

**DEVELOPMENT AND VALIDATION OF A
SCALE TO MEASURE PATIENT
SATISFACTION WITH ANTENATAL CARE**

By

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

Summary

There is no standardised instrument available in South Africa to measure patient satisfaction with antenatal care. The measurement of patient satisfaction is especially important after the implementation of a free antenatal care service in the South African health system.

The purpose of this study was to develop and validate an appropriate scale to measure patient satisfaction. Several methods to measure patient satisfaction are described in the literature. A questionnaire was developed for the Tygerberg Hospital patients. This questionnaire was tested in 200 antenatal patients through a structured interview.

The importance of cross-cultural research is emphasised in the validation of the measuring instrument. Factor analysis was used to validate the instrument. This showed that a single factor accounted for most of the total variance. All the items had to do with the process of antenatal care.

The findings of this survey showed the following:

- One cannot use overseas measuring instruments without adjusting for cross-cultural differences.
- The patient satisfaction score is negatively skewed with a high mean.
- Social desirability response sets may play an important role in these questionnaires.
- There is a statistically significant difference in patient satisfaction with antenatal care between the different antenatal clinics, even after controlling for socio-demographic differences.
- That the satisfaction score is a reflection of the service rendered to the patient and not of the socio-demographic differences.

This research identified the difficulties of developing a standardised instrument to measure patient satisfaction with antenatal care and opens the way for future research into patient satisfaction with medical services.

Opsomming

Daar is geen gestandaardiseerde meetinstrument om pasiënte se tevredenheid met voorgeboortesorg in Suid Afrika te bepaal nie. Die noodsaaklikheid van die bepaling van tevredenheid met voorgeboortesorg het nou belangriker geword nadat 'n stelsel van gratis voorgeboortesorg in Suid-Afrika geïmplementeer is.

Die doel van hierdie navorsing was om 'n skaal te ontwikkel om pasiënte se tevredenheid met voorgeboortesorg te bepaal en om die geldigheid van hierdie meetinstrument plaaslik te toets. In die literatuur is daar verskeie metodes om pasiënte se tevredenheid te bepaal. 'n Vraelys is ontwikkel vir Tygerberg Hospitaal se voorgeboorte pasiënte. Hierdie vraelys is getoets by 200 pasiënte in die voorgeboorte klinieke in Tygerberg Hospitaal deur middel van 'n gestruktureerde onderhoud.

In die geldigheidsbepaling van die meetinstrument is die belangrikheid van kruiskulturele navorsing beklemtoon. Faktoranalise is gebruik vir die bepaling van geldigheid. Met faktoranalise is aangetoon dat een onderliggende faktor, naamlik die voorgeboortesorgsisteem, pasiënte se tevredenheid verklaar.

Die bevindings in hierdie ondersoek het die volgende getoon:

- Dat alle meetinstrumente nie summier transkultureel toegepas kan word nie .
- Dat die tevredenheidsmeting van voorgeboortesorg 'n negatiewe skewe verspreiding het, met 'n hoë gemiddelde telling.
- Sosiaal-aanvaarbare antwoorde speel waarskynlik 'n groot rol in hierdie vraelyste.
- Dat daar 'n statistiese betekenisvolle verskil is in die tevredenheidsgraad van pasiënte met voorgeboortesorg tussen sommige klinieke; selfs nadat gekontroleer is vir sosio-demografiese verskille tussen pasiënte.
- Dat die tevredenheidsmeting 'n weerspieëling is van die diens gelewer aan die pasiënt, en nie net 'n weerspieëling is van die pasiënt se sosio-demografiese verskille nie.

Hierdie navorsing identifiseer die probleme met die opstel van 'n gestandaardiseerde meetinstrument vir die bepaling van pasiënte se tevredenheid met voorgeboortesorg en baan die weg vir verdere navorsing oor pasiënte se tevredenheid met mediese dienste.

DEDICATION

I dedicate this thesis to all patients and providers involved with antenatal care in South Africa. May we all strive to deliver antenatal care of the highest quality; with all the advantages it brings to both patient and provider.

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Chapter 1

Background and aim of study

A recent change in the policy of the health care system in South Africa resulted in a major change in antenatal care. Patient satisfaction is an important measure of quality of health care, and this measure was neglected in South Africa so far. There is no locally applicable instrument available to measure patient satisfaction with antenatal care. I will elaborate more on this in the current chapter.

1.1 Changing health care system in South Africa

On May 24 1994, President Nelson Mandela declared that pregnant women and children under the age of six years should receive free health care. This was in response to a situation where infants and young children carry the burden of preventable morbidity and mortality. The greatest cost is borne by the poor and those with limited access to health care. Adequate provision of antenatal care and a safe birthing environment is associated world-wide with a significant decline in perinatal and maternal morbidity and mortality. This declaration aimed to improve access to antenatal health services by the removal of user fees. Free health care can promote equity in a society of disparities (Kirsch, 1997).

The South African public have also expressed concern about the adequacy and availability of good medical care, particularly for the less affluent members of society (Hudson, 1990; Redakteur, 1998; Reynolds, 1998). Before the Government of National Unity came to power in 1994, health care in South Africa was racially discriminatory, fragmented and poorly co-ordinated. Only one-fifth of the population with private medical insurance enjoyed good health care. For the remaining 80%, who relied on public facilities, racially segregated hospital based tertiary care available to all socio-economic groups was beginning to disintegrate (Benatar, 1991), and primary and community care services were grossly inadequate (Kirsch, 1997).

This new health care system was inadequately evaluated a year after its implementation with regard to impact on health service utilisation, monetary costs

(additional expenditure) and the perceptions of users and providers was assessed (Jacobs and McCoy, 1997). Each of these findings is discussed in more detail below.

1.1.1 The impact on health service utilisation.

Jacobs's and Kirsch's studies show that attendance of patients at public sector facilities as well as the number and proportions of referrals from clinics increased. It was concluded (Jacobs and McCoy, 1997) that user fees was probably an important deterrent to service utilisation by the general population and those in need for referral to a teaching hospital. There was also a decline in the proportion of unbooked antenatal patients. Unbooked patients are usually young, unmarried, unemployed and have a low income (Pattinson and Roussouw, 1987). They have more obstetric complications, e.g. premature labour, premature rupture of the membranes and intra-uterine death. The decline in unbooked antenatal patients indicate an impact on one of the key intermediate determinants of infant well being. There was also an inappropriate use of referral hospitals because of the inadequacy of the primary health care facilities. People who should have been seen at the primary health care level were referred to tertiary hospitals unnecessarily because of the inadequate conditions at the primary care facilities.

1.1.2 The monetary costs

It was further found that the biggest public health service expenditure item, namely staffing costs, was not altered by this new policy. No direct assessment was made of the increase in drug costs (estimated at less than one percent of the total public sector health budget). Revenue lost from user fees was estimated at 30% (1.5% of the total public health budget) with most of this occurring at the level of the referral hospital. The shift to primary health care also resulted in severe cuts to the budgets of the teaching hospitals. There are cuts of up to 25% planned for the two teaching hospitals in the Western Cape (Kirsch, 1997: 1545).

1.1.3 Perceptions of users and providers

Again, in these reports no formal evaluation was made of the views of the users and providers. According to Jacobs *et al.* (1997: 1542), the evaluation was retrospective and the quality of the information poor. Health managers at high level meetings were asked for their views of the users and providers and they decided what the views and needs of the users should be. The users apparently supported the new policy in general and believed that access to health care services had been improved. Although the health care providers believed that the policy helped to prevent serious illness in children and pregnant women, there was concern that this new policy may aggravate pre-existing deficiencies in the health care system. These deficiencies included poor waiting room facilities, low morale amongst health care staff, overcrowding of facilities and scarcity of equipment and medicine.

The general opinion was that the implementation of this new policy, with its extensive implications in practice, should have been preceded by greater consultation with the providers and users. A major concern of the providers is the capacity and capability of the health services to cope with the extra workload, especially in the antenatal clinics (Kirsch, 1997: 1544). The special case for antenatal care will be highlighted next.

1.2 The special case for antenatal care

Recent ethnographic studies done in the clinics in the Western Cape showed that some of the staff in the antenatal clinics abuse patients. In one study (Jewkes, Abrahams and Mvo, 1997a), in-depth interviews were conducted with nine staff members in different clinics. In addition, one focus group was held in one of the clinics. Data were analysed using the grounded theory approach. The interviews focussed on the perceptions of the staff regarding their working environment and the problems they encountered in their work.

Most of the staff thought that the services were overloaded. Only a fixed number of new patients can be booked daily. In order to be amongst those accepted, patients have to start queuing at 4 am in the morning and some even spend the night before the gates. The staff also perceived that an increased workload was forced onto primary care level to reduce the load at the secondary and tertiary facilities, without a concomitant increase in staff.

Expressions, such as "we are dying of the workload here", "...as busy as a factory" "...its just a matter of performing a delivery, seeing the patient, getting her off and hopping onto the next patient" identified workload as an important problem in some of the clinics. This pressure led to staff taking sick leave on a regular basis, further increasing the workload on the remaining staff. Another source of distress was patient- and community dissatisfaction with the service. This occurred in the antenatal clinics when a large number of patients were booked for return visits on one day.

A follow-up report (Jewkes and Mvo, 1997b) at these clinics, investigated women's health seeking practices and perceptions of quality of health care. Qualitative methods were used and semi-structured, in-depth interviews were conducted with seventeen women recruited on their first antenatal visit. Repeat interviews were conducted with ten of the patients, giving a total of fifty interviews. The interviews were audiotaped and transcribed. Data were again analysed using the grounded theory approach. Participant observation and a narrative group discussion were also used in this research.

Although some women were satisfied with their antenatal care, for many the experience was that of early rise and a long wait before being subjected to a number of investigations performed on them without adequate explanation, being intimidated and shouted upon by the staff, and then forced to listen to an educational talk that focussed mainly on danger signs. For many, this experience was unpleasant and dissatisfying, as they did not receive the reassurance and the information on their pregnancy that they desired (Jewkes, 1997b). The most striking finding of this study was the extremely poor relationship existing between staff and patients at these clinics.

