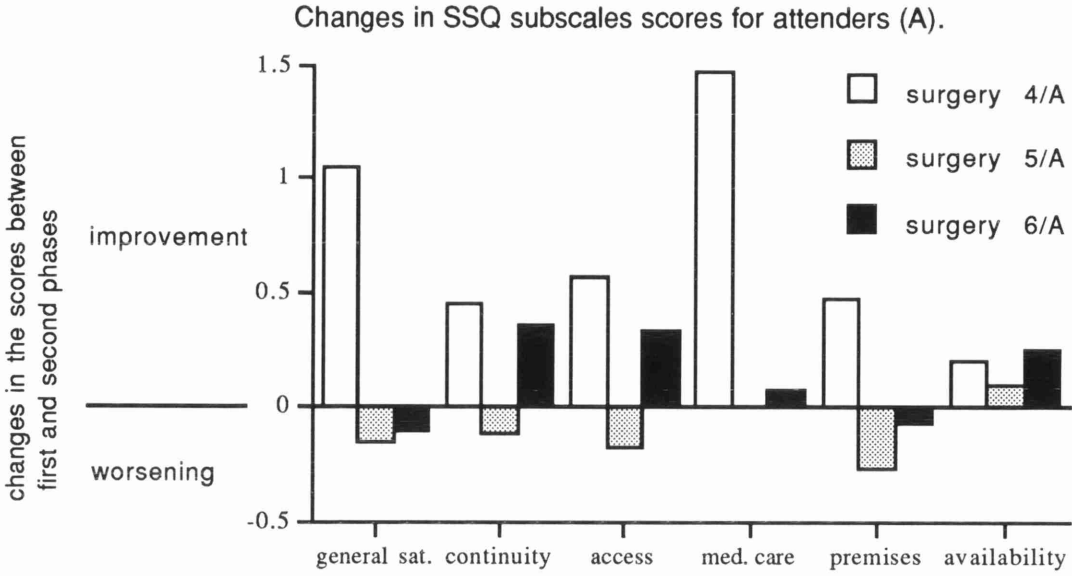


Figure 30.

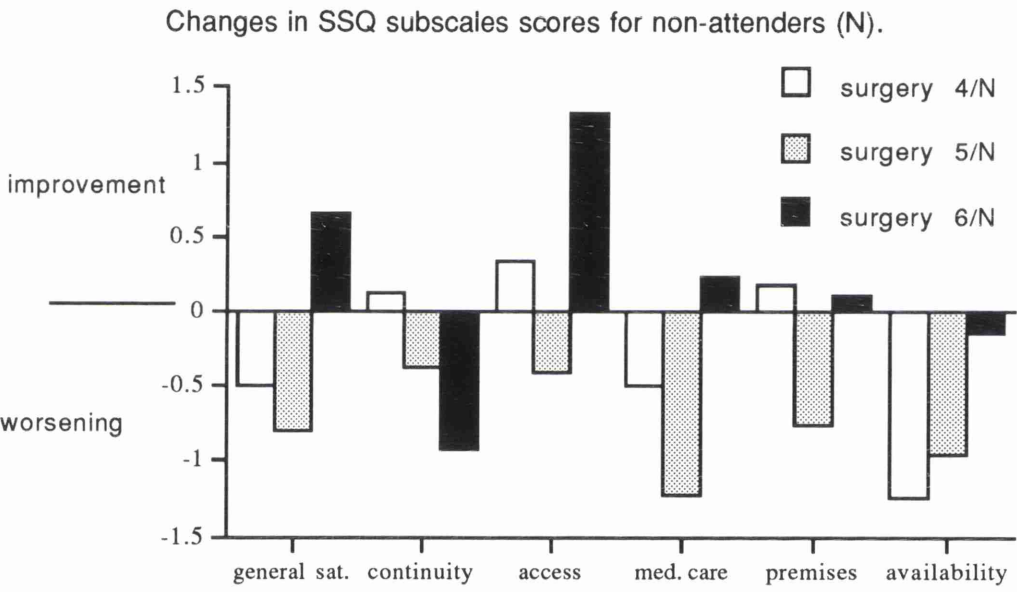


Figure 31.

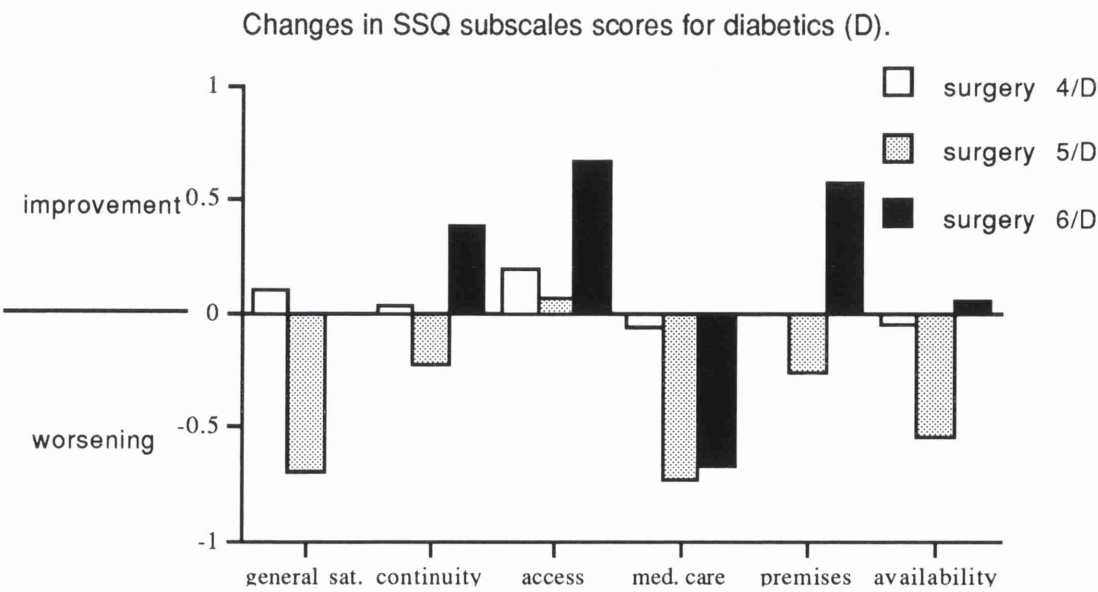


Figure 32.

Correlation between changes in scores and first phase scores for access subscale for attenders, $r=0.57$, $p=0.04$.

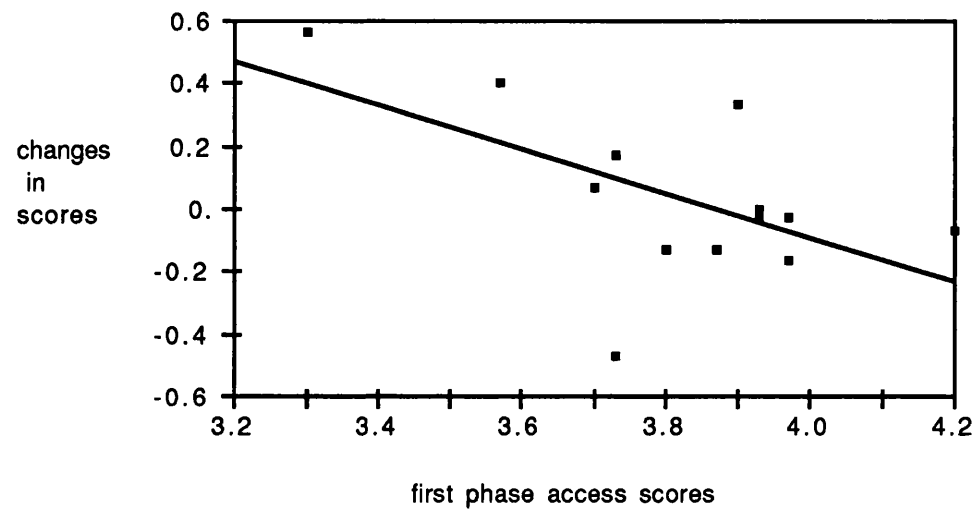


Figure 33.

Correlation between changes in scores and number of changes made per surgery for availability subscale for attenders, $r=0.8$, $p=0.001$, (surgery 7 excluded).

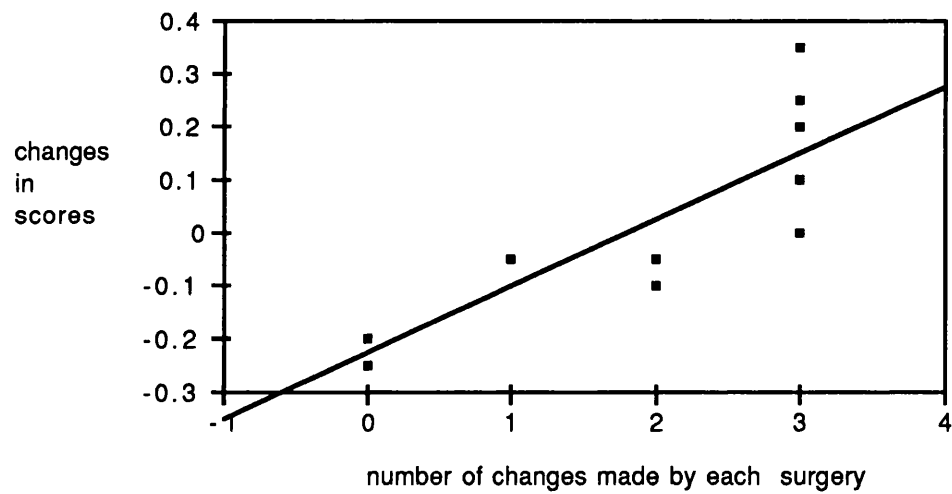


Table 1.

Comparing features of instruments.

Questi-onnaire	Development	Dimensions	No. of items	Scaling method used	Total scores	reliability (alpha)	Other features
CSQ	using an educational and psychological tests	-general satisfaction	3	Likert 5-point	90	0.87	-to be completed after the consultation - can be used for postal survey
		-professional care	7			0.83	
		-depth of relationship	5			0.82	
		-perceived time	3			0.91	
Short version of CSQ			8	Likert 5-point	40	0.8	
SSQ	using an educational and psychological tests	-general satisfaction	2	Likert 5-point	85	0.67	-it can be administered at any time - can be used for postal survey -patient should have a sufficient knowledge of the surgery
		-continuity	4			0.85	
		-access	3			0.76	
		-medical care	3			0.70	
		-premises	3			0.69	
		-availability	2			0.51	
GHQ28	using psychological tests	-anxiety	7	4-point response scale	28	0.90	- in most studies completed before the consultation - recommended for research and subscales use -different scoring methods -recommended cut-off point 4/5 -Dundee cut-off point 8/9
		-depression	7				
		-social	7				
		-somatic	7				
GPRQ (VAS)		-psychological	1	ordinal	50	0.66	-sensitive and accurate - can be used for objective and subjective ratings
		-anxiety	1		50	0.75	
		-depression	1		50	0.90	

Table 2.

Patients' response rate for individual GPs.