1.3 Development of a South African instrument

Although these studies are extremely important and useful in identifying areas for improvement in services, and to highlight areas for further inquiry, perceptions and incidents do not always give an objective view of the global situation in the antenatal service. Problems have been identified, but the extent of the problem is unknown. To yield reliable results, a standard instrument is necessary to measure patient satisfaction with antenatal services. After such a standardised instrument has been developed and validated, further research can seek understanding of what cause some of the phenomena by looking at variation between cases, and looking for other characteristics which are systemically linked with it, and thus draw casual inferences (De Vaus, 1996: 5).

There is currently no standardised instrument available in South Africa to measure patient satisfaction with antenatal care. Recent studies in South Africa concentrated on ethnographic details, using mainly interviews (Jewkes, 1997a; Jewkes, 1997b; Westaway, Viljoen, Wessie, McIntyre and Cooper, 1994). Some controlled quantitative studies were done. These studies investigated patient satisfaction with antenatal care indirectly by examining reasons why patients do not book at antenatal clinics, but no standardised instrument was used (Pattinson, 1987; Hamilton, Perlman and de Souza, 1987).

It is very important to take the patient's subjective health assessment into consideration when assessing patient satisfaction. If the patients' perceptions and feelings are taken into account during health care decision making, patients will become empowered by active engagement in maintenance and management of their own health (Jenkinson, 1994). This perspective also fits with a more market driven and competitive health care delivery environment, where consumer needs and preferences will be important considerations in the allocation of scarce resources.

Subjective health assessment is an essential foundation for bringing civility and humanity back into medicine by taking patients' perceptions, feelings and problem situations into account in understanding need and delivery of care. Increasingly, health care systems should attempt to match the provision of health care needs of

specific populations. Existing need assessments, largely in the form of socio-demographic variables and mortality data, do not provide information that is sufficient to make realistic decisions about resource allocation (Jenkinson, 1994: 31).

1.4 Purpose and aim of the study

The purpose of this study is to develop and validate an appropriate scale to measure patient satisfaction with free antenatal care. This standardised instrument may then be used to evaluate the extent of satisfaction.

Scales are standardised instruments aimed at measuring various aspects of human behaviour, attitude and disposition. As is the case in the development and validation of any scale, its successful application to a specific domain depends on some critical conditions. First, the underlying construct (in this case patient satisfaction with antenatal care) must be based on a clear and unambiguous conceptualisation (i.e. meeting the criteria for construct validity).

Second, the actual instrument must be appropriate to the context of application. This includes factors such as clear and unambiguous questions/items, items that adequately cover the construct (scope), unidimensionality of subscales and the criteria of measurement validity (Mouton, 1996).

1.5 Outline of the thesis

In the following chapter the concept of "patient satisfaction" is discussed. Existing scales to measure patient satisfaction are also reviewed. In chapter three the research design and methodology of the Tygerberg Hospital study is discussed. Chapter four contains an outline of the analysis and research findings of the study, and in chapter five conclusions and recommendations for further studies are made.

Chapter 2

Conceptualising patient satisfaction -an overview of instruments and studies measuring patient satisfaction with health care and antenatal care

It has become standard practice to apply six criteria to assess the quality of any health service, namely effectiveness, efficiency, accessibility, equity, social acceptability and relevance (Maxwell, 1984). Of these, social acceptability or patient satisfaction with medical care is increasingly used to evaluate the quality of health care services (Cleary and McNeil, 1988; Senf and Weiss, 1991). What is patient satisfaction? How do you define it? How do you measure it?

This chapter is in three parts. In the first part I examine two standard instruments measuring patient satisfaction with medical care. This discussion will focus on the development, nature, problems and methods of testing of the instrument and the multidimensional nature of patient satisfaction. In the second part, I discuss the nature and testing of instruments to measure patient satisfaction with antenatal care. The last part deals with socio-demographic and other variables that have been shown to influence patient satisfaction. In addition, the importance of the patient-provider relationship is discussed.

2.1 Instruments measuring patient satisfaction with medical care

2.1.1 Defining and measuring patient satisfaction with medical care (Ware, Snyder, Wright and Davies, 1983b)

A patient satisfaction rating is both a measure of care and a measure of the patient who provides the rating. Thus, patient satisfaction is a goal in itself, an indicator of the quality of care as pertained by the patient, and a predictor of future patient behaviour, such as compliance with treatment or change of provider (Ware and Davies, 1983a; Marquis, Davies and Ware, 1983; Giles, Collins, Ong and McDonald, 1992; Williamson and Thomson, 1996).

It is wrong to equate all information derived from surveys with patient satisfaction (Ware, 1981). Satisfaction ratings are more subjective. They do not always correspond with objective reality or with the perceptions of providers of administered care. They capture a personal evaluation of care which differs from a report which is intentionally more factual and objective. The strength of these subjective satisfaction ratings seems to be that they do not necessarily correspond with the objective reality or with perceptions of providers and administrators of care. These differences reflect the reality of care to a substantial extent as well as personal preferences and expectations of the users.

An important conceptual issue is the nature and number of dimensions of patient satisfaction. In the Ware *et al.* study (1983b), a taxonomy of characteristics was built

to classify the content of satisfaction measures and for evaluating the content validity of the patient satisfaction questionnaire (PSQ). The taxonomy that was derived at showed that several different characteristics of providers and medical care services influence patient satisfaction. Patients also develop distinct attitudes toward each of these characteristics (Ware *et al*, 1983b: 248).

Ware *et al*. (1983b) describe the development of Form II of the PSQ, a self-administered survey instrument designed for use in general population studies. The PSQ contains 55 Likert-type items that measure attitudes towards the more salient characteristics of doctors and medical care services (technical and interpersonal skills of providers, waiting time for appointment, office waits, emergency care, costs of care, insurance, coverage, availability of hospitals and other resources), and satisfaction with care in general.

Scoring rules for 18 multi-item subscales and eight global scales were standardised following the replication of item analysis in four field tests. Internal consistency and test-retest estimates indicated satisfactory reliability for studies involving group comparisons. Ware claimed that the PSQ provide an accurate representation of the characteristics of providers and services described most often in the literature and in response to open ended questions. Empirical tests of validity have also produced generally favourable results (Ware *et al*, 1983b: 247).

The National Centre for Health Services Research and Development funded the Ware *et al*. project that started in 1973 at the Southern Illinois University School of Medicine. The major goal of the project was to develop a short, self-administered

satisfaction survey that would be applicable in general population studies and would yield reliable and valid measures of concepts that had both theoretical and practical importance to the planning, administration and evaluation of health services delivery programmes (Ware *et al*, 1983b). This led to the development and testing of numerous instruments including several patient satisfaction questionnaires in this research project.

The dimensions used in form II, which has proven to be the most comprehensive and reliable version in the project, are summarised with examples of item content (Ware *et al*, 1983b: 248). The order of these dimensions reflects the relative frequency of their inclusion in studies of patient satisfaction before development of the PSQ. The first four were by far the most commonly measured features of care as measured in most patient satisfaction studies.

These dimensions are:

1. Interpersonal manner:

Features of the way in which providers interact personally with patients (e.g. concern, friendliness, courtesy, disrespect, rudeness).

2. Technical quality:

Competence of providers and adherence to high standards of diagnosis and treatment (e.g. thoroughness, accuracy, unnecessary risks, making mistakes).

3. Accessibility/convenience:

Factors involved in the arrangement of medical care (e.g. time and effort to get an appointment, waiting time at office, ease of reaching location).

4. Finance:

Factors related to paying for medical services (e.g. reasonable costs, alternative payment arrangements, comprehensiveness of insurance coverage).

5. Efficacy/ outcomes:

The results of medical care encounters (e.g. helpfulness of medical care providers in improving or maintaining health).

6. Continuity:

Sameness of provider and/or location of care (e.g. see same physician).

7. Physical environment:

Features of setting in which care is delivered (e.g. orderly facilities and equipment, pleasantness of atmosphere, clarity of signs and directions).

8. Availability:

Presence of medical care resources (e.g. enough hospital facilities and providers in area).

The strategy in the project to develop the PSQ form II was to improve the reliability and validity of items and multi-item scales and to reduce the cost in money and time required for the administration of the PSQ. The process started with a survey (the Seven-County study) that included 900 items administered in person by trained interviewers (1973; Ware *et al*, 1975). The research began without an agreed-upon conceptual framework for defining and measuring patient satisfaction. Instruments were tested over a four-year period in an interactive process that included formulations of models of the dimensions of patient satisfaction, construction of measures of those dimensions, empirical tests of the measures and models and

refinements in both. This process included twelve studies of assessment of patient satisfaction and some secondary data analysis of other data.

Studies of Form II of the PSQ, which proved to be the most reliable instrument, were done in four independent field tests from 1971 to 1982. It was included in three general household surveys (East St Louis, Illinois, Sangamen County, Illinois and Los Angeles County, California) and a survey of patients enrolled in a family practice centre (Springfield, Illinois). Sample sizes ranged from 323 to 640 respondents.

For this form (Form II), an outline of constructs was developed from the content of available instruments, published books and articles from the health services research literature. Responses of samples of persons to open-ended questions about their experiences with doctors and medical care services were also used. A comprehensive specification of patient satisfaction constructs and a good understanding of the words people use were sought in this development.

Item-generation studies consisted of three tasks:

- i. Developing statements of opinion about medical care from sentence fragments;
- ii. Expressing comments about the most and least liked aspects of medical care; and
- iii. Responses from group sessions in which participants were asked to compare and discuss statements of opinion that reflected favourable and unfavourable statements about medical care.

A pool of approximately 2300 items were generated and thereafter sorted into content categories by independent judges. The resulting content outline and constructs

identified from other instruments and literature were integrated into a taxonomy on which they based initial hypotheses about the nature and number of satisfaction constructs. Redundancies and ambiguities were identified and the item pool was reduced to 500 edited items, each describing only the characteristic of medical care services.

2.1.1.1 Methodological considerations

In the development of the PSQ II form, questions about data gathering methods, the structure of the PSQ II items, instructions to respondents and other procedural issues were addressed. This was done by reviewing the literature, consulting experts and formal studies.

In the final PSQ II form, the above dimensions of patient satisfaction were tested with a choice of Likert-type items. The standardised patient satisfaction item has two parts: the item stem and the response scale. The traditional approach to attitude measurement was chosen where the standardised item was followed by a five-point response scale choices range from "strongly agree" to "strongly disagree".

Instructions to patients in the self-administered questionnaire were clear:

"On the following pages are some statements about medical care. Please read each one carefully, keeping in mind the medical care you are receiving now. If you have not received medical care recently, think about what you would expect if you needed care today. On the line next to the statement circle the number for the opinion which is closest to your own view."

The instructions are followed by an example and further explanation of the use of the response scale and end as follows:

"Some statements look similar to others, but each statement is different. You should answer each statement by itself. This is not a test of what you know. There are no right or wrong answers. We are only interested in your opinions or best impressions. Please circle only one number for each statement."

Ware and co-workers (1983b: 251) found that the advantages of using the traditional Likert-type scaling in assessing patient satisfaction were:

- i. The use of identical response scales for all items facilitated the task of completing a questionnaire. Once familiar with the response choices, the respondents can listen to or read each item and quickly indicate their response.
- ii. It is easier to format the questionnaire when the same response choices are used for each item and the questionnaires can be printed on fewer pages.
- iii. It is easier to revise items if change to the distribution of item responses is necessary (e.g. a reduction in skewness) when item stems are structured as statements of opinion.

A key assumption was that the notion of "satisfaction" is a continuum. Published studies and analyses of pre-test data suggested that five choices yielded more information and more reliable responses than did two or three (Oppenheim, 1992;

Munn and Drever, 1991; Ware *et al*, 1983b). An increase to seven response choices did not seem to warrant the resulting increase in questionnaire length and the complexity of formatting items.

An example of the item format is as follows:

I am very satisfied with the medical care I received	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
	1	2	3	4	5

A problem of measuring patient satisfaction is whether one measures the respondent's personal care or the general care experiences. The main reason for being interested in items with a more general reference is to reduce the number of unanswered items because of inapplicability. Ten pairs of items that measured satisfaction constructs were used in two of the field tests. Mean scores for items measuring personal care experiences were consistently more favourable than for items that described the experiences of people in general (Ware *et al*, 1983b: 250). I will refer to this again later in the study of Senf *et al*, (1991).

2.1.1.2 Administration methods

Ware *et al*. (1983b: 251) examined various administration methods and the effect on response rates, completeness of data, data gathering costs, characteristics of respondents and non-respondents and satisfaction level.

They found response rates not completely determined by administration method, whether it would be through self-administration and returned by mail, or by self-administration supervised by a trained interviewer. The rigour of follow-up seemed to be more important in determining completion rates when they relied on mail-back surveys (Ware *et al*, 1983: 251). No difference in data quality between supervised and non-supervised self-administration was detected. Supervision by a trained interviewer increased data-gathering cost about five-fold. The characteristics of respondents and non-respondents were compared in a randomised-controlled experiment (the Los Angeles County field test) (Ware *et al*, 1983). The characteristics of the respondents were determined during an interview before the questionnaire was dropped off for self-administration and returned by mail or completed under supervision. Of the people who returned the completed questionnaires, persons aged 40 and younger, non-whites and low-income persons were significantly under-represented. Comparisons of satisfaction scores for persons in the mail-back and hand-back groups suggested that those who were satisfied with the quality of their care are less likely to return questionnaires (Ware *et al*, 1983: 251).

There are also problems with the length of time required to complete a patient satisfaction questionnaire. Scores tend to be lower when longer questionnaires are used. The placement of the measuring instrument in a survey is also important as scores tends to be lower when it is placed at the end of the questionnaire. Therefore it is important to standardise the order of the questionnaire.

In an attempt to overcome these problems, several attempts have been made to shorten the form II PSQ without compromising satisfaction-rating scores. A 43-item

short patient satisfaction questionnaire was developed from the form II PSQ which brought the time of completing the questionnaire down from about 11 minutes to about 8-9 minutes (Ware *et al*, 1983: 251).

2.1.1.3 Response set effects

A balance of favourably and unfavourably worded items to control for bias due to acquiescent response set (ARS) were used in the development of the PSQ II. ARS is a tendency to agree with statements of opinion regardless of content. It can produce differences that range between ten and fifteen per cent and is more likely to occur amongst responders with a low level of education (Mouton, 1996). During development of the PSQ II, 40% to 60% of the respondents manifested some degree of ARS and 2% to 10 % demonstrated substantial ARS tendencies. Eleven matched pairs of favourably and unfavourably worded items that measured the same feature of care that were extremely validity checked items were used to identify such responses.

Two other types of response sets that might bias patient satisfaction were studied. Opposition response set is a tendency to disagree with statements regardless of content (Ware *et al*, 1983b). A socially desirable response set is a tendency of respondents to give answers that make the individuals appear well adjusted, unprejudiced, rational, open-minded and democratic (Mouton, 1996: 154). Opposition response set was very rare and of little concern. Socially desirable response sets were common but did not correlate with ratings of satisfaction with medical care.

2.1.1.4 Description of PSQ items

Eighty Likert-type items were administered in form I of the PSQ. The analysis of items led to the construction of the PSQ II. The verbatim content of the 68 items in Form II as it appears in the order of their administration is included in Appendix I (Ware *et al*, 1983: 252).

Item descriptive statistics were evaluated before testing multi-item scales. The distributions of item scale response scores were checked to determine whether rewording items would be necessary to achieve symmetrical response distributions. Because item scores are coarse, less reliable and substantially influenced by the direction of item wording and other methodological features in addition to the constructs being measured, a major aim in the studies was to test the taxonomy of patient satisfaction constructs. Ware used a Factor Homogenous Item Dimension (FHID) to increase chances for success because their goal was limited by the adequacy of the measures available for model testing. A FHID is a group of items that has satisfied both logical and statistical criteria. The logical criteria are that the items have very similar content and appear highly conceptually related (Ware *et al*, 1983: 255). Items that fulfil these criteria were calculated with the help of factor analysis to yield a single score that serves as a unit of analysis in subsequent analyses.

Evaluation of item groupings was conducted in two phases. First, 20 hypothesised FHIDs were tested and factor analysed. The final analysis showed 18 item groupings. These 18 item groupings and global scales (Table 2.1) were subjected to multitrait scaling tests during the second phase of the analysis. This involved the inspection of item-scale correlation matrices.

Table 2.1

**Validated item groupings for patient satisfaction questionnaire subscales (Ware,
Snyder and Wright, 1976: 198)**

Dimension/ Item grouping	Item number
Access to care (non-financial)	
1. Emergency care	19, 38, 49
2. Convenience of services	12, 43
3. Access	18, 31
Financial Aspects	
4. Cost of care	14, 24, 49, 63
5. Payment mechanisms	4, 20, 49, 63
6. Insurance coverage	9, 21, 38
Availability of resources	
7. Family doctors	53, 67
8. Specialists	7, 32
9. Hospitals	42, 61
Continuity of care	
10. Family	8, 65
11. Self	5, 23
Technical quality	
12. Quality/ competence	3, 6, 17, 25, 30, 34, 50, 51, 60
13. Prudence risks	47, 54
14. Doctor's facilities	10, 40
Interpersonal manner	
15. Explanations	28, 62, 68
16. Consideration	22, 26, 29, 39, 55
17. Prudence expenses	33, 66
Overall satisfaction	
18 General satisfaction	1, 16, 45, 58

2.1.2 Comparison of patient satisfaction with ambulatory visits in competing health care delivery settings in Geneva, Switzerland (Perneger, Etter, Raetzo, Schaller and Stadler, 1996)

Perneger *et al.* (1996) describes a cross sectional survey to measure seven dimensions of patient satisfaction. This study was done in 1994 with patients who visited specialists in a newly established managed care organisation, a private group practice and a university hospital outpatient clinic in Geneva, Switzerland. One thousand and twenty seven adult patients (81% participation rate) were included in the study. It was concluded that the comparison of patient satisfaction across health care settings provides a basis for targeted quality improvement initiatives.

Questionnaires were mailed to patients who consulted in four health care delivery settings. The study population consisted of French speaking Geneva residents who were 16 years and older with their index visit. Patients were contacted one month after the visit to the health care setting and non-respondents were sent up to four reminders.

Patient satisfaction was assessed using a 16-item questionnaire derived from previously published instruments. The sixteen items measured seven dimensions of patient satisfaction (Perneger *et al.*, 1996: 464). Each statement was followed by five response options ranging from "strongly agree" to "strongly disagree". Value laden (positive or negative) statements were classified as pertaining to care in general, the physician, accessibility of care and neutral comments. The satisfaction survey instrument is described in Table 2.2.

Table 2.2**Description of the satisfaction survey instrument (Perneger *et al*, 1996: 464)**

	Dimension of satisfaction	Abbreviated item
1.	General satisfaction	I am very satisfied with care. Care was almost perfect.
2.	Access to care	Getting an appointment was difficult. Site of care easy to get to. I had to wait a long time.
3.	Reception staff	Reception staff friendly and courteous.
4.	Physician-relation	Physician treated me with respect. I fully trust the physician. Physician did his best to reassure me
5.	Physician-time spent	Physician spent a lot of time with me Physician took time to listen.
6.	Physician-explanations	Physician explained tests ordered. Physician explained what to expect.
7.	Physician-technical	Physician was very competent Physician was very thorough Physician avoided unnecessary care

Scores for independent dimensions were computed. Global scores were from 0 (lowest level of satisfaction) to 100 (highest level of satisfaction). The Cronbach α (internal consistency) coefficient was 0.90 for the total of the 16-item scale and was sufficient for group comparisons for all subscales except access to care.

The main predictor for patient satisfaction was the setting of the visit. Patients in the managed plan clinic were the least satisfied on all aspects of health care. Patients

attending the private group practice had the highest satisfaction ratings. Intergroup differences were greater for general satisfaction with care than for the other dimensions of care. Satisfaction with access to care was significantly lower in the managed care clinic and in the hospital clinic than those at the private clinics.