GPs	No. of questionnaires distributed	No. of questionnaires collected	No. of completed questionnaires (%)
1	125	107 (86)	92 (86)
2	125	077 (62)	62 (81)
3	125	113 (90)	83 (74)
4	101	081 (80)	73 (90)
5	125	079 (63)	70 (89)
6	125	114 (91)	95 (83)
7	125	074 (59)	67 (91)
8	125	100 (80)	56 (56)
9	125	093 (74)	68 (73)
10	125	113 (90)	81 (72)
11	125	119 (95)	65 (55)
12	125	118 (94)	81 (67)

Table 3.

Characteristics of respondents and non-respondents.

	Respondents	Non-respondents	P. value
age			
Mean (S D)	45.1 (17.3)	47.7 (18.2)	0.008*
No of cases	887	499	
sex			
M: F ratio (%)	31.8 : 68.2	29.3 : 70.71	0.34 **
No of cases	881	505	
general practitioner: psychological impression			
Mean (S D)	20.0 (16.8)	21.9 (16.6)	0.029***
No of cases	893	509	
general practitioner: anxiety impression			
Mean (S D)	18.7 (16.0)	21.2 (15.9)	0.002***
No of cases	893	509	
general practitioner: depression impression			
Mean (S D)	11.0 (13.1)	13.0 (14.6)	0.02***
No of cases	893	509	

S D = standard deviation.

* p value calculated using t-test.

** p value calculated using chi-square test.

*** p value calculated using Wilcoxon test.

Table 4.

General practitioners' characteristics.

GP's age	Median Range	39 (33 - 52)
GP's sex	M:F	5:7
years of experience as a hospital doctor	Median Range	5 (4 - 11)
years of experience as a GP	Median Range	8 (2 - 19)
Any psychiatric experiences and duration		
Posts (SHO)	Yes:No	6:6
Duration in weeks	Median Range	22 (12 - 24)
Courses e.g. Balint, group, etc counselling skills		
Balint	Yes:No	5:7
Duration in weeks	Median Range	96 (6 - 96)
The average number of patients you see per week		
	Median Range	135 (90 - 200)
Average consultation time (minutes).		
	Median Range	7.5 (6 - 10)
Do you give patients with psychosocial problems more time in your surgeries?		
	Yes:No	9:3
Do you have any special interest in dealing with psychosocial problems ?		
	Yes:No	6:6

Table 5.

Comparison of this study with Baker's study.

CSQ subscales	Original data* Mean score(SD)	Study data** Mean score(SD)
Professional care		
1	2.08(0.83)	4.26(0.81)
2	2.27(0.81)	4.07(0.82)
Depth of relationship		
1	2.93(1.03)	2.95(1.06)
2	2.74(0.99)	3.32(1.12)
3	2.47(0.92)	3.64(0.97)
4	2.09(0.86)	3.98(0.95)
5	2.28(0.95)	3.78(0.99)
Perceived time		
1	2.28(0.95)	3.75(1.1)

* Data from original paper (Baker R 1990), the total number of patients= 239.

** Glasgow study data, the total number of patients= 839

Table 6.

Correlation between questionnaires.

GPs	No. of cases	GPRQ Psych. imp. Vs GHQ total (p. value)	GPRQ Psych. imp. Vs CSQ total (p. value)	GHQ total Vs CSQ total (p. value)
1	92	0.51 (.000) ¹	0.15 (.161)	-0.09 (.420)
2	62	0.44 (.000) ¹	-0.20 (.116)	-0.34 (.008) ¹
3	83	0.26 (.016) ¹	0.14 (.208)	0.03 (.786)
4	73	0.17 (.160)	0.10 (.414)	-0.18 (.120)
5	70	0.19 (.114)	0.21 (.088) ²	0.14 (.239)
6	95	0.58 (.000) ¹	0.10 (.314)	-0.00 (.982)
7	67	0.15 (.227)	-0.00 (.984)	-0.04 (.778)
8	56	0.61 (.000) ¹	0.10 (.457)	0.06 (.690)
9	68	0.38 (.002) ¹	0.08 (.502)	0.02 (.871)
10	81	0.45 (.000) ¹	-0.07 (.563)	0.01 (.908)
11	65	0.50 (.000) ¹	0.08 (.531)	0.03 (.842)
12	81	0.22 (.050) ²	0.40 (.000) ¹	-0.09 (.453)
Pooled Practice data	983	0.39 (0.0001) ¹	0.15 (0.0001) ¹	-0.02 (0.643)

¹ p<0.05² p>0.05

Table 7.

CSQ mean score within age categories (range of scores 0-40).

Age categories	Total		Male patients		Female patients	
	No. of patients	mean score	No. of patients	mean score	No. of patients	mean score
16-24	110	28.4	21	27.9	88	28.5
25-34	192	28.9	45	28.2	145	29.1
35-54	301	29.3	101	30.3	197	28.8
55-64	138	30.2	54	31.1	83	29.6
65-100	152	31.2	59	31.1	88	31.3
P. value		0.0001		0.0026		0.0014

Table 8.

CSQ and subscales mean scores for male and female patients (range of scores 0-5).

	Male	Female	P. value
Professional care	4.3	4.1	0.001
Depth of relationship	3.6	3.5	N.S.
Perceived time	3.9	3.7	0.004
Total score	3.8	3.7	0.04

Table 9.

Patients' characteristics, GPRQ, GHQ, and CSQ median scores for individual GPs, with interquartile ranges in parentheses.

GP	No. of cases	Age (range)	% Fem- ale	GPRQ gen. psych. imp.	GHQ total	CSQ total
1	92	45 (30.0-62.0)	48	22.5 (9.0-41.0)	4 (0.0-11.0)	32 (28.3-35.8)
2	62	56 (35.5-69.5)	81	26 (14.0-42.0)	5 (1.0-9.8)	31 (29.0-34.0)
3	82	53 (34.8-64.5)	66	18 (11.0-29.0)	2 (0.0-8.0)	30 (26.0-34.0)
4	73	45 (33.5-63.0)	65	5 (2.0-16.5)	2 (0-8.5)	30 (27.0-33.5)
5	69	40 (30.0-50.5)	77	11.5 (3.0-25.0)	3.5 (0.0-8.3)	28 (23.8-31.0)
6	95	41 (31.0-56.0)	69	0 (0.0-22.0)	3 (0.0-9.0)	29 (26.0-32.0)
7	67	40 (27.0-52.0)	64	35 (9.0-42.0)	8 (2.0-12.0)	32 (27.0-35.0)
8	56	36.5 (26.0-47.8)	70	0 (0.0-35.0)	5 (0.0-14.0)	28.5 (26.0-32.0)
9	68	40.5 (28.5-60.0)	72	34 (23.0-47.8)	3.5 (0.0-10.0)	30 (27.0-32.0)
10	79	47 (27.0-60.0)	80	14 (5.5-35.0)	4 (0.0-10.0)	31 (27.0-33.0)
11	65	46 (30.0-60.0)	75	19 (5.5-36.5)	3 (0.0-9.5)	28 (25.5-32.0)
12	81	40 (29.0-49.5)	60	14 (7.5-27.5)	4 (0.0-9.0)	28 (24.0-32.0)
Total	893	44 (30.0-59.0)	68.9 (9.3)	16 (4.5-36)	4 (0.0-10.0)	30 (26.5-33.0)

Table 10.

Comparison of the results of three studies detection rate and morbidity.

	Glasgow	Glenrothes	Lewsiham
No. of GPs.	12	1	18
No. of practices	11	1	8
No. of patients	893	234	809
Patients selection	consecutive	random	consecutive
GHQ cut-off point	8/9	8/9	4/5
High scorers%.	25.5	26.5	19.3
Probable prevalence%.	42	28	42.9
Proportion identified by both GP and GHQ%.	12.8	18.1	13.7
Accuracy (Spearman's correlation coefficient)%.	0.34	-	0.35
Sensitivity%.	44	66	-
Specificity%.	82	89	-

Table 11.

Comparison of detection rates in different centres by sex.

	Glasgow		Glenrothes		Lewsiham	
	Male	Female	Male	Female	Male	Female
High scorers%.	23.2	31.8	22	31	16.5	20.4
Probable prevalence%.	25	30	22	30	38.5	45.6
Proportion identified by both GP and GHQ%.	10.7	15.3	15.7	20.6	10.0	15.2
Sensitivity%.	42	50	72	66	-	-
Specificity%.	83	76	88	87	-	-

Table 12.

Psychosocial problems, anxiety, and depression detection rate

	True positive	False negative	False positive	True negative
psychosocial problems				
no. (%)	114 (12.8)	145 (16.2)	113 (12.7)	521 (58.3)
anxiety				
no. (%)	111 (12.4)	148 (16.6)	115 (12.9)	519 (58.1)
depression				
no. (%)	119 (13.3)	140 (15.7)	108 (12.1)	526 (58.9)

Table 13.

CSQ mean scores for patients with psychosocial problems, anxiety, and depression.

	True positive	False negative	False positive	True negative
psychosocial problems				
mean (sd)	30.5 (5.2)	28.7 (5.8)	30.8 (4.6)	29.4 (4.6)
p. value	0.01		0.007	
anxiety				
mean (sd)	30.6 (5.2)	28.6 (5.7)	31.0 (4.8)	29.3 (5.6)
p. value	0.004		0.002	
depression				
mean (sd)	29.9 (5.7)	29.2 (5.5)	30.5 (4.5)	29.5 (4.6)
p. value	0.3		0.08	

Table 14.

Detection rates and patients' satisfaction for individual GPs.

GPs	True positive	False negative	False positive	True negative	Sensitivity %	Specificity %	GP diagnostic accuracy
	mean CSQ No. (%)	mean CSQ No. (%)	mean CSQ No. (%)	mean CSQ No. (%)			
1	32.6 20 (21.7)	27.5 10 (10.9)	32.5 17 (18.5)	32.1 45 (48.9)	66	73	65%
2	30.1 12 (19.4)	30.6 7 (11.3)	28.9 9 (14.5)	32.2 34 (54.8)	63	79	74.2%
3	28.2 7 (8.4)	32.5 11 (13.3)	33.5 8 (9.6)	29.6 57 (68.7)	39	88	77.1%
4	23 1 (1.4)	29.2 17 (23.3)	32.5 6 (8.2)	30.3 49 (67.1)	5	89	68.5%
5	29 2 (2.9)	28.5 15 (21.4)	26.7 6 (8.6)	26.6 47 (67.1)	12	89	70%
6	29.6 9 (9.5)	26.5 15 (15.8)	29 6 (6.3)	28.4 65 (68.4)	38	92	77.9%
7	31.2 12 (17.9)	29.1 17 (25.4)	31 20 (29.9)	33.2 18 (26.9)	41	47	44.8%
8	28.8 10 (17.9)	29.3 13 (23.2)	30.3 4 (7.1)	27.7 29 (51.8)	44	88	69.7%
9	30.9 13 (19.1)	25.3 6 (8.8)	30.5 17 (25)	30.1 32 (47.1)	68	65	66.2%
10	30.3 13 (16)	29.1 10 (12.3)	31.7 6 (7.4)	30.1 52 (64.2)	57	90	80.2%
11	28.7 11 (16.9)	31.7 7 (10.8)	27 6 (9.2)	27.9 41 (63.1)	61	87	80%
12	35 4 (4.9)	26.8 17 (21)	31.8 8 (9.9)	27.4 52 (64.2)	19	89	69.1%
To tal	30.8 114 (12.8)	28.7 145 (16.2)	30.8 113 (12.7)	29.4 521 (58.3)	44	82	71.1%

Table 15.