The private group practice patients were born in Switzerland and were at least 15 years older than patients attending the other clinic. Thirty-eight percent of patients seen in the university hospital clinic did not have an appointment to see the doctor. When the differences in socio-demographic variables were adjusted for in ANCOVA models, managed care scored the lowest in only five dimensions (before adjustment of all seven dimensions). The hospital clinic received the lowest rating for access and an independent specialist within managed care scored lowest on time spent with the physician. This lead to the conclusion that differences between sites were only partly attributable to characteristics of the patients served by the provider. The residual differences (after adjusted for in the ANCOVA models) were due to true differences in provider performance.

Furthermore, Perneger *et al.* concluded that a short, closed format satisfaction questionnaire might be a useful instrument for comparing the quality of care rendered by competing health care providers. Even where standards are considered to be uniformly high, patient satisfaction surveys are sensitive enough to provide a sound basis for quality assurance initiatives (1996; 467).

The previous two studies (Ware *et al.*, 1983 and Perneger *et al.*, 1996) differ in the development of the instruments. The PSQ form II developed by Ware *et al.* started

with a big pool of items from which they developed a multi-dimensional scale of patient satisfaction by means of factor-analysing methods. This was then validated in their general population. The instrument used by Perneger *et al.* was derived by using items from several other instruments to fit their aim of the study, and validated in their general population.

Both of these instruments were developed to be used in general population studies. Antenatal care can be regarded as an intermediate length of continuity of care over a six to nine month period of time depending on when a patient book. Pregnant women have different needs during antenatal care than patients during a walk-in clinic for acute problems. In the following section I will discuss instruments measuring patient satisfaction with antenatal care.

2.2 Instruments measuring patient satisfaction with antenatal care

In this section I discuss several instruments that were used in an antenatal care setting to explore how patient satisfaction with antenatal care was measured.

2.2.1 Should obstetricians see women with normal pregnancies? A multi-centre randomised controlled trial of routine antenatal care by general practitioners and midwives compared with shared care led by obstetricians (Tucker, Hall and Howie, 1996).

Tucker *et al.* (1996) used a self-administered questionnaire in a multi-centre randomised controlled trial of antenatal care in Scotland in 1989, to compare two

groups of antenatal care. In the one group, general practitioners and midwives provided routine antenatal care and in the other group, the antenatal care was obstetrician-led.

Women at low risk for antenatal complications were included in this study (n=1765). The main outcome measures were comparisons of health services used, indications of quality of care and women's satisfaction with the care. Both groups experienced high levels of satisfaction with care (68% versus 65%, p=0.5). They concluded that routine specialist visits for women initially at low risk of pregnancy complications offer little or no clinical or consumer benefit.

The self-administered questionnaire aimed to assess women's views of their care. It was adapted from other questionnaires and piloted with women not included in the study. Seven aspects of the patients' experience with care were measured (Tucker *et al*, 1996: 555). These were:

- i. Overall satisfaction with their antenatal care.
- ii. Service provision characteristics.
- iii. Experience of attending clinics.
- iv. Relationship with staff.
- v. Information requisition.
- vi. Continuity of care.
- vii. Acceptability of their style of care.

The instrument measuring the seven aspects of patient satisfaction with antenatal care is summarised in Appendix II.

The questionnaire was mailed six weeks after delivery to 97% of women in the trial. Patients who aborted, had stillbirths, neonatal deaths or whose babies were still receiving intensive care, were excluded. There was a 78% response rate to the postal survey.

In the general practitioner and midwife group, significantly more women reported getting on "very well" with their main care provider (rather than "well" or "not at all") and more reported unreservedly enjoying their antenatal care. More women in this group expressed a strong preference to "see the same person" at each antenatal visit rather than agreeing that they would accept increased numbers of carer providers. There were no significant differences between the groups on the other issues.

This study indicates the multi-dimensional concept of patient satisfaction. It also illustrates the pitfalls of quantifying the satisfaction rating.

2.2.2 Women's satisfaction with birth centre care: a randomised controlled study (Waldenström and Nilsson, 1993)

The purpose of this study was to evaluate women's satisfaction with the care they received at the birth centre compared with standard antenatal, intrapartum and postnatal care. The birth centre is part of the public health service in Stockholm. Patients are cared for by the same team of midwives from their first booking up to the final visit two months after birth. Only low risk patients attend the clinic that has a

restrictive policy regarding the use of medical technology. Parental responsibility and self-care are other features of the birth centre.

Between October 1989 and February 1992, 1230 women were enrolled in Stockholm in this randomised-controlled trial allocating them to maternity care at the birth centre or standard obstetric care. Three questionnaires to evaluate patient satisfaction were administered during the trial. The questionnaires were self-completed and contained three types of questions:

- i. Predefined alternatives;
- ii. seven-point scales with extreme values verbally described; and
- iii. two open ended questions about advantages and disadvantages of birth centre care.

The first questionnaire was filled out on the first visit before randomisation. This questionnaire determined the patient's background characteristics (demographic details and attitudes).

Questions regarding attitudes are listed in Table 2.3.

Table 2.3

Questions concerning attitudes towards pregnancy (Waldenström *et al*, 1993; 6)

<ul style="list-style-type: none">• Physical well-being in present pregnancy (1= I feel very ill, 7= I feel very well) • Mental well-being in present pregnancy (1= I feel very ill, 7= I feel very well) • Expectations of approaching birth I think the birth experience will be ... (1= very negative, 7= very positive) When thinking of the birth, I feel (1= not at all anxious, 7= very anxious) • Focus of control Making my own decisions regarding medical treatment is ... (1= not all important, 7= very important)

The second questionnaire determined women's experiences of antenatal care and classes. This questionnaire was mailed to expectant mothers one month before the expected date of delivery of the baby. Three dimensions of patient satisfaction were measured in this questionnaire:

- i. Physical aspects of care (medical supervision and/or treatment);
- ii. Psychological aspects of care (professional responses to the women's thoughts and emotions); and
- iii. A comprehensive assessment of the care received.

A seven-point scale was used with 1= "very unsatisfactory" and 7= "very satisfactory". Patients who began their antenatal care in the standard antenatal care clinic group early in the pregnancy, had difficulty completing a comprehensive assessment of the care.

The third questionnaire was sent to the women two months after confinement. It covered the satisfaction rating of care received during birth and postpartum. Women in the group who attended the birth care centre were more satisfied with their antenatal care than those in the control group, especially with the psychological aspects of care.

2.2.3 Women's satisfaction with antenatal care in a changing maternity service (Williamson and Thomson, 1996)

Consumer dissatisfaction with maternity services in the United Kingdom is not a new concept. Women set up a natural childbirth movement that argued for the right of all women to have a normal childbirth experience, less medical intervention and natural forms of pain relief. All confinements in the UK are in hospitals. Several reports highlighted the reasons for dissatisfaction with this system of antenatal care. These include:

- i. long waiting times;
- ii. difficult access to clinics;
- iii. lack of continuity of care;
- iv. lack of opportunity to discuss the women's concerns; and
- v. the feeling that they are not benefiting from it as they should do.

A clear picture emerged in 1992 of the lack of time at antenatal clinics, the failure to explain reasons for procedures and the failure to offer adequate information (House of Commons Health Committee, 1992). In response to this, a report by an expert committee (Department of Health, 1993) recommended that antenatal services should be woman-centred, community-based health care.

A midwife-led antenatal care service was planned after these reports in a maternity unit in the north of England. Williamson and Thomson (1996) assessed the views of the women who would use this new service. This descriptive survey used a self-administered questionnaire between July and August 1993, and a self-administered audit questionnaire during December 1994 and February 1995, in a teaching hospital in the north of England. Their aim was to provide a descriptive analysis of women's views of the antenatal care provided in the study, to identify aspects of antenatal care considered by the women to be important, to determine whether women would welcome a formal midwife-led service and to audit sources of satisfaction and dissatisfaction identified in the survey.

One hundred and ten women attending antenatal clinics participated in the survey and 151 women participated in the audit. The survey questionnaire was developed by taking the aims of the study in consideration, by holding discussions with women who used the maternity services in the centre and by manually surveying women's experiences of maternity care. The questionnaire, which consisted of 34 questions, began with informal open-ended questions. The first 22 questions were general and looked at women's views of their antenatal care. In the second part of the questionnaire women could describe aspects of dissatisfaction with antenatal care and

the last section covered demographic data. The questionnaires were given to the patients in the waiting room for self-completion.

The findings from this survey led to the identification of variables that were used in the design of an audit of the antenatal clinic service. The single page audit questionnaire is a nine-point scale ranging from "excellent" to "very poor". This format was designed by the medical outcomes trust, Boston, USA (MOS 9, no date) (Table 2.4).

Table 2.4

The nine items tested in the Northern England audit

<p>a. How long did you wait to get an appointment.</p> <p>b. Convenience of the location of the clinic.</p> <p>c. Getting through to the clinic by phone.</p> <p>d. Length of time waiting at the clinic.</p> <p>e. Time spent with the person you saw.</p> <p>f. Explanation of what was done or planned for you.</p> <p>g. The technical skills (thoroughness, carefulness, competence) of the person you saw.</p> <p>h. The personal manner (courtesy, respect, sensitivity, friendliness) of the person you saw.</p> <p>i. Your overall impressions.</p> <p>Scale rating: Excellent; very good; good; fair; poor; very poor.</p>
--

Although this shorter questionnaire is useful, you still have to get all the socio-demographic details in a separate questionnaire. In this study women felt they were already having midwife-led care, but it was important to them to see a doctor during pregnancy. They were generally satisfied with antenatal care. The factors that caused satisfaction were:

- i. lack of continuity of care,
- ii. quality of advice given to them and
- iii. waiting time.

2.2.4 Other methods to measure patient satisfaction

Rating scales are not the only method to measure patient satisfaction. In this section I shall discuss an example of an indirect measure of patient satisfaction (Sikorski, Wilson, Clements, Das and Smeeton, 1996) using a questionnaire design. The studies that measure patient satisfaction through a structured interview are also very important. New items and concepts regarding satisfaction are derived for the specific population. These studies are very time consuming and expensive to conduct. A few interview studies will be summarised (Hyde, 1986; Kim, Maragwanda and Kols, 1997; Murira, Munjanaja, Zhanda, Nystrom and Lindmark, 1997; Sikosana, 1994).