Patient satisfaction with professional care
(scores range 0-10).

	High GPRQ	Low GPRQ	P. value
High GHQ			
mean (SD)	8.5 (1.5)	8.3 (1.6)	0.2
Low GHQ			
mean (SD)	8.6(1.4)	8.2 (1.4)	0.006

Table 16.

Patient satisfaction with depth of relationship
(scores range 0-25).

	High GPRQ	Low GPRQ	P. value
High GHQ			
mean (SD)	18.3 (3.7)	16.9(4.3)	0.005
Low GHQ			
mean (SD)	18.5 (3.1)	17.4 (3.4)	0.002

Table 17.

Patient satisfaction with perceived time
(scores range 0-5).

	High GPRQ	Low GPRQ	P. value
High GHQ			
mean (SD)	3.6 (1.2)	3.6 (1.2)	0.8
Low GHQ			
mean (SD)	3.8 (1.1)	3.8 (1.0)	0.9

Table 18.

Male GPs and patients' sex in relation to detection rate and total CSQ scores.

MALE DOCTOR	True positive	False negative	False positive	True negative	Sensitivity	Specificity
Male patients mean CSQ	32.5	28.6	32.7	30.4	47	84
no. (%)	16 (10.8)	18 (12.2)	18 (12.2)	96 (64.9)		
p. value	0.04		0.06			
Female patients mean CSQ	29.9	29.4	31.1	28.8	37	84
no. (%)	26 (10.7)	44 (18.1)	27 (11.1)	146 (61.1)		
p. value	0.6		0.003			

Table 19.

Female GPs and patients' sex in relation to detection rate and total CSQ scores.

FEMALE DOCTOR	True positive	False negative	False positive	True negative	Sensitivity	Specificity
Male patients mean CSQ	31.7	28.5	29.6	29.5	38	82
no. (%)	14 (10.6)	23 (17.4)	17 (12.9)	78 (59.1)		
p. value	0.09		0.9			
Female patients mean CSQ	29.6	28.3	30.2	29.3	49	79
no. (%)	55 (15.4)	58 (16.2)	51 (14.2)	194 (54.2)		
p. value	0.27		0.46			

Table 20.

GPs' age, detection rate and patients' satisfaction.

	True positive	False negative	False positive	True negative	Sensitivity	Specificity
<40 years (6 GPS)					49	80
mean CSQ	30.9	28.7	31.2	29.4		
no. (%)	70 (15.8)	74 (16.7)	61 (13.8)	237 (53.6)		
p. value	0.01		0.008			
=>40 years (6 GPS)					38	85
mean CSQ	29.7	28.8	30.3	29.3		
no. (%)	44 (9.8)	71 (15.7)	52 (11.5)	284 (63)		
p. value	0.45		0.3			

Table 21.

Patients' response rate during the three phases of the study.

	First phase	Second phase	Third phase
Number of questionnaires distributed	300	300	300
Number of questionnaires returned (%)	212 (71.0%)	258 (86.0%)	234 (78.0%)
Completed questionnaires of those distributed (%)	166 (55%)	226 (75%)	192 (64%)

Table 22.

Characteristics of patients who completed and who did not complete the questionnaires for the three phases.

	Completed questionnaires	Uncompleted questionnaires	P. values
No. (%) of the total distributed	584 (83)	120 (17)	
Age Mean (SD)	36.9 (0.6)	47.3 (1.7)	0.0001*
Sex M: F ratio (%)	36.4: 63.6	25.2: 74.8	0.03**
Occupation (%) employed	54.6	42.1	0.0001**
unemployed	9.3	8.4	
housewives	20.1	25.2	
students	9.6	3.7	
retired	6.4	20.6	
Last visit (%) within days	45.2	40.8	0.2**
within weeks	48.6	47.6	
2-6 months	4.1	9.7	
7-12 months	2.2	1.9	
Prescriptions (%) Yes	4.4	8.3	0.1**
No	95.6	91.7	
computer (%) e.g. good idea Yes	84.2	84.0	1.0**
No	15.8	16.0	

* P. value calculated using t- test

** P. value calculated using chi-square test

Table 23.

Characteristics of patients with different attitudes to the presence of computer in the consultation for the three phases.

	Good idea	Bad idea	P. values
No. (%)	479 (84)	89 (16)	
Age Mean (SD)	36.6 (14.1)	37.4 (16.3)	0.98
Sex M: F ratio (%)	37.1: 62.9	32.6: 67.4	> 0.3

Table 24.

The results of questions related to GPs paper work load in the consultation "do you think the doctor spends too much time writing notes and making out prescriptions?"

	Before Desk-top	6/52 After Computer	6/12 After Desk-top	P. value*
No. of patients	166	226	192	0.6
Yes	7 (4.3%)	12 (5.4%)	6 (3.2%)	
No	155 (95.7%)	211 (94.6%)	183 (96.8%)	

Table 25.

Changes in patients' attitudes to desk top computer.

	Before Desk-top	6/52 After Computer	6/12 After Desk-top	P. value*
No. of patients	166	226	192	0.02
Good idea	131 (77.4%)	194 (85.4%)	160 (88.3%)	
Bad idea	35 (22.6%)	32 (14.6%)	22 (11.7%)	

* P. value calculated using chi-square test

Table 26.

CSQ mean scores within age categories (range of scores 0-90).

Age categories	1st phase		2nd phase		3rd phase	
	No. of patients	mean (sd)	No. of patients	mean (sd)	No. of patients	mean (sd)
16 - 24	43	66.4 (7.3)	51	65.4 (8.4)	41	62.9 (9.2)
25 - 34	37	67.4 (9.0)	68	66.7 (8.9)	54	64.1 (10.3)
35 - 54	60	67.6 (9.8)	67	67.4 (10.6)	74	67.6 (9.7)
55 - 64	17	70.9 (7.3)	27	67.3 (8.2)	16	70.1 (11.5)
65 - 100	9	64.9 (5.0)	13	72.1 (10.0)	7	63.7 (10.3)

Table 27.

Patients' sex and CSQ mean scores (range of scores 0-90).

	male		female	
	No. of patients	mean (sd)	No. of patients	mean (sd)
1st phase	63	67.2 (7.8)	101	67.7 (9.0)
2nd phase	84	66.2 (9.9)	142	67.4 (9.0)
3rd phase	64	65.7 (9.1)	126	65.7 (10.7)
P. value	0.77		0.21	

Table 28.

Change in CSQ -subscales and overall scores.

	first phase	second phase	third phase
General satisfaction (total score=15)			
mean (SD)	11.9 (2.2)	11.7 (2.2)	11.6 (2.2)
Professional care (total score=35)			
mean (SD)	28.2 (4.1)	27.8 (4.1)	27.4 (4.6)
Depth of relationship (total score=25)			
mean (SD)	16.4 (3.6)	16.5 (3.6)	16.0 (4.0)
Perceived time (total score=15)			
mean (SD)	11 (2.5)	11.3 (2.8)	10.7 (2.8)
Total CSQ scores (total score=90)			
mean (SD)	67.4 (8.6)	67 (9.3)	65.7 (10.1)

Table 29.

Comparison in CSQ -subscales and overall scores for patients with different attitudes to the desk top computer.

	Good idea No. of cases=473 Mean (SD)	Bad idea No. of cases=89 Mean (SD)	P. values*
General satisfaction	11.8 (0.1)	11.3 (0.3)	0.089
Professional care	28.0 (0.2)	26.7 (0.5)	0.006
Depth of relationship	16.5 (0.2)	14.9 (0.4)	0.0001
Perceived time	11.0 (0.1)	10.6 (0.3)	0.1
Total scores	67.3 (0.4)	63.4 (1.0)	0.0005

* P. value calculated using Wilcoxon test.

Table 30.

First and second phase attenders response rate.

Surgery number	first phase			second phase		
	Number of questionnaires distributed	No. of questionnaires collected (%)	No. of completed questionnaires of those distributed (%)	Number of questionnaires distributed	No. of questionnaires collected (%)	No. of completed questionnaires of those distributed (%)
1 *	135	93 (69.0%)	56 (41.5%)	135	122 (90.4%)	77 (57.0%)
2	200	126 (63.0%)	96 (48.0%)	200	101 (50.5%)	74 (37.0%)
3	200	144 (72.0%)	94 (47.0%)	200	196 (98.0 %)	133 (67.0%)
4	200	183 (91.5%)	110 (55.0%)	200	193 (96.5%)	124 (62.0%)
5	120	114 (91.0%)	73 (61.8%)	120	112 (85.0%)	72 (60.0%)
6	80	63 (84.0%)	39 (62.0%)	80	54 (79.0%)	32 (40.0%)
7	200	146 (73.0%)	84 (42.0%)	200	181 (90.5%)	110 (55.0%)
8	200	194 (97.0%)	119 (60.0%)	200	197 (98.5%)	132 (66.0%)
9	200	182 (91.0%)	118 (59.0%)	200	183 (91.5%)	108 (54.0%)
10	200	195 (97.5%)	116 (58.0%)	200	193 (96.5%)	120 (60.0%)
11	200	190 (95.0%)	134 (67.0%)	200	179 (89.5%)	130 (65.0%)
12	200	157 (78.5%)	112 (56.0%)	200	169 (84.5%)	122 (61.0%)
13	200	189 (94.5%)	128 (64.0%)	200	195 (97.5%)	135 (68.0%)
TOTAL	2335	1976 (84.6%)	1279 (55.0%)	2335	2075 (88.9%)	1369 (59%)

* pilot study

Table 31.

First and second phase non-attenders response rate.

Surgery number	first phase			second phase		
	Number of questionnaires distributed	No. of questionnaires collected (%)	No. of completed questionnaires of those distributed (%)	Number of questionnaires distributed	No. of questionnaires collected (%)	No. of completed questionnaires of those distributed (%)
1	20	16 (80%)	14 (70.0%)	16	8 (50%)	7 (43.8%)
2	6	6 (100%)	4 (66.6%)	6	6 (100%)	5 (83.3%)
3	21	5 (23.8%)	5 (23.8%)	9	6 (67%)	6 (66.6%)
4	2	2 (100%)	2 (100%)	6	2 (33%)	2 (33.3%)
5	29	16 (55.2%)	11 (37.9%)	19	11 (58%)	8 (42.1%)
6	9	4 (44.4%)	3 (33.3%)	3	2 (67%)	1 (33.3%)
7	6	3 (50%)	3 (50.0%)	42	26 (62%)	17 (40.5%)
8	98	55 (56%)	42 (42.9%)	33	17 (52%)	14 (42.4%)
9	6	4 (66.7%)	4 (66.6%)	4	3 (75%)	2 (50.0%)
10	15	6 (40%)	5 (33.3%)	16	15 (94%)	11 (68.8%)
11	9	7 (77.8%)	5 (55.5%)	10	5 (50%)	5 (50.0%)
12	98	56 (57%)	48 (49.0%)	30	13 (43%)	10 (33.3%)
13	25	13 (52%)	9 (36.0%)	14	8 (57%)	7 (50.0%)
TOTAL	346	193 (55.5%)	155 (44.8%)	208	122 (59%)	95 (45.7%)

Table 32.