2.2.4.1 A randomised controlled trial comparing two schedules of antenatal visits: the antenatal care project (Sikorski *et al*, 1996)

This randomised-controlled trial, conducted in London, United Kingdom, compared two schedules of antenatal visits. The control group had the traditional amount (13 visits) of visits and the study group had a "new style" amount (seven visits). They compared the two groups regarding fetal and maternal morbidity and mortality, psychosocial function of the antenatal care, and patient satisfaction. The only difference was in the number of visits.

British women at low risk were included in the study that was conducted between June 1993 and July 1994 (n=2794). Women's views and psychosocial effectiveness were assessed by a maternal antenatal questionnaire at 34 weeks of pregnancy and by a maternal postnatal questionnaire six weeks after birth. These questions included postnatal depression scales and prenatal worry scales to test the psychosocial function and attitude of the patient to the pregnancy. These did not reflect the attitude of the patient to the antenatal care. For the purpose of the study, they regarded a woman in the "new style" group as dissatisfied if she would have preferred more visits, and a woman in the traditional group was considered dissatisfied if she would have preferred fewer visits. Dissatisfaction in this study therefore indicates a preference in the direction of the alternative type of care.

Women were more likely to be dissatisfied with the reduced number of visits (seven visits) in the "new style" care than with the thirteen visits in the "traditional type"

care. This study is an example of how satisfaction can be measured indirectly and is useful if you want to measure a specific change or dimension in satisfaction.

A second study followed from this trial (Clements, 1996). Secondary analyses of data were done to investigate which demographic, obstetric, maternity care and other attitudinal and psychosocial variables predict satisfaction with "traditional" and "new type" care. They concluded that groups not likely to be satisfied with traditional or reduced antenatal visit schedules could not be identified easily. Social support for depressed women needs to be safeguarded if reduced schedules are to be introduced. Improving the psycho-social quality of antenatal care may be a good strategy for making reduced visit schedules more acceptable to pregnant women.

2.2.4.2 Interview studies

Hyde *et al.* (1986) did an interview study to assess pregnant women's attitudes to ultrasound scanning in antenatal care. Four hundred and four pregnant women in Manchester, United Kingdom were interviewed using a structured interview in 1984 to compare attitudes and satisfaction with a routine versus a selective approach for ultrasound scanning during antenatal care. These interviews took place over an eight-month period in 1984 and were done by the author. Although enthusiastic about the ultrasound scanning procedure, an important source of dissatisfaction was failure of the operator to reveal and/or explain the fetal image.

Kim's study (1997) involved the observation of 418 consultations of patients aged 12-24 years in 38 health facilities throughout Zimbabwe during 1996 and the author

interviewed both the patients and the providers. This study suggests that young people may be reluctant to seek advice at health facilities because of the attitudes of the providers towards them.

The effect of a new antenatal care programme on the attitudes of pregnant women and midwives were studied in Zimbabwe using interviews (Murira *et al*, 1997). The main outcome measures were satisfaction of pregnant women and staff with the antenatal care, the reasons for lack of satisfaction and the amount of time spent waiting for consultations.

There was no significant impact on the degree of satisfaction with the new antenatal care program among the women. The major problem limiting access to antenatal care was lack of money to pay booking fees. Other problems mentioned by the women were ignorance regarding the best time to book, lack of privacy and insufficient staff at the clinics. They concluded that solutions to some of the problems required infra-structural changes at a policy-making level.

A qualitative, descriptive study was conducted using a cluster sampling method for 30 rural health centres selected as primary sampling units (Sikosana, 1994). The aim of the study was to evaluate the quality of antenatal care provided for rural health centres in Matabeleland North Province in Zimbabwe during 1993. The research methodology consisted of an assessment of structure and process evaluation. Antenatal care patients attending rural health centres were interviewed, records audited and process observations of health centre staff performing antenatal duties were undertaken.

The study indicated that there was overall consumer satisfaction with the antenatal care services in the province. Cost was not a barrier to access. The performance by health providers was found to be unsatisfactory.

These studies emphasise the work and time required conducting interviews and performing qualitative research. However, when improved antenatal care is desired, this type of research is extremely important.

There are many factors that can influence patient satisfaction with medical care. The patient provider relationship, the reluctance of the respondent to reveal their opinions, and the socio-demographic variables that have been shown in other studies to influence patient satisfaction, will be discussed in this last section of the chapter.

2.3 Patient-provider relationship and socio-demographic variables influencing patient satisfaction

2.3.1 Patient-provider relationship

The performance of the providers is one of the most important factors that influence patient satisfaction. In theory, patient satisfaction is a personal evaluation by the patient of the health care services and the performance of the providers (Ware *et al*, 1983b: 247). There are two important elements in the performance of the providers: one technical and the other interpersonal (Donabedian, 1988). Technical performance

depends on the knowledge and judgement used in arriving at the appropriate strategies of care and on skill in implementing those strategies (Eraker and Politser, 1982: 262).

The management of the interpersonal relationship is the second component in the provider's performance. Through this exchange, the patient communicates information necessary for arriving at a diagnosis, as well as preferences necessary for selecting the most appropriate methods and means of care. The provider gives information about the nature and the management of the illness to the patient and motivates the patient to active collaboration in the care.

The conduct of the interpersonal process must also meet the individual and social expectations and standards of the patients, whether these aid or hamper technical performance. Privacy, confidentiality, informed choice, concern, empathy, honesty, tact, sensitivity - all these and more are virtues that the interpersonal relationship is expected to have (Donabedian, 1988: 1744). Information about this interpersonal process between patients and providers is not easily available. Criteria and standards that allow measurement of these attributes are not well developed because there are so many variations in the preferences and expectations of individual patients.

Patient satisfaction may be considered to be one of the desired outcomes of care, even an element in health status itself. An expression of satisfaction or dissatisfaction is also the patient's judgement on the quality of care in all its aspects, and particularly the interpersonal process. By questioning patients, one can obtain information about overall satisfaction and also about satisfaction with specific attributes of the

interpersonal relationship, specific components of technical care, and the outcomes of care.

In doing so, it should be remembered that, unless special precautions are taken, patients might be reluctant to reveal their opinions for fear of alienating their medical attendants. Therefore, to add to the evidence at hand, information can also be sought about behaviours that indirectly suggest dissatisfaction. These include, in addition to complaints registered, early termination of care, other forms of non-compliance, ending of membership in a health care plan, and seeking care outside the plan.

2.3.2 Personal and general reference of medical care

Another factor that must be taken into account is that patients consistently rate their own health care as more satisfactory than the health care received by others. Specifically, asking patients about doctors or health care in general elicits a less positive response than asking about the patient's own doctor or health care (Senf *et al*, 1991: 299). This was also confirmed in the development of the patient satisfaction questionnaires at Southern Illinois University (Ware *et al*, 1983). The mean scores for items evaluating personal care experiences were consistently significantly more favourable than for items that described the experiences of people in general. Research also suggests that personal reference items are influenced more by an individual's tendency to respond in a socially appropriate way, and therefore may be less reflective of actual satisfaction (Hayes and Ware, 1986: 523).

It became clear that the reference of items to general or personal medical care had an additional effect on the level of satisfaction reported. To examine this, Senf *et al*.

(1991) measured three other dimensions of patient satisfaction. These included: satisfaction with medical care in general (general reference), satisfaction with the patient's own individual health care (personal reference, all but one item), and satisfaction with a number of different elements of the patient's most recent encounter with a health care provider. Items included in the first two scales contained items used in previously published scales, such as physician competence, doctor-patient communication, accessibility and convenience of care, staff attitudes towards patients, and availability of physicians and specialist care. These measures were used to predict an outcome measure to see who changed to an alternative health care programme. In addition, items were constructed based on known differences between the health care plans. Some items were constructed as a positive or negative statement. Each satisfaction item was measured on a five-point Likert scale with 1 measuring "strongly agree" and 5 measuring "strongly disagree."

The third scale was also measured as a Likert-scale format with 1= "completely satisfied" and 5= "not at all satisfied". This scale measured the most recent visit to a doctor. The three scales are described in Appendix III.

The response rate to the first 8540 mailed questionnaires was 59.3%. A response rate of 78.9% followed the second post-enrolment mailing of 4719 questionnaires.

The data was analysed in two stages. In the first phase the scale was factor analysed, checked for reliability and some factors were merged. Analyses were carried out with the resulting factors and other demographic and outcome variables in the second phase.

Consistent with previous research, this study found higher levels of dissatisfaction with physicians in general than with the respondents' personal care. In addition, respondents were more satisfied with their care at their last visit to a doctor than with either doctors in general or their care in general, whether or not the last visit was to the respondent's personal physician.

2.3.3 Socio-demographic and other variables influencing patient satisfaction

A study that specifically investigated patient satisfaction with medical care in a low-income population was done in North Carolina in 1969 (Hulka, Zysanski, Cassel and Thomson, 1971). The measurement instrument was designed for application to general population samples as well as patient groups. It measured three elements of medical care, namely professional competence, personal qualities of the physician and cost/ convenience. The study was done in this low-income population because particular distress has been voiced over the limited care available to the less affluent of society.

The purpose of this study was to identify characteristics of people that were associated with greater or lesser degrees of satisfaction. The following variables were found to have a significant influence on the satisfaction of the patients with medical care:

- i. Family size: With increasing family size there is a decreasing satisfaction scale on all three factors.

- ii. Educational level: With increasing educational level there is an increased level of patient satisfaction.
- iii. Occupation: Increased level of occupation lead to increased levels of patient satisfaction.
- iv. Regular medical service used outside pregnancy: a larger proportion of people who stated that they had a regular service of care, expressed higher satisfaction than those without regular service of care.
- v. Medical insurance coverage: a larger proportion of people, who had medical insurance coverage, expressed higher satisfaction with care.
- vi. Visit to a doctor within previous four weeks: this was associated with higher patient satisfaction.