First and second phase diabetics response rate.

Surgery number	first phase			second phase		
	Number of questionnaires distributed	No. of questionnaires collected (%)	No. of completed questionnaires of those distributed (%)	Number of questionnaires distributed	No. of questionnaires collected (%)	No. of completed questionnaires of those distributed (%)
1	88	72 (81.8%)	46 (52.3%)	92	73 (79%)	50 (54.3%)
2	54	40 (74%)	34 (63.0%)	55	46 (84%)	36 (65.5%)
3	107	88 (82.2 %)	55 (51.4%)	103	79 (77%)	63 (61.2%)
4	45	41 (91%)	32 (71.0%)	60	55 (92%)	41 (68.3%)
5	27	20 (70.1%)	11 (40.7%)	27	21 (78%)	14 (51.9%)
6	13	11 (84.6%)	7 (53.9%)	9	6 (67%)	5 (55.6%)
7	96	77 (80.2%)	50 (52.1%)	111	99 (89%)	57 (51.4%)
8	203	145 (71.4%)	107 (52.7%)	203	157 (77%)	109 (53.7%)
9	76	58 (76.3%)	49 (64.5%)	67	51 (76%)	38 (56.7%)
10	82	67 (81.7%)	45 (54.9%)	85	78 (92%)	60 (70.6%)
11	72	65 (90.3%)	42 (58.0%)	67	53 (79%)	45 (67.2%)
12	70	60 (85.7%)	45 (64.3%)	62	47 (76%)	29 (46.8%)
13	34	26 (76.5%)	17 (50.0%)	38	33 (87%)	29 (76.3%)
TOTAL	967	771 (80%)	540 (55.8%)	979	798 (82%)	576 (58.8%)

Table 33.

Response rates and groups characteristics.

	Attenders		Non- attenders		Diabetics		P. value
	First phase	Second phase	First phase	Second phase	First phase	Second phase	
No. of cases	1317	1358	158	93	521	574	
Response rate	84.6	88.9	55.5	59	80	82	
Age mean (sd)	40.3 (14.5)	41.5 (15.3)	38.5 (16.7)	37.5 (18.2)	57.2 (15.9)	57.3 (16.4)	0.0001
Sex M:F	33.2:66.8	36.6:63.4	35.5:64.5	38:62	53.9:46.1	54.3:45.7	0.0001

Table 34.

Characteristics of respondents and non-respondents
for second phase non-attenders.

	Non- attenders		P. value
	Respondent second phase	Non-respondent second phase	
No. of cases	93	77	
Age mean (sd)	37.5 (18.2)	34.5 (13.9)	0.6
Sex M:F	38.0:62.0	36.8:63.2	> 0.8

Table 35.

Characteristics of respondents and non-respondents
for second phase diabetics.

	Diabetics		P. value
	Respondent second phase	Non-respondent second phase	
No. of cases	574	200	
Age mean (sd)	57.3 (16.4)	56.1 (17.8)	0.7
Sex M:F	54.3:45.7	52.0:48.0	> 0.5

Table 36.

Sex ratio and percentage of comments for all patients.

	Male	Female	Total
Positive comments	155 (9.8)	200 (8.5)	335 (8.5)
Negative comments	100 (6.3)	205 (8.7)	305 (7.8)
Neutral comments	29 (1.8)	33 (1.4)	62 (1.6)
No comments	1301 (82.1)	1912 (81.4)	3213 (81.7)
Total	1585 (40.3)	2350 (49.7)	3935 (100)

chi-square = 10.0, d. f. 3, p=0.02.

Table 37.

Percentage of comments.

	Attendees		Non- attendees		Diabetics		P. value
	First phase	Second phase	First phase	Second phase	First phase	Second phase	
No. of cases	1317	1358	158	93	521	574	
no. of comments (%)	185 (14.1)	198 (14.6)	41 (25.9)	25 (26.9)	139 (26.6)	139 (24.2)	0.0001

Table 38.

Characteristics of patients with positive and negative comments.

	patients with +ve comments	patients with -ve comments	P. value
Attendees			
age mean (sd)	43.9 (16.0)	36.5 (12.3)	0.0001
sex (M:F)	36.7:63.3	28.3:71.7	> 0.05
Non-attendees			
age mean (sd)	42.8 (19.8)	34.7 (13.0)	0.26
sex (M:F)	44.4:55.6	36.8:63.2	> 0.2
Diabetics			
age mean (sd)	61.6 (11.9)	48.3 (17.6)	0.0001
sex (M:F)	50.6:49.4	42.1:57.9	> 0.5

Table 39.

SSQ subscales and total mean scores and (sd) for the three groups.

	Attendees		Non- attendees		Diabetics	
	First phase	Second phase	First phase	Second phase	First phase	Second phase
No. of cases	1317	1358	158	93	521	574
G. satisfaction	3.5 (0.9)	3.6 (0.9)	3.3 (1.0)	3.2 (0.9)	3.7 (0.9)	3.6 (0.9)
Continuity	3.0 (0.8)	3.0 (0.8)	3.1 (0.9)	2.8 (0.9)	3.4 (0.9)	3.3 (0.9)
Access	3.8 (0.6)	3.8 (0.7)	4.0 (0.7)	3.9 (0.7)	3.9 (0.7)	3.9 (0.7)
Medical care	3.6 (0.8)	3.8 (0.7)	3.6 (0.7)	3.4 (0.8)	3.8 (0.8)	3.7 (0.8)
Premises	3.5 (0.8)	3.5 (0.8)	3.5 (0.8)	3.5 (0.8)	3.7 (0.8)	3.7 (0.8)
Availability	3.1 (1.0)	3.0 (1.0)	3.0 (1.1)	2.5 (0.9)	3.2 (1.1)	3.1 (1.1)
Total	3.4 (0.5)	3.4 (0.6)	3.4 (0.6)	3.2 (0.6)	3.6 (0.6)	3.6 (0.6)

Table 40.

Surgeries with significant improvement for attendees.

Surgery no.	SSQ subscale	First phase subscale mean score(sd)	Second phase subscale mean score(sd)	P. value
4	General satisfaction	2.3 (0.5)	3.8 (0.8)	0.0001
4	Continuity	2.9 (0.6)	3.4 (0.8)	0.0001
1	Access	3.6 (0.5)	4.0 (0.7)	0.0001
4		3.3 (0.5)	3.9 (0.8)	0.0001
6		3.9 (0.5)	4.2 (0.5)	0.004
4	Medical care	2.3 (0.6)	3.7 (0.7)	0.0001
7		3.5 (0.7)	3.7 (0.6)	0.008
3	Premises	3.1 (0.6)	3.4 (0.6)	0.001
4		3.0 (0.5)	3.4 (0.8)	0.0001
3	Availability	2.3 (0.9)	2.7 (0.9)	0.004

Table 41.

Surgeries with significant worsening for attenders.

Surgery no.	SSQ subscale	First phase subscale mean (sd)	Second phase subscale mean (sd)	P. value
8	General satisfaction	3.7 (0.7)	3.5 (0.9)	0.03
13	Continuity	3.1 (0.7)	2.9 (0.8)	0.04
9	Access	3.7 (0.7)	3.3 (0.4)	0.0001
13		3.9 (0.6)	3.7 (0.6)	0.04
5	Premises	4.1 (0.5)	3.8 (0.7)	0.01
13		2.7 (0.7)	2.6 (0.7)	0.04

Table 42.

Surgeries with significant worsening for non-attenders.

Surgery no.	SSQ subscale	First phase subscale mean (sd)	Second phase subscale mean (sd)	P. value
8	Access	4.1 (0.6)	3.7 (0.6)	0.03
5	Medical care	4.2 (0.5)	3.0 (0.7)	0.001
5	Premises	4.2 (0.5)	3.5 (0.9)	0.04
5	Availability	3.7 (1.0)	2.8 (0.5)	0.004

Table 43.

Surgeries with significant improvement for diabetics.

Surgery no.	SSQ subscale	First phase subscale mean (SD)	Second phase subscale mean (SD)	P. value
1	Access	3.7 (0.8)	4.0 (0.5)	0.02
10		3.8 (0.7)	4.0 (0.6)	0.04

Table 44.

Surgeries with significant worsening for diabetics.

Surgery no.	SSQ subscale	First phase subscale mean (sd)	Second phase subscale mean (sd)	P. value
5	Medical care	4.1 (0.6)	3.4 (0.9)	0.03
7	Premises	3.8 (0.8)	3.6 (0.6)	0.04

Table 45.

Comparison between mean scores, (sd) for positive and negative comments for attenders.

	attenders with +ve comments	attenders with -ve comments	P. value
General satisfaction	3.8 (0.8)	2.8 (0.8)	0.0001
Continuity	3.4 (0.7)	2.7 (0.8)	0.0001
Access	3.8 (0.7)	3.9 (0.6)	0.01
Medical care	3.7 (1.0)	3.3 (0.7)	0.0001
Premises	3.3 (0.8)	2.9 (0.8)	0.0001
Availability	3.5 (1.0)	2.5 (0.9)	0.0001

Table 46.

Comparison between mean scores, (sd) for positive and negative comments for non-attenders.

	non-attenders with +ve comments	non-attenders with -ve comments	P. value
General satisfaction	3.8 (0.9)	2.4 (0.8)	0.0001
Continuity	3.4 (1.1)	2.5 (0.8)	0.003
Access	4.2 (0.5)	4.0 (0.5)	0.5
Medical care	4.0 (0.6)	3.2 (0.7)	0.0001
Premises	3.5 (0.6)	2.8 (0.7)	0.001
Availability	3.2 (1.0)	2.4 (0.8)	0.001

Table 47.

Comparison between mean scores, (sd) for positive and negative comments for diabetics.

	diabetics with +ve comments	diabetics with -ve comments	P. value
General satisfaction	4.2 (0.7)	2.8 (0.9)	0.0001
Continuity	3.7 (0.7)	3.0 (0.8)	0.0001
Access	4.1 (0.6)	3.7 (0.8)	0.01
Medical care	4.2 (0.6)	3.5 (0.8)	0.0001
Premises	3.8 (0.7)	3.3 (0.8)	0.0001
Availability	3.7 (0.9)	2.3 (0.9)	0.0001

Tables 48-53 show first phase frequency, and percentage of patients' comments

Table 48.

Comments regarding practice team.