No difference in satisfaction with medical care could be demonstrated in relation to age, race, marital status or duration of residence in the community.

As part of a review of maternity services a study assessed satisfaction with antenatal care amongst 1193 women who gave birth in Victoria, Australia, during two weeks in 1989 (Brown and Lumley, 1998). The survey questionnaire was mailed to women eight to nine months after birth. Women who had a still birth or whose baby died between birth and the survey, were excluded from the study. The response rate was 71.5%. Women attending public hospital clinics were the least satisfied with their antenatal care. Women who had limited choice of a caregiver, that is women who could not afford the booking fees, were more dissatisfied with the care they received.

In a more recent study in Victoria, Australia, a state-wide postal survey of women who gave birth during a two-week period in 1993 was carried out six to seven months after birth (Laslett, Brown and Lumley, 1997). This study assessed women's views of care in pregnancy. Sixty-two and a half percent of 1336 women responded. In the multivariate analyses using logistic regression, model of care (public health clinics), mother's country of birth (not Australian) and high medical risk were significant factors that reduced patient satisfaction with antenatal care. In the group who only used the public hospital clinics, women were significantly less likely to be satisfied with waiting times, rushed staff, lack of continuity of care giver and shared care (midwife and doctor).

Most patients have explicit desires or requests when they visit their physician. The frequency with which physicians meet their patient's desires for health care and that frequency's association with patient satisfaction were examined in Portland (Joos, Hickam and Borders, 1993). This study was conducted in the general medicine outpatient clinic. A self-completed questionnaire was used during a three-month period in 1992 to elicit patient's desires for service before the encounter with the care provider. Following the visit, patients indicated whether this service was met. They also rated their satisfaction with the personal manner, communication skills and technical competence of the physician. Patients with the most unmet desires for services, especially services related to information, were significantly less satisfied with their physicians than those with fewer unmet desires.

In an American study done at the Vanderbilt University Medical Centre during 1997, mothers were interviewed about five years after confinement (Hickson, Clayton,

Miller, Pichert and Entman, 1998). Comparisons were made between responses of mothers whose babies were admitted to the normal nursery, and those mothers whose babies were sent to a neonatal intensive care unit. Even when children did well, admission of new-borns to an intensive care unit is associated with greater maternal dissatisfaction with medical care.

2.4 Summary of main findings

Several studies measuring patient satisfaction with medical and antenatal care were discussed in this chapter. The main findings are summarised as research issues or methodological issues.

2.4.1 Research issues

- Patient satisfaction with antenatal care is considered important as a measurement of quality of care and a measure of the patients that provides the rating.
- Patient satisfaction predicts how a patient will behave in the future regarding her own health care.
- Most patients have explicit desires or requests when they visit their physician or clinic that influence their perception of medical care.
- Measurement of patient satisfaction is essential in the evaluation of any change in routine care.

- Satisfaction ratings do not always correspond with the objective reality or with the perceptions of providers of administrated care.

- Antenatal care can be regarded as an intermediate length of continuity of care and pregnant women require different needs during antenatal care than the needs of patients measured in general population studies.

- The performance of the providers is one of the most important factors that influence patient satisfaction. Where technical performance depends on the knowledge and judgement used in arriving at the appropriate strategies of care and on skill in implementing those strategies, the management of the interpersonal relationship is the second component of the provider's performance.

- Some characteristics of patients influence patient satisfaction. The following has been proved in some studies to increase satisfaction scale ratings:
 - Small family size
 - Increased educational level
 - Increased level of occupation
 - Regular medical service used outside pregnancy
 - Having medical care insurance coverage
 - Visits to a doctor within the previous four weeks before completing the questionnaire.

- No difference in satisfaction with medical care could be demonstrated in relation to age, race, marital status or duration of residence in the community.

2.4.2 Methodological issues

- Patient satisfaction is a multi-dimensional concept with dimensions corresponding to the major characteristics of providers and services.
- Patient satisfaction depends on cultural norms and all instruments cannot be generalised to all countries. No universal method, whether a complex instrument meeting patient satisfaction with antenatal care or a single question, would be appropriate in all settings.
- Patient satisfaction ratings are always positively skewed. More comprehensive measures are necessary to control for this.
- Several methodologies to measure patient satisfaction have been used in studies.
- The advantages of an interview survey over a self-administered questionnaire are fewer incomplete questionnaires and fewer misunderstood questions, generally higher return rates, and a greater flexibility in terms of sampling and special observations.
- Survey research in general has advantages in terms of economy and the amount of data that can be collected. The standardisation of the data collected represents another special strength of survey research. The research may be somewhat artificial or potentially superficial and it is sometimes difficult to gain a full sense of social procedures in their natural settings.

- A key assumption of many studies was that satisfaction is a continuum. Five choices yielded more information and more reliable responses than did two or three. Likert-type scaling seems to facilitate the task of completing a questionnaire.
- It is important to standardise the order of a questionnaire. Scores tend to be lower when longer questionnaires are used or when the measuring instrument is placed at the end of long questionnaires.
- Acquiescent response set, a tendency to agree with statements of opinion regardless of the content, can produce differences that range between ten and fifteen per cent and is more likely to occur amongst respondents with a low level of education.
- Socially desirable response set is a tendency to give answers that make individuals appear well adjusted, unprejudiced, rational, open-minded and democratic.
- Personal reference items are influenced more by an individual tendency to respond in a socially appropriate way, and therefore may be less reflective of actual satisfaction.

There are no scales to measure patient satisfaction with antenatal care in South Africa. The search for an optimal South African instrument to measure patient satisfaction

with antenatal care- simple, cheap and acceptable to both users respondents- is now more important than ever because of the changing antenatal care system.

In the next chapter, the research design and methodology used to develop a scale to measure patient satisfaction with antenatal care in the Tygerberg Hospital antenatal clinics is discussed.

Chapter 3

Research design and methodology

In this chapter I discuss the research design and methodology of the study done at the Tygerberg Hospital antenatal clinics in 1998. The population and sample are defined and the methods of data collection are discussed. In the second part of the chapter the development and validation of the questionnaire are discussed. Reliability and validity analyses of survey instruments and the factors that influence them are discussed. I shall further highlight the problem of cross-cultural issues in research design and how it was controlled in this study. The main function of this design was to anticipate what the appropriate research decisions were so as to maximise the validity of the eventual results (Mouton, 1996).

A survey by means of a interviewer administered questionnaire allowing for open ended comments was used for patients attending the antenatal clinic at Tygerberg Hospital (TBH). Tygerberg Hospital is a tertiary referral hospital and therefore high medical and obstetrical risk patients are usually seen in the clinics. Two midwifery obstetric units (primary health care) also refer patients directly to TBH. It serves the poorer urban areas of Cape Town and involves mainly underprivileged coloured patients. Tygerberg Hospital is a government institution and since 1994 patients attending antenatal clinics need not pay for antenatal visits. A small percentage of patients have medical aid and attend the clinics because they are at such a high risk in their pregnancy.

3.1 Population and sample

The choice between types of sampling design depends on the nature of the research problem, the availability of good sampling frames, money, time and desired level of accuracy in the sample collected (Babbie, 1996: 203-206). The target population in this programme is pregnant patients attending antenatal clinics at TBH who had at least two antenatal visits.

The booking visit is the most important visit because patients are then classified according to the medical risk after a thorough history of medical and previous pregnancies and a full medical examination. Special investigations are also done during this visit. This encounter with medical staff (midwives and physicians) can take up to two hours. At the second visit a senior physician check the special investigations and the patient is finally classified in a risk group. The most important contact with the clinic and hospital staff is also during these two clinics and patients should have a good impression of the quality of care. A patient is considered booked if she attended at least two antenatal clinics.

The target population was defined as all pregnant patients who are booked and attend clinic antenatally. A sample frame is not available. This is because TBH is a referral hospital for a wider area and all patients do not book primarily at the clinics and the hospital.

A cross-sectional sample of 200 successive patients who attended antenatal clinics at TBH was included in this study during May 1998.

3.2 Data collection

Ethical approval to undertake the survey was granted by the local Ethical Committee (Research Subcommittee C) of the University of Stellenbosch. No difficulties or problems were encountered with gaining access to the setting, as the interviewer (PS) is a member of the department and known to the doctors and other staff. During the data collection the interviewer wore informal casual clothes to prevent him being recognised as a doctor. This helped to minimise and control research effects and reliability.

The survey was done in May 1998. Approval was obtained from the ethical committee, the head of the clinical department and the nursing director. As a matter of courtesy, permission was also obtained informally each day from the nursing staff in the antenatal clinic. The doctors working in the antenatal clinic did not know of the existence of the survey as the interviews were done in a separate room.

The clinic has two waiting rooms. Nursing staff tests the urine of the patient after she receives her folder in the first waiting room. The patient then proceeds to a second waiting room to await her appointment by the doctor or midwife. Due to the longer wait in the second waiting room, the patients were approached here for completion of the questionnaire. This could then be completed in ample time without interruption.

The patients were assured of anonymity and confidentiality. This was also explained on the detailed consent form that they had to sign (Appendix IV). In this consent form

they were assured of

- i) anonymity,
- ii) confidentiality and
- iii) no prejudice toward them if they decline to participate.

After consent was obtained the interviews took place in a room with only the researcher and the respondent present where they could not be interrupted. Only two people refused to complete the questionnaire. One did not want to disclose her personal details and the other patient felt ill. She was subsequently admitted to the hospital with complications of the pregnancy.

Most of the interviewees seemed to enjoy the interview and a few expressed their approval at the opportunity to express their thoughts on the quality of care in the clinic. This resulted in a very comprehensive data collection with very little missing data. The researcher (PS) was recognised as a doctor on a few occasions that could have influenced the responses.

During the gathering of the data the personal details on the identification page, the socio-demographic details in section one as well as the details of the previous pregnancies and complications were checked against the patient's hospital file and the antenatal card to ensure triangulation (Mouton, 1996: 156). Triangulation is the combined use of two or more methods in the study of the same phenomenon to ensure

reliability and validity of the data gathered. Most of the questions (forced-choice) in the questionnaire were precoded.

Data was entered using *Microsoft Access* © 1997. This programme allows several data checking points that were incorporated to minimise the problem of data entering errors.

The following other methods were used to check for data entering and recoding errors (De Vaus, 1996: 246):

- i. Frequencies on all variables were done to check for valid range checks.
- ii. Contingency questions (questions four, eleven, fourteen, nineteen and twenty-two) were used for filter checks in the questionnaire.
- iii. Logical checks were done on certain responses. (Gravidity and parity; problems with previous pregnancy, smoking, percentage not more than 100% for total satisfaction score or satisfaction score in dimensions).

3.3 Development and discussion of the questionnaire

The survey was done using a structured questionnaire that allowed for open-ended comments. While closed format questionnaires are useful for measuring and comparing satisfaction levels, open ended comments are useful whenever the survey is also expected to lead to quality improvement initiatives.

The development of the questionnaire was guided by three factors:

- i. The aim of the study;

- ii. previously published instruments; and
- iii. informal discussions with women who had used the maternity service in the study centre, and organised meetings with midwives and obstetricians.

The questionnaire consisted of an identification page and four other sections. The first three sections included questions about:

- i. Socio-demographic variables;
- ii. Previous pregnancies and complications in those pregnancies; and
- iii. Attitudes towards this pregnancy. The last section is the patient satisfaction scale in the Likert-type format. A copy of the Afrikaans questionnaire is attached (Appendix V). The questionnaire was developed in Afrikaans as this is the dominant language of most patients. The language issue will be discussed later in more detail.

The identification page consisted of an identification block where a number was filled in. Other variables on this page are:

- i. Age at confinement (to standardise).
- ii. Gravidity (how many pregnancies previously).
- iii. Parity (how many viable children).
- iv. Race (this was obtained from the patient's hospital file).
- v. Medical risk for this pregnancy subdivided into four subsections (high-risk level one and two, special care and low risk - this is done according to a standardised protocol in the clinical department at registrar or consultant level).
- vi. Gestational age at booking (the pregnancy duration in weeks with the first booking visit).

- vii. House tenure subdivided into five sections (owner, rented house, rented room, living with parents and other).

During data gathering these variables were cross-checked with their registration details in their files and with their antenatal cards (Appendix VI).

3.3.1 Section one of the questionnaire:

This section deals with socio-demographic variables. Variables that have been shown to influence satisfaction rating scores as well as other variables that might influence satisfaction rating in the TBH setting were included. Some of these questions, such as employment and time spent listening to the radio or watching television per day, were included to see whether there is a relation between these variables and patient satisfaction. There are ten questions in this section.

Questions	Socio-demographic variables
Q1	Marital status
Q2	Number of persons in household (everybody in the house).
Q3	Educational level - 4 levels (not in school, primary school, secondary school or after school education).
Q4	Employed now, with an open-ended question to specify the job.
Q5	Employed previously, with an open-ended question to specify the job.
Q6	Total income of household per month - five categories according to the 1995 October household survey in the Western Cape (OHS; 1997).
Q7	Usual medical provider if not pregnant - five choices with an open ended choice (yes-no format).
Q8	Medical aid membership or not.
Q9	Hours of television watching per day.
Q10	Hours of radio listening per day.

The last two questions were included on the assumption that people who watch television or listen to the radio, are more informed on ordinary matters.

3.3.2 Section two of the questionnaire:

This section deals with previous pregnancies and complications in those pregnancies.

It consists of five questions.

Questions	Discussion
<p>Q11: Is this your first pregnancy? Yes/No</p>	<p>This is a contingency question to find out if the patient was pregnant before or not. If not, this section is skipped.</p>
<p>Q12: Did you experience any of the following problems in any of your previous pregnancies:</p> <ul style="list-style-type: none"> - Preterm birth - Baby died before birth - Abnormal baby - High blood pressure - Bleeding - Other/combinations 	<p>This question explores previous complications in pregnancy. Five choices as well as an open-ended choice are given. The five choices (preterm labour, intra-uterine death, abnormal baby, high blood pressure, and antepartum haemorrhage) are the most frequent complications when referring patients to the department.</p>
<p>Q13: Which clinic did you attend?</p> <ul style="list-style-type: none"> - Elsie'srivier - Bishop Lavis - Tygerberg high risk - Tygerberg special care - Other 	<p>Which clinic was attended in the previous pregnancy - a choice of four and an open-ended choice. The four are the two primary midwife obstetric units (Elsie'srivier and Bishop Lavis) and the two important clinics at Tygerberg Hospital.</p>
<p>Q14: Did you need to go to a hospital in your previous pregnancy? Yes/no</p>	<p>A contingency question to find out whether the patient was referred to a hospital in the pregnancy. If not, the remainder of the section was skipped.</p>
<p>Q15: Why were you referred?</p> <ul style="list-style-type: none"> - To special care - To fetal evaluation clinic - For ultrasound - In labour - Unsure - Other 	<p>Why the patient was referred; with an open-ended choice. The choices given are the most common reasons for referral of patients during pregnancy.</p>

3.3.3 Section three of the questionnaire:

This section explores the attitudes of the patients towards the present pregnancy.

There are ten questions in this section.

Questions	Discussion
Q16: How did you first realise you were pregnant? - Skipped menstruation - Went to doctor - Baby moved - Breast swell - Other	These choices reflect the most frequent signs of the realisation of pregnancy. Skipped menstruation or confirmation by a doctor is usually the first time a patient becomes aware of her pregnancy. Movement of the baby and swelling of the breasts is late signs of a pregnancy.
Q17: What do you like most about being pregnant Q18: What do you like least about being pregnant? Q19: Do you smoke? Yes/no How much? Do you think smoking affects the baby? Yes/no/unsure Q20: What effect do you think smoking has on the unborn baby? Q21: Do you use alcohol in this pregnancy? Q22: Is this a planned pregnancy? Yes/no/unsure Q23: If no, is the pregnancy welcome? Q24: How did you feel, the first time that you realised that you were pregnant? - Glad - Afraid - Angry - Unsure - Give reasons Q25: How do you feel now?	The remainder of the questions (closed format and open-ended) explore the attitude of the patients towards the current pregnancy.

3.3.4 Satisfaction scale

3.3.4.1 Development

The last section of the questionnaire is of the Likert-type format. Patient satisfaction was assessed using a 16-item questionnaire used by Perneger that was derived from previously published instruments (Ware, *et al* 1983b; Hulka *et al*, 1971; Linn and Greenfield, 1982). Personal contact was made with Dr Perneger to get written permission to use this instrument.

The reasons why Perneger's instrument was decided on are as follows:

- i. This is a well-tested questionnaire with well-tested questions.
- ii. The reliability and validity of the instrument were established in previous studies.
- iii. Seven dimensions of patient satisfaction were measured with multiple-item indicators that increased the reliability.
- iv. Most of the items included in the instrument were tested over time (test-retest).
- v. More importantly, there were no measurements on financial issues (patients do not pay at the TBH clinic) or measurement on continuity of provider (patients at the TBH clinic do not see the same doctor each time when they visit the antenatal clinic).
- vi. It included almost all of the other dimensions (except the two in v) which were encountered in the literature review.
- vii. Pretesting the questionnaire on patients was favourable (see later).
- viii. Discussions with local experts in research meetings were favourable.
- ix. Comparisons with similar surveys can be made using the existing instrument.

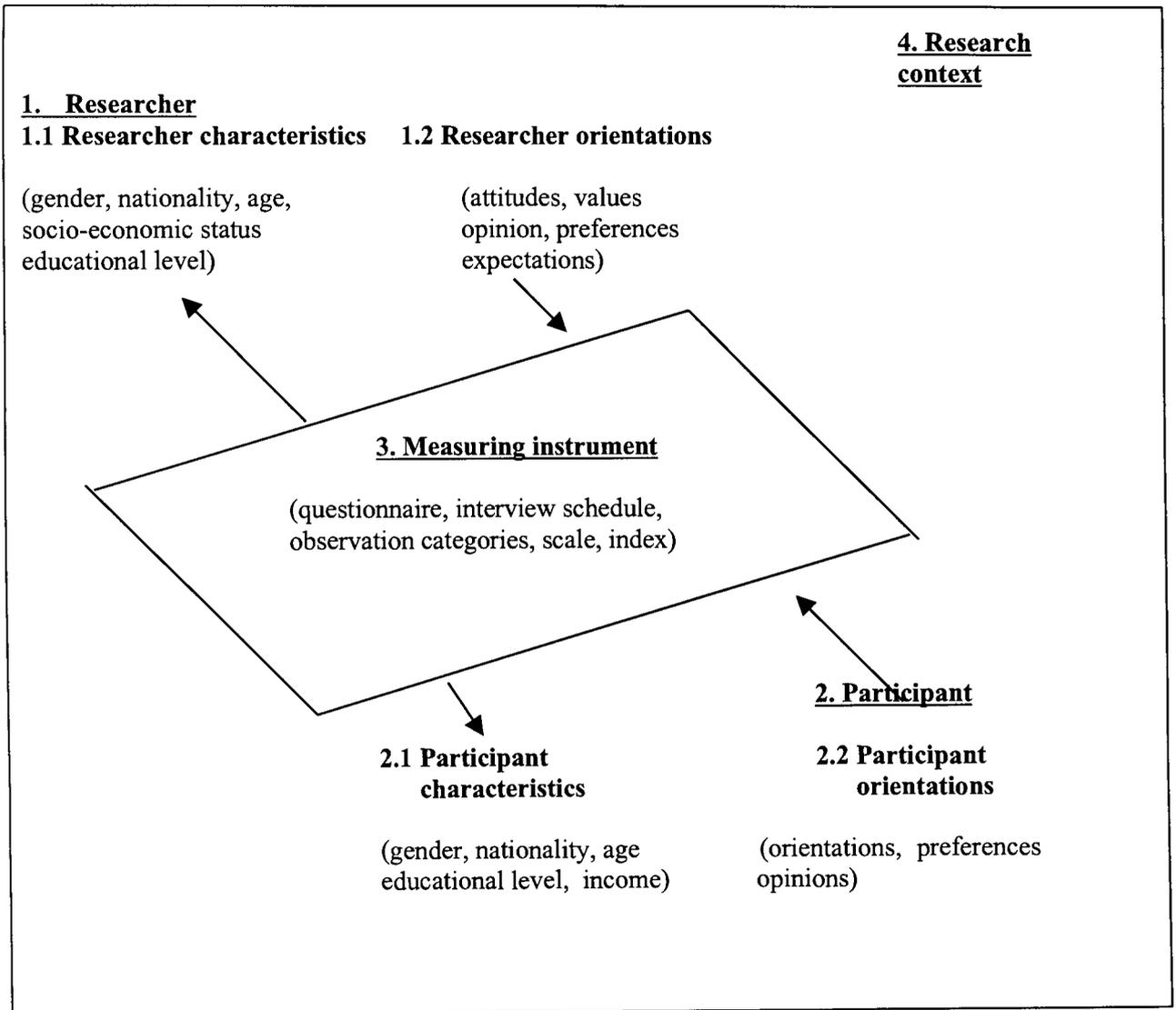
One should always bear in mind that patient satisfaction ratings depend on cultural norms and that this instrument was tested on higher socio-economic Swiss patients. Norval (1984) emphasises that it is important not to ignore cross-cultural issues in research design of attitude measurement. Major problems can be encountered if there is inadequate conceptualisation and operationalisation on central constructs in the study. Another problem is the use of inappropriate measuring instruments. The researcher should further have the responsibility to do objective, valid and reliable research and should ensure that methodological criteria are extremely important in cross-cultural studies. One should not merely accept that the knowledge that the researcher accepts as part of his culture is applicable in another cultural setting.