Patients	Doctor + / -	Nurses + / -	Receptionist + / -	Staff + / -
Attenders (n = 2335)	26/8	- / -	11/5	10/0
Non-attenders (n = 595)	6/4	- / -	0/11	- / -
Diabetics (n = 1496)	54/7	8/0	11/12	2/0
Total %	86/19 (81.9/18.1)	8/0 (94.1/5.9)	22/28 (44/56)	12/0 (100/0)

Table 49.

Comments regarding patients' care, information provided, confidentiality, and repeat prescription.

Patients	patients' management (care) + / -	Information + / -	Confidentiality (privacy at receptionist desk) + / -	Repeat prescription + / -
Attenders	11/0	0/2	0/6	0/2
Non-attenders	2/1	0/1	0/1	- / -
Diabetics	3/0	0/1	0/2	2/1
Total %	16/1 (94.1/5.9)	0/4 (0/100)	0/9 (0/100)	2/3 (40/60)

Table 50.

Comments regarding continuity, practice, and services provided.

Patients	Continuity + / -	practice + / -	Services + / -
Attenders	0/9	31/2	13/1
Non-attenders	4/1	8/0	2/0
Diabetics	12/3	35/3	6/2
Total %	16/13 (55/45)	74/5 (94/6)	21/3 (84/16)

Table 51.

Comments regarding building, waiting room and extra space for children.

Patients	Building + / -	Waiting room + / -	Children facilities (waiting room) + / -
Attenders	0 / 5	1 / 7	0 / 9
Non-attenders	1 / 0	0 / 2	- / -
Diabetics	3 / 2	0 / 2	- / -
Total	4 / 7	1 / 11	0 / 9
%	(36/64)	(8/92)	(0/100)

Table 52.

Comments regarding availability.

Patients	Appointment + / -	Emergency appointment + / -	appointment (Working people) + / -	Telephone + / -
Attenders	1 / 15	0 / 3	0 / 4	0 / 3
Non-attenders	2 / 2	- / -	0 / 1	0 / 1
Diabetics	4 / 4	2 / 0	0 / 1	0 / 3
Total	7 / 21	2 / 3	0 / 6	0 / 7
%	(25/75)	(40/60)	(0/100)	(100/0)

Table 53.

Comments regarding access, transport, waiting time, and specific comments.

Patients	Access + / -	Transport + / -	Waiting time + / -	other specific comments
Attenders	- / -	0 / 1	1 / 10	1 a need for parking. 1 a need of manpower. 1 a need of telephonist. 1 extra female doctor. 1 need to see female doctor. 1 changed from f. to m. dr. 1 a need of female doctor.
Non-attenders	- / -	- / -	0 / 3	
Diabetics	0 / 1	0 / 3	1 / 1	
Total	0 / 1	0 / 4	2 / 14	
%	(0/100)	(0/100)	(12/88)	

Table 54

application of audit cycle stages

Surgery no.	One	Two	Three	Four
Identified problems	-continuity -availability -too warm waiting room	-continuity -availability	-continuity -availability	-continuity -premises -medical care -access
Reasons for these problems	-doctors answer calls while consulting -one doctor always starts late -using locum -absence of blinds in the waiting room	-no suggestions	-the appointment system -shortage of resources	-the questionnaires were not distributed as instructed -one of the doctors always starts late
Implemented solutions	-transfer doctor calls after they finish consulting -decrease use of locum -fixing blinds in the waiting room	-no solution to implement	-the feedback data used as a hard data for extra resources -90% of patients to be seen within three days -the H. C. entrance were refurbished -a tapering telephone system installed -redcoration of the surgery has started recently	-two female doctors returned back to work -more appointments -waiting room redecorated
Re-assessment	For attenders: - no complaints about the waiting room - increased satisfaction with access	-no changes in patients' satisfaction	For attenders: satisfaction increased with - premises - availability- availability	For attenders: satisfaction increased with - continuity - access - medical care - premises - and in general

(Contd.)

Surgery no.	Five	Six	Seven
Identified problems	- non	-continuity for surgery six	-continuity -availability -privacy at the receptionist desk
Reasons for these problems	<ul style="list-style-type: none"> •one partner <ul style="list-style-type: none"> -works part-time - slow in consulting - sees more chronic patients •patients have to wait three days to see her •emergency of the appointment left with the patients •patients telephone for repeat prescription in the morning •telephones operate from 8.30 a. m. 		
Implemented and suggested solutions	<ul style="list-style-type: none"> -fewer patients booked for one partner to reduce patients waiting time -patients advised to telephone after 11 am for repeat prescription -morning telephone left for appointments 		
Re-assessment	For attenders: satisfaction decreased with <ul style="list-style-type: none"> - premises For non-attenders: satisfaction decreased with <ul style="list-style-type: none"> - medical care - premises - availability For diabetics: satisfaction decreased with <ul style="list-style-type: none"> - medical care 	For attenders: satisfaction increased with <ul style="list-style-type: none"> - access 	-number of appointments increased -the number and duration of calls were limited -return calls for patients -morning telephones for appointments -after noon telephones for repeat prescriptions -appointments booked two weeks earlier for chronic cases -a private room provided for private conversations For attenders: satisfaction increased with <ul style="list-style-type: none"> - medical care For diabetics: satisfaction decreased with <ul style="list-style-type: none"> - premises - no complaint about privacy at the receptionist desk

Surgery no.	Eight	Nine and 10	1 1
Identified problems	-continuity -availability -waiting time -play area for children	-continuity -availability -play area for children	-continuity -availability
Reasons for these problems	-the waiting room is small -the availability of less resources	-a higher patient demand at surgery 10 -patient numbers are larger at surgery 10 -doctors rotate for both surgeries -work divided between the two surgeries -house calls also divided -difficulty in having fixed doctors to each surgery	-two doctors always have commitments outside the surgery
Implemented and suggested solutions	-feedback data used for extra resources from Health Board	-surgery nine has been decorated	-extra appointments provided -time for emergency appointment reduced to five minutes
Suggested solutions	-to expand the waiting area	-a suggestion to have one fixed doctor to each surgery	
Re-assessment	For attenders: satisfaction decreased - in general For non-attenders: satisfaction decreased with - access	For attenders: <i>surgery nine</i> satisfaction increased with - access For diabetics: <i>surgery 10</i> satisfaction decreased with - access	-no changes in patients' satisfaction

(Contd.)

Surgery no.	1 2	1 3
Identified problems	<ul style="list-style-type: none"> -continuity -availability -negative attitudes of receptionists -play area for children -shortage of female doctor 	<ul style="list-style-type: none"> -continuity -availability -premises -access
Reasons for these problems	<ul style="list-style-type: none"> -sharing the waiting room with other practices -additional extra telephone lines needed -an extra female doctor is needed -a need for extra consulting room 	<ul style="list-style-type: none"> -patients with more problems took up other patients' time -delay in answering of telephones by doctors -patients who say they have an emergency given urgent appointment
Implemented solutions	<ul style="list-style-type: none"> -patients' complaints have been discussed with receptionists -telephone calls dealt with differently 	<ul style="list-style-type: none"> -patients to be called back if doctor is consulting -not to follow up patients with antibiotics -practice nurse to follow up patients with contraception
Suggested solutions	<ul style="list-style-type: none"> -surgery to receive an extra consulting room -to enlarge the waiting room -to employ extra female doctor -to start to decorate the surgery 	<ul style="list-style-type: none"> -new plan for the new surgery waiting room
Re-assessment	<ul style="list-style-type: none"> no changes - in patients' satisfaction - regarding receptionists continued demands for - extra female doctor - children's play area 	<p>For attenders:</p> <ul style="list-style-type: none"> satisfaction decreased with - access - premises

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Publications and Presentations

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Sullivan F. M., Husain S. M.

Does the arrival of a desk-top computer reduce patients' satisfaction with consultation in general practice?

Theoretical Surgery 1992; 7 : 161

Submitted for publication

Wilson P.M.J., Sullivan F.M., Hussein S., Davey-Smith G.

Do patients appreciate recognition of their mental state by GPs?

Brit.J.Gen.Pract.

Presentations have been made at the following meetings

British Computer Society Medical (Scotland)

Health Computing in Scotland

June 1992 "Patient satisfaction with GP desk-top computers"

Association of University Teachers of General Practice

Annual Scientific Meeting: Manchester

July 1992 "The invasion of the desk-top computer"

Hamilton and East Kilbride Unit Medical Audit Symposium.

October 1992 "Audit of Patient Satisfaction in General Practice"

West of Scotland Committee for Postgraduates Education,
Glasgow University,

Setting-up Audit Projects Course

November 12 1992, "Audit of Patient Satisfaction in General Practice".

WONCA/SIMG CONGRESS 1993,

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The Hague, The Netherlands,

June 13-17,1993, "Does the arrival of a desk-top computer reduce patients' satisfaction with consultations in general practice?".

The First Gulf Primary Health Care Conference, Arabian Gulf University: Bahrain. November 21-23, 1993,

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UNIVERSITY
of
GLASGOW

Dear

Attached to this letter is a questionnaire contained on two sides of a single sheet of paper, which we hope you have time to complete and return before you leave the surgery (you only need about 5 minutes). The questionnaire is part of a research project organised by the Glasgow University Department of General Practice to improve the quality of general practice care.

When you have completed the questionnaire, please put it in the box. The questionnaire will be sent to the research team. Your own doctor WILL NOT get to see the form and the information in it will be completely confidential.

If you do not wish to take part in the study there will be no penalty. Your wishes will be respected. You will not be contacted again after completing the questionnaire.

Thank you for your help.

DEPARTMENT OF GENERAL PRACTICE
Woodside Health Centre, Barr Street, Glasgow G20 7LR
Norie-Miller Professor: J. H. Barber MD FRCGP FHKCGP(Hon) FRCP(Glas) DObstRCOG
Titular Professor: T. S. Murray PhD FRCGP FRCP DRCOG (*General Accident Lecturer*)
Senior Lecturer: S. F. Wood MD FRCGP
Telephone: 041-332 8118 Fax: 041-353 3402

QUESTIONNAIRE

We are undertaking a survey of how patients feel about their visit to the doctor. We would be very grateful if you could spend a couple of minutes, answering the questions below, **AFTER** you have seen your doctor.

WE EMPHASISE THAT ALL QUESTIONNAIRES ARE CONFIDENTIAL AND COMPLETELY ANONYMOUS

Please tick the appropriate boxes

AGE _____ SEX MALE []
FEMALE []

OCCUPATION :

EMPLOYED [] UNEMPLOYED []

HOUSEWIFE [] STUDENT [] RETIRED []

[1] When did you last consult your GP (days, weeks, or months)

[2] Do you think the doctor spends too much time writing notes and making out prescriptions ?

YES [] NO []

Comment (if any) _____

[3] Do you think it is a good idea for the doctor to have a computer on his/her desk ?

YES [] NO []

Comment (if any) _____

PLEASE TURN OVER >>>

Please indicate to what extent you agree or disagree with each of the following statements by ticking the appropriate rating on the scale :

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1] I am totally satisfied with my visit to this doctor					
2] Some things about my consultation with the doctor could have been better					
3] I am not completely satisfied with my visit to the doctor					
4] This doctor was very careful to check everything when examining me					
5] This doctor examined me very thoroughly					
6] This doctor told me everything about my treatment					
7] I thought this doctor took notice of me as a person					
8] I will follow this doctor's advice because I think he/she is absolutely right					
9] This doctor was interested in me as a person, and not just my illness					
10] I understand my illness much better after seeing this doctor					
11] There are some things this doctor does not know about me					
12] This doctor knows all about me					
13] I felt this doctor really knew what I was thinking					
14] I felt able to tell this doctor about very personal things					
15] I would find it difficult to tell this doctor about some private things					
16] The time I was allowed to spend with the doctor was not long enough to deal with everything I wanted					
17] I wish it had been possible to spend a little longer with the doctor					
18] The time I was able to spend with the doctor was a bit too short					



UNIVERSITY
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GLASGOW

Inside this envelope you will find two questionnaires which we hope you have time to complete and return before you leave the surgery (you only need about 5 minutes). The questionnaires are part of a research project organised by the Glasgow University Department of General Practice to improve the quality of general practice care.

When you have completed the questionnaires, please seal them in the envelope and then put them in the box. The seal envelope will be sent to the research team. Your own doctor WILL NOT get to see the forms and the information in them will be completely confidential.

If you do not wish to take part in the study there will be no penalty. Your wishes will be respected. No one will be contacted further after completing the questionnaires

Thank for your help

Please tick whichever of these two replies you agree with:

I agree to take part in this research

☐

I would rather not take part in this research

☐

Signed

DEPARTMENT OF GENERAL PRACTICE
Woodside Health Centre, Barr Street, Glasgow G20 7LR
Norie-Miller Professor: J. H. Barber MD FRCP FHKCGP(Hon) FRCP(Glas) DObstRCOG
Titular Professor: T. S. Murray PhD FRCP FRCP DRCOG (*General Accident Lecturer*)
Senior Lecturer: S. F. Wood MD FRCP
Telephone: 041-332 8118 *Fax:* 041-353 3402

	Agree Strongly	Agree	No Opinion	Disagree	Disagree Strongly
This doctor was interested in me as a perso, and not just my illness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand my illness much better after seeing this doctor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are some things this doctor doesnot known about me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This doctor really knew what I was thinking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt able to tell this doctor about very personal things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would find it difficult to tell this doctor about some private things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The time I was allowed to spend with the doctor was not long enough to deal with everything I wanted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DATE

Surgery Satisfaction Questionnaire (SSQ)

Practice No.

The aim of this study is to help us give you the best possible service at the Surgery. To do this we need to know how you feel about the Surgery and the care you receive. This form contains a list of questions about your views. Please answer all of them. Your answers will be kept entirely confidential, so feel free to make any comments you wish. Please do not write your name on this form. When you have completed it, please leave it and the pencil in the box at Reception or with the receptionist. Thank you for completing this form. If you have any questions about it, please ask the receptionist.

For question 1 onwards, TICK the box for the answer that is nearest to your opinion. 'Neutral' means you have no feelings either way.

For example:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
<i>'This surgery is too big'</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. I am totally satisfied with everything about this general practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I do not much like my surgery's waiting room.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I see the same doctor almost every time I go to the surgery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. It can take me a long time to get to my doctor's surgery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The doctors at this surgery are always careful not to make any mistakes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. It can be difficult to get through to the surgery on the telephone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. My doctor's surgery is modern and up-to-date.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

P.T.O.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8. I am always satisfied with the medical care I receive at this surgery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. It can be difficult to see the same doctor each time you go to the surgery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. It can sometimes be difficult to get an appointment with my doctor at this surgery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I find this surgery very difficult to get to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The doctors at this surgery never make any mistakes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am not completely satisfied with one or two things about this general practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. It can be hard to get an appointment for medical care right away.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. My doctor's surgery is very easy to get to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I do not always see the same doctor when I go to the surgery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. This surgery building could do with some improvements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AGE

SEX

ANY OTHER COMMENTS

.....

.....

THE GENERAL HEALTH QUESTIONNAIRE

GHQ 28
David Goldberg

Please read this carefully.

We should like to know if you have had any medical complaints and how your health has been in general, *over the past few weeks*. Please answer ALL the questions on the following pages simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

It is important that you try to answer ALL the questions.

Thank you very much for your co-operation.

Have you recently

A1 – been feeling perfectly well and in good health?	Better than usual	Same as usual	Worse than usual	Much worse than usual
A2 – been feeling in need of a good tonic?	Not at all	No more than usual	Rather more than usual	Much more than usual
A3 – been feeling run down and out of sorts?	Not at all	No more than usual	Rather more than usual	Much more than usual
A4 – felt that you are ill?	Not at all	No more than usual	Rather more than usual	Much more than usual
A5 – been getting any pains in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
A6 – been getting a feeling of tightness or pressure in your head?	Not at all	No more than usual	Rather more than usual	Much more than usual
A7 – been having hot or cold spells?	Not at all	No more than usual	Rather more than usual	Much more than usual
B1 – lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
B2 – had difficulty in staying asleep once you are off?	Not at all	No more than usual	Rather more than usual	Much more than usual
B3 – felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
B4 – been getting edgy and bad-tempered?	Not at all	No more than usual	Rather more than usual	Much more than usual
B5 – been getting scared or panicky for no good reason?	Not at all	No more than usual	Rather more than usual	Much more than usual
B6 – found everything getting on top of you?	Not at all	No more than usual	Rather more than usual	Much more than usual
B7 – been feeling nervous and strung-up all the time?	Not at all	No more than usual	Rather more than usual	Much more than usual

Please turn over

Have you recently

C1 – been managing to keep yourself busy and occupied?	More so than usual	Same as usual	Rather less than usual	Much less than usual
C2 – been taking longer over the things you do?	Quicker than usual	Same as usual	Longer than usual	Much longer than usual
C3 – felt on the whole you were doing things well?	Better than usual	About the same	Less well than usual	Much less well
C4 – been satisfied with the way you’ve carried out your task?	More satisfied	About same as usual	Less satisfied than usual	Much less satisfied
C5 – felt that you are playing a useful part in things?	More so than usual	Same as usual	Less useful than usual	Much less useful
C6 – felt capable of making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less capable
C7 – been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual

D1 – been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
D2 – felt that life is entirely hopeless?	Not at all	No more than usual	Rather more than usual	Much more than usual
D3 – felt that life isn’t worth living?	Not at all	No more than usual	Rather more than usual	Much more than usual
D4 – thought of the possibility that you might make away with yourself?	Definitely not	I don’t think so	Has crossed my mind	Definitely have
D5 – found at times you couldn’t do anything because your nerves were too bad?	Not at all	No more than usual	Rather more than usual	Much more than usual
D6 – found yourself wishing you were dead and away from it all?	Not at all	No more than usual	Rather more than usual	Much more than usual
D7 – found that the idea of taking your own life kept coming into your mind?	Definitely not	I don’t think so	Has crossed my mind	Definitely has

A

B

C

D

TOTAL



APPENDIX 5

PATIENT INITIALS: _____

YEAR OF BIRTH: _____

SEX: _____

Regardless of physical condition, how significant were psychological factors in this patient’s consultation? Put a cross on the line according to your assessment.

NOT		VERY
SIGNIFICANT	_____	SIGNIFICANT

Would you say this patient is:

NOT AT ALL		VERY
ANXIOUS	_____	ANXIOUS

NOT AT ALL		VERY
DEPRESSED	_____	DEPRESSED

APPENDIX 6

QUESTIONNAIRE

We are undertaking a survey of how patients feel about their visit to the doctor. We would be very grateful if you could spend a couple of minutes, answering the questions below.

WE EMPHASISE THAT ALL QUESTIONNAIRES ARE CONFIDENTIAL AND COMPLETELY ANONYMOUS

Please tick the appropriate boxes

AGE	16-25 []	SEX	MALE []
	26-35 []		FEMALE []
	36-45 []		
	46-55 []		
	56-65 []		
	65+ []		

OCCUPATION : EMPLOYED [] UNEMPLOYED [] HOUSEWIFE []
STUDENT [] RETIRED []

[1] Which doctor did you see today?
Dr. Dunn [] Dr. Milne []
Dr. Colville [] Dr. Sullivan []
Dr. Unwin []

[2] Do you think the doctor spends too much time writing notes and making out prescriptions ?

YES [] NO []

Comment (if any) _____

[3] Do you think it is a good idea for the doctor to have a computer on his/her desk ?

YES [] NO []

Comment (if any) _____

Any Other Comments _____

PLEASE TURN OVER

Please indicate to what extent you agree or disagree with which of the following statements by ticking the appropriate rating on the sace:

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1] The doctor told me the name of my illness in words that I could understand					
2] The doctor told me all I wanted to know about my illness					
3] The doctor has relieved my worries about being seriously ill					
4] The doctor told me what the medicines (he/she) prescribed would do for me					
5] The doctor gave me a chance to say what was really on my mind					
6] After talking to the doctor I felt much better about my problems					
7] I felt that this doctor accepted me as a person					
8] I felt that this doctor didn't take my problems very seriously					
9] I was satisfied with the doctor's decision about what medicines I had to take					
10] The doctor looked into all the problems I mentioned					
11] I feel the doctor did not spend enough time with me					
12] The doctor gave directions too fast when he/she examined me					



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Dear Dr.

Thank you very much for participating in the study of patient satisfaction and psychological status.

As we started analysing the data, we found that there was a need to know some of the information about the GPs who participated in this study to reach more valid conclusions.

This information will be restricted to the research fellow and will be confidential.

We would be grateful if you could fill in the short questionnaire attached to this letter.

At the end of data analysis a feedback will be given to the practices for comment.

With kind regards,

Your sincerely

Dr Sami. M. Husain.

Research fellow

DEPARTMENT OF GENERAL PRACTICE
Woodside Health Centre, Barr Street, Glasgow G20 7LR
Norie-Miller Professor: J. H. Barber MD FRCP FHKCGP(Hon) FRCP(Glas) DObstRCOG
Titular Professor: T. S. Murray PhD FRCP FRCP DRCOG (*General Accident Lecturer*)
Senior Lecturer: S. F. Wood MD FRCP
Telephone: 041-332 8118 *Fax:* 041-353 3402

A. NAME _____

B. Age _____

C. Sex M [] F []

D. Year of qualification _____

E. Year of starting in general practice _____

F. Any psychiatric experiences and duration

Posts	Duration
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

Courses e.g. Balint group, counselling skills	Duration
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

G. The average number of patients you see per week _____

H. Average consultation time _____.

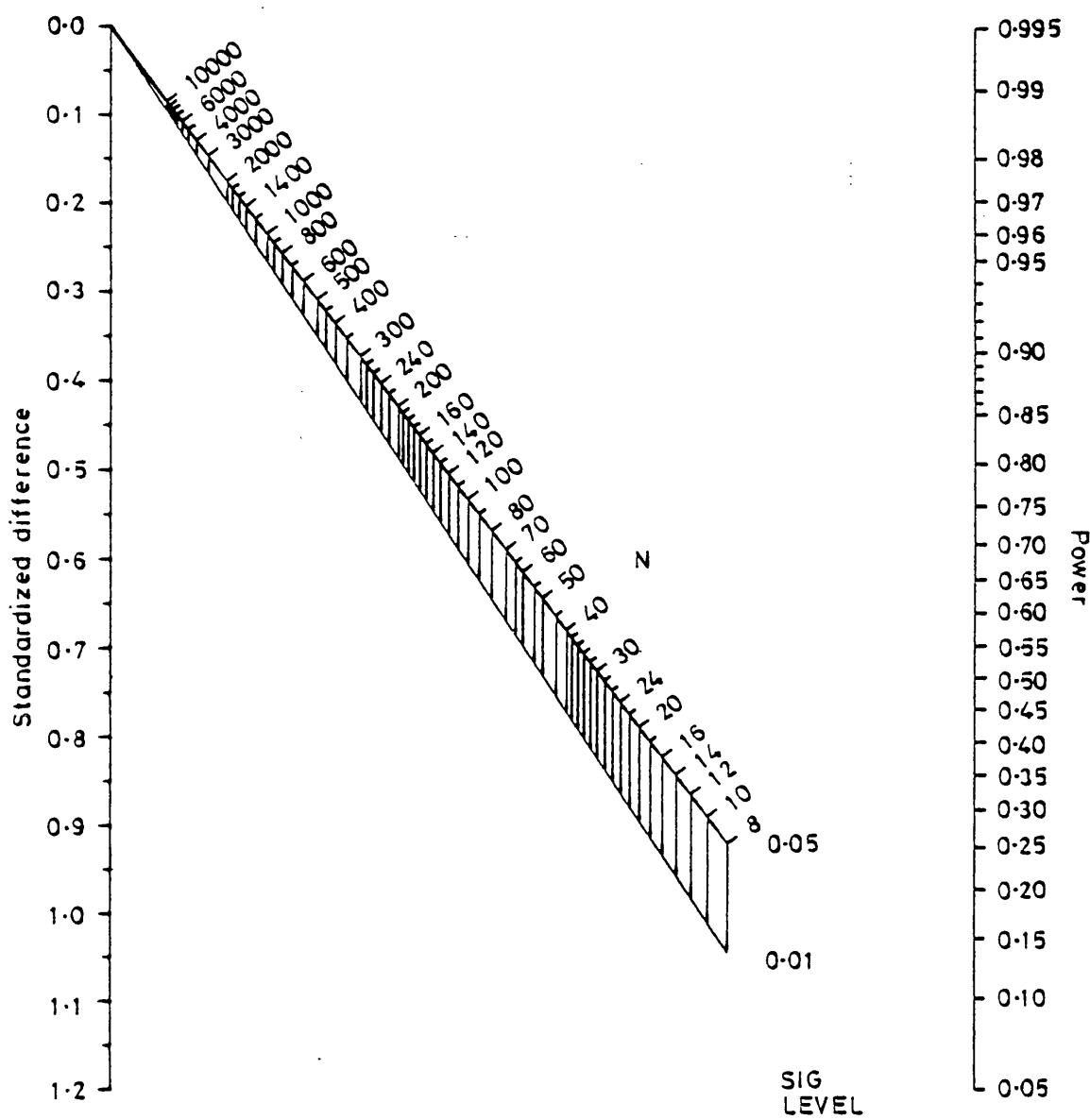
I. Do you give patients with psychosocial problems more time in your surgeries

YES [] NO []

K. Do you have any special interest in dealing with psychosocial problems ?

YES [] NO []

APPENDIX 8



—Nomogram for a two-sample comparison of a continuous variable, relating power, total study size, the standardised difference, and significance level.



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16 March 1992

Mr. Martin Irving,
GPASS,
Seaforth House,
Seaforth Road,
Hillington,
Glasgow
G52 4SQ

Dear Mr Irving

Dr. Frank Sullivan has suggested I contact you as we are preparing to start a study to assess whether the arrival of a desk- top computer affects patients satisfaction with their consultation in general practice. I would be grateful if you could consider asking any practices in the West of Scotland which are about to introduce a multi-user system computer if they might consider participating in the enclosed study. I also enclose the patient satisfaction questionnaire which will be used in the study.

Your sincerely,

Dr. Sami. M. Husain.
Research fellow

DEPARTMENT OF GENERAL PRACTICE
Woodside Health Centre, Barr Street, Glasgow G20 7LR
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Senior Lecturer: S. F. Wood MD FRCGP
Telephone: 041-332 8118 *Fax:* 041-353 3402

**WILL A DESKTOP COMPUTER AFFECT PATIENT SATISFACTION
WITH CONSULTATION.**

Almost 50% of GPs in the UK are using a computer during consultation. Benefits to doctors and patient should be considerable, but it is important to study the effect of the presence of this new technology on the doctor/patient relationship.

The aim of this study is to find out the impact of desktop computers on patients by measuring their satisfaction with the consultation. A valid and reliable questionnaire, the Consultation Satisfaction Questionnaire (CSQ) (Baker 1990) will be used. Patient need to fill in CSQ on three occasions, 6 weeks before, 6 weeks and 6 months after the introduction of top desk computer. If your practice is about to adopt multi-user GPASS, and you would like to know more about this study please tear off and return the reply slip below.

I would like to participate in this study

NAME _____

ADDRESS _____

please Return to : Dr. S. M. Husain
 Department of General Practice,
 University of Glasgow
 Woodside Health Centre,
 Barr Street,
 GLASGOW
 G20 7LR



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Dear

I do not appear to have received the questionnaire I sent to you some weeks ago. **Your** participation is important in our study of how the provision of your care can be improved. I am therefore enclosing another questionnaire with a prepaid envelop. I would be grateful if you could fill it in and mail it as soon as possible.

Thank you in anticipation of your co-operation.

PLEASE COMPLETE BOTH SIDES OF THE QUESTIONNAIRE

Yours sincerely,

Dr. Sami. M. Husain.

Research fellow

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GP AUDIT MAIN MENU

1: Project Registration
2: Project Data Entry
3: Project Analysis
4: Reference Table Maintenance
5: Back-Up procedure
6: Merge Data from Disc
0: Exit to DOS

Select Number
from List Above

Patient Satisfaction DataEntry Screen

Practice: 39 Colville, Milne, Dunn & Sullivan
Blantyre Health Centre Blantyre

Pat	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
411	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Age	Sex	Comments														Type	
28	F																

Pat	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
412	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Age	Sex	Comments														Type	
28	F																

Pat	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
413	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Age	Sex	Comments														Type	
28	F																

Pat	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
414	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Age	Sex	Comments														Type	
28	F	It is hard to get a recommendation with your own doctor at															

PATIENT SATISFACTION ANALYSIS

- 1: Select a Practice
- 2: Compare Practice Vs All
- 3: Compare 2 Audits in Practice
- 4: Compare 3 Audits in Practice
- 5: Report on Totals/Patient
- 0: Return to Analysis Menu

Select Number
from List Above █

COMPARE SINGLE AUDIT VS OTHERS OF SAME TYPE

- 1: Summary All Factors
- 2: Detail Continuity (Factor1)
- 3: Detail Accessibility (Factor2)
- 4: Detail Availability (Factor3)
- 5: Detail Medical Care (Factor4)
- 6: Detail Premises (Factor5)
- 7: Detail General Satisfaction
- 8: Summary of Comments
- 0: Exit Graph Menu

Select Number
from List Above



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Dear Dr.

Thank you for taking part in the study. I am enclosing feedback of the results of "Audit of Surgery Satisfaction Questionnaire" at your practice (4 copies), which you may wish to discuss at a practice meeting.

The following are the conclusions from the results:

In general

1. The response rate was good.
2. Patients are generally satisfied with services.

Comparing your practice attenders with attenders of other practices

3. Patients are less satisfied with **continuity, availability** and **premises** than other aspect of services you provide.
4. By breaking down **continuity** subscale, patients are less satisfied with question 9, and 10, compare with other questions for the same subscale. i.e.
"It can be difficult to see the same doctor each time you go to the surgery".
"It can sometimes be difficult to get an appointment with my doctor at this surgery".
5. By breaking down **availability** subscale, patients are less satisfied with questions 6 and 14 . i.e.
"It can be difficult to get through to the surgery on the telephone".
"It can be hard to get an appointment for medical care right away".
6. By breaking down **premises** subscale, patients are less satisfied with questions 2,7, and 17 .

I look forward to hearing from you about my feedback on the value of the audit so far. Perhaps you will be able to use this information to improve patient satisfaction even further before the next phase of data collection in March 1993

If you need further information please do not hesitate to contact me.

Yours sincerely,

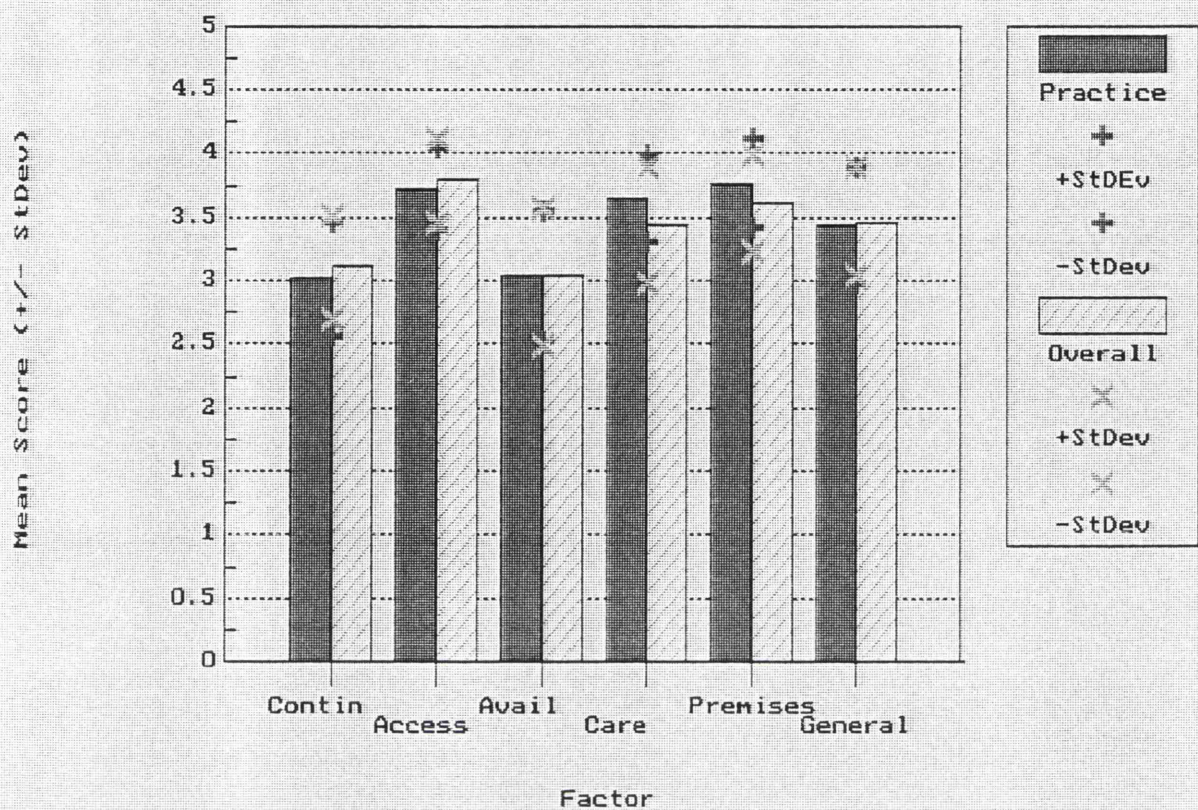
Dr. Sami. M. Husain.

Research fellow

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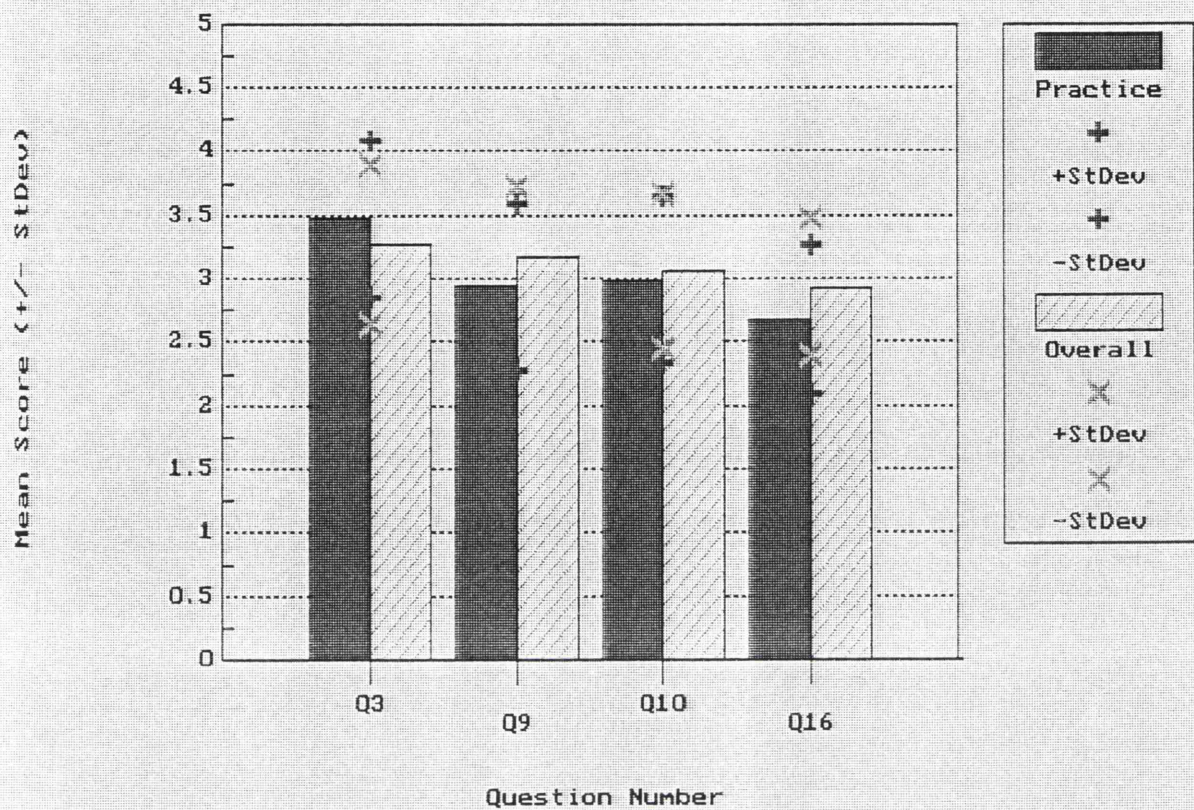
Single Practice Vs Other Practices

Summary of All Sections



Single Practice Vs Other Practices

Detail of Continuity Factor



Comments:

Comment Type = +ve

I have always had the utmost care and attention.

Where babies are concerned my doctor does his best to provide good service.

Comment Type = -ve

Can sometimes wait 7-8 days before getting an appointment with doctor of my choice.

Front door are to heavy and difficult to get in with a pram.

I would like to see more facilities for children waiting.

Main complaint not being able to see doctor on the day.

Some of the partners tend to talk 'at you' rather than to you, and at times appear as if they don't want to listen at all.

Stains on carpets should be removed by professional cleaners.



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Dear Dr.

Thank you for taking part in the "Audit of Surgery Satisfaction".

The feedback for the second phase comparing the first and second phase audit for attenders, non-attenders, and diabetics, and the patients' comments for your practice/surgery is enclosed.

1. The results are mostly good.
2. Availability and continuity receive the lowest satisfaction scores in all groups.
3. No improvement or reduction was noted between the first and second phases.

Please do not hesitate to contact me if you need more information.

I would be grateful if your practice could supply me with feedback from the practice team regarding the second phase results.

Thank you again for taking part,

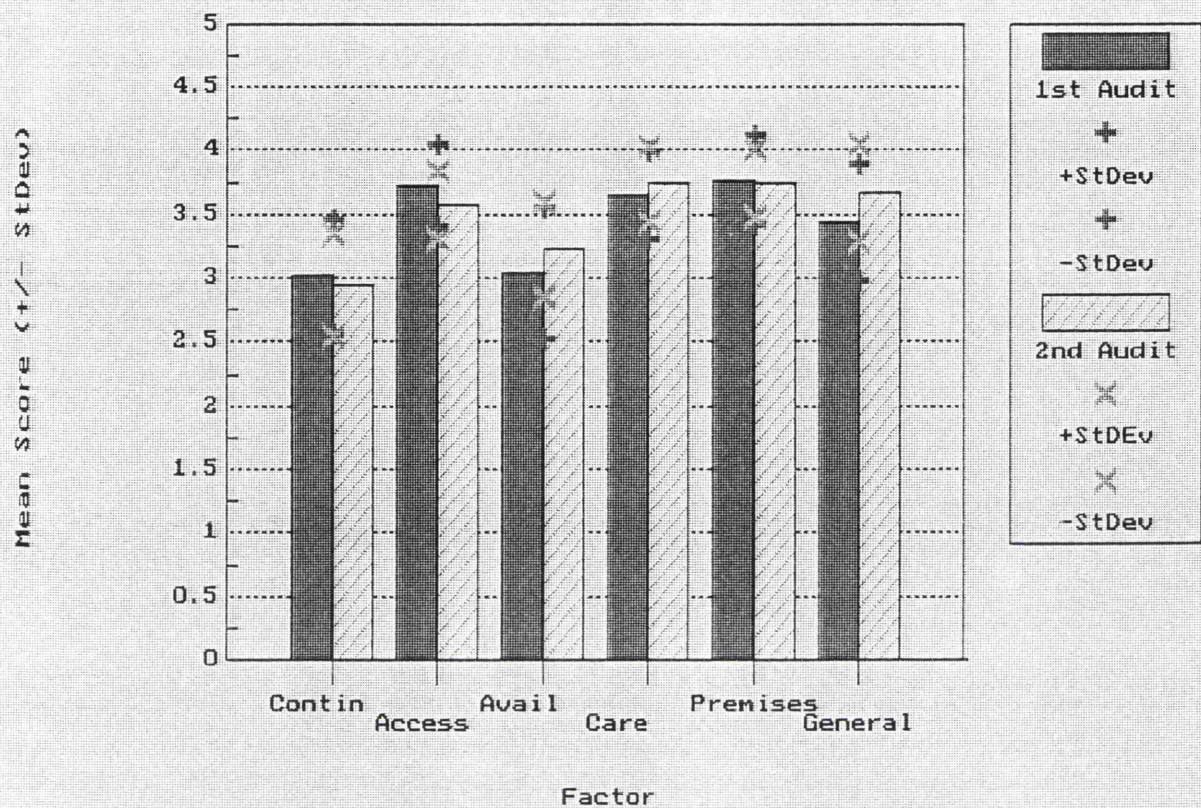
Yours sincerely,

Dr. Sami. M. Husain.
Research fellow

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Comparison of Two Audits in a Practice

Summary of All Sections



ATTENDERS - SECOND PHASE

20.11.92

Summary of Comments Practice Code: 78 Audit: 4

Page

Comments:

Comment Type = +ve

Doctors (X) surgery is the best to others that I have heard about.

Dr. Y is very caring and understanding. We wish she could stay on.
She good at her job.

Everyone makes mistakes at some time or other, however, I have never been the subject of any mistake made by my doctor (s).

Generally very satisfied with the practice.

Good doctors, polite, caring at their job.

I am satisfied.

I have always been given an appointment for the same day when it was really No 14 only applies for routine or non-urgent appts.

I think the surgery is good offers all necessary treatment quickly and efficiently.

In general I'm very satisfied with everything in this practice.

In my experience, levels of care and attention at two surgery are of the highest standards.

Overall generally quite sympathetic to any illness.

So pleasant the doctors are so caring. I am completely satisfied.

The care in the surgery is excellent.

Very satisfied with the care and attention I received when I attend.

Comment Type = -ve

A child play area separate from the main sitting room with glass partition adjoining would be a good benefit.

I cannot understand why it can be a week before you can get an appointment specific doctor.

I think receptionists could be more friendly.

In general I am very happy with the services we received here both from doctors and reception staff. Sometimes it would be better if an appointment could be gotten sooner.

It can be hard to get an appointment right away because their is so may patients in Eastkilbride.

Many of the above questions are almost identical and some unimportant. More important/relevant questions could/should have been asked.

One has always to wait far too long when have made an appointment a few times I have walked out in disgust.

Receptionist could be more friendly.

The waiting room is reasonably modern but requires a new carpet.

Comment Type = Neutral

Fortunately I haven't required medical help too often so my observation a limited.

Above comment based upon a very infrequent use of the surgery.

I do not visit surgery very often except for family planning therefore I'm qualified to comment.

NON-ATTENDERS - SECOND PHASE

20.11.92

Summary of Comments Practice Code: 78 Audit: 4

Page

Comments:

Comment Type = -ve

Most important is time spent with patients - I have little complaint regard my practice.

Some of the receptionists could be nicer in their manner of treating patient. They behave as if they were the Dr. and sometimes are very stropky.

DIABETICS - SECOND PHASE

20.11.92

Summary of Comments Practice Code: 78 Audit: 4

Page

Comments:

Comment Type = +ve

I am very impressed and completely satisfied with the Drs. at the surgery and also with the condition of the surgery.

I find on the whole that this Health Centre is very well run on a daily basis and definitely everyone is very helpful. No complaints.

I find the practice and associated clinics excellent.

Satisfied with everything.

The level of patient care at this practice is of a very high standard.

Comment Type = -ve

Only once did I have to get a Dr. out at night, and I was not happy with his service and if he came again I would ask for another as he was 4 hours late last time.

Sometimes after getting appointment, depending which Dr. I see, I have to wait quite a long time before being seen by the Dr.