In this study, an ordinal Likert scale was used to measure patient satisfaction with antenatal care. Questions with forced-choice answers as well as open-ended questions were included in the questionnaire. It was important to take into account that a subtle change in the wording of items, could result in a change of up to 20% in the response of the results (Norval, 1984: 84). It is also important to take the interview into account because there are factors that can influence this process. The interview is a form of a social interaction and has to take place within social, cultural and ethnical norms. Factors that could influence the reliability of gathering data are summarised in a schematic representation by Mouton (1996: 145) (Figure 3.1).

Figure 3.1

Factors that affect the reliability of data during research, according to Mouton

(1996: 145)



Each of these four levels can be a possible source of error during the interview. Racial as well as gender effects could have led to a significant degree of bias in this interview. On a few occasions the interviewer was recognised as a medical doctor. However, this bias is limited to items in which the race of the respondents is explicitly mentioned in the questionnaire (which was not the case in this study). To control for

this, one can use a self-administered questionnaire. However, interviews are still one of the more important research methods in South Africa as there are still people in some settings who do not have adequate education to complete postal or self-administered questionnaires.

In the development of the patient satisfaction questionnaire, two approaches could have been used to develop the scales. Firstly, one can argue that you cannot use any scale already developed previously and therefore have to develop a scale for a totally South-African context. Secondly, you can argue that a scale can be used cross-culturally without any change. Researchers that wish to measure an attribute should then either develop their own scale or use another well-established scale. The advantage of using an existing scale is that you can compare results. Nevertheless, problems can arise when you use a scale that has been developed for other populations. Attitude measurement is subject to cultural variation and the validity of a scale in a specific situation that does not implicate universal applicability. This does not imply that pre-developed scales are worthless, but if it is used in a different cultural context, the reliability and validity should be established and reported each time it is used (Norval, 1984: 90).

One should not accept the reliability of an overseas-developed scale without questioning the reliability. According to Couper (quoted in Norval, 1984: 90), reliability in a cross-cultural context should be tested through three reliability coefficients. These are:

- i. test-retest reliability
- ii. equivalence coefficient and

iii. the internal coefficient of Cronbach.

From these three coefficients a *transferable coefficient* can be calculated that is especially important because it deals with the cultural transfers of measuring instruments. Construct validity is especially important in cross-cultural research. Couper showed the importance of factor analysis as a measure of construct validity in this domain.

In the developing of the questionnaire, three important points must be acknowledged.

- i. The format of the question;
- ii. Responsitivity to items;
- iii. Culture-sensitive issues.

It should be noted that in closed questions there can be a cultural implication. One has to be aware that there must not be unnecessary class differences. Open questions can be very useful in this research. It is very important that the question should be clear and unambiguous. The problem of responsitivity can be aggravated when an item is translated from a different language. It is also caused by changes in the wording or sequence. Cultural-sensitive issues are where certain "taboos" exist in a culture that will make research through a survey difficult in that culture group.

Another important issue arises with the translation of a questionnaire. The main problem is that of equivalence and reliability. This issue is especially important when the same questionnaire is administered to people with different backgrounds and languages. Techniques such as simple and complex back translation and the use of

bilingual people or a committee to assist with the translation can be used. It is also important to pre-test a translated questionnaire in a field test.

Some practical suggestions to help in the translation of questionnaires are (Brislin *et al*, 1973):

- i. Use short, simple sentences of less than sixteen words;
- ii. Employ active, rather than passive words;
- iii. Repeat nouns, rather than using pronouns;
- iv. Metaphors and colloquialisms should be avoided;
- v. Avoid the subjunctive (verb forms with 'could', 'would' and 'should');
- vi. Avoid adverbs and prepositions indicating 'where' or 'when' (e.g. frequently, beyond, upper);
- vii. Use possessive forms with caution;
- viii. Use specific rather than general terms;
- ix. Avoid words indicating vagueness regarding some thing or event;
- x. Avoid sentences with two different verbs if the verbs suggest two different actions;

The wording of the questions in the survey was simplified and made applicable to the local clinic without changing the content. The questionnaire was developed in Afrikaans because most of the patients in the TBH clinics can only speak Afrikaans. The instrument also contained a balance of favourably and unfavourably worded questions to control for bias due to the acquiescent response set. This is a tendency to agree with statements of opinion regardless of the content (De Vaus, 1996: 252, Mouton, 1996: 154).

The translated questionnaire was discussed at a research meeting of the Unit of Perinatal Mortality of the Medical Research Council. This preliminary version of the questionnaire was administered by face-to-face interviews to a sample of 50 patients to clarify ambiguities in the wording of items, to confirm the appropriateness of the response scales and to determine acceptability and completion time. The sample also included four pregnant maternity sisters attending the antenatal clinic. These "insiders" made useful recommendations.

The respondents also received part four of the questionnaire to complete and return in a stamped, addressed envelope within six weeks. Only four completed questionnaires were returned. No reminders were sent to the non-responders.

Minor changes were made after this testing. An example was the translation of item 5 in the Likert-scale, where "care was pathetic" was translated to "care was hopeless". This was changed to "care was very poor" during the pilot testing of the questionnaire. The final version of the questionnaire was again deliberated with the members of the Unit for Perinatal Mortality of the Medical Research Council.

3.3.4.2 Outcome (dependent) variables

Patient satisfaction was assessed in this questionnaire using a sixteen-item scale developed from Perneger. Table 3.1 illustrates the seven aspects of patient satisfaction with the items defining each aspect.

Table 3.1**Aspects of satisfaction with the defining items (adapted from Perneger *et al* 1996)**

Aspect	Abbreviated item (position in instrument)
General satisfaction	I am very satisfied with care (1)
	Care was pathetic (5)
Access to care	It was difficult to get an appointment (2)
	It was easy to get to the site of the clinic (7)
	I had to wait a long time (14)
Reception staff	Reception staff is friendly and courteous (3)
Physician/ midwife relation	Physician/midwife treated me with respect (4)
	I do not trust the physician/midwife (8)
	Physician/midwife did their best to reassure me (11)
Physician/midwife- time spent	Physician/midwife spent a lot of time with me (6)
	Physician/midwife did not listen to me (9)
Physician/midwife- explanations	Physician/midwife explained what to expect (13)
	Physician/midwife did not explain why they ordered tests (10)
Physician/midwife	Physician/midwife was very thorough (15)
	Physician/midwife do unnecessary examinations/ tests (16)
	Physician/midwife is very competent (12)

Value laden (positive or negative) statements were classified as referring to care in general, to the physician, to access of care and to the organisation. Each statement

was followed by five response options ranging from "strongly agree" to "strongly disagree". Because all responses to the positive and negative statements were precoded so that "strongly agree" equalled one and "strongly disagree" equalled 5, responses to items were recoded as shown in Table 3.2.

Table 3.2
ITEM SCORING RULES FOR THE TYGERBERG HOSPITAL
INSTRUMENT

Scoring	Item numbers
1= Strongly disagree	a;c;d;f;
2= Disagree	g;k;l;m;o
3= Not sure	
4= Agree	
5= Strongly agree	
5= Strongly disagree	b;e;h;I;
4= Disagree	j;n;p
3= Not sure	
2= Agree	
1= Strongly agree	

The modified satisfaction score for the twelve items were computed (after recoding) as well as a score for each aspect measuring patient satisfaction. This is expressed as a

percentage with scores ranging from 0 (lowest level of satisfaction) to 100 (highest level of satisfaction). The assumption was made that satisfaction with antenatal care is a continuum.

3.3.4.3 Psychometric analysis

Psychometric analysis enables one to quantify the precision of measurement of qualitative concepts. The assessment consists primarily of determining the reliability and validity of the survey instrument.

3.3.4.3.1 Reliability

Reliability is the requirement that the application of a valid instrument to different groups under different sets of circumstances should lead to the same observations (Mouton, 1996: 144). Reliability analysis includes an evaluation of test-retest-, alternate-form-, internal consistency and inter- and intra-observer reliability (Litwin, 1995).

- i. *Test-retest reliability* is measured by having the same set of respondents complete a survey at two different points in time to see how reproducible a set of results is. Correlation coefficients (r-values) are then calculated to compare two sets of data. An r-value of 0.7 or more is considered good.

Another form of test-retest reliability is if an individual makes two separate measurements of the same data set by the same observer and is commonly known as *intra-observer reliability*.

A problem with the above types of reliability measurements can be that the time points are too far apart, which can produce diminished reliability. This may actually reflect a change over time. The individual can also become familiar with the items and, from memory, repeat the answer from the last time.

- ii. *Alternate-form reliability* uses different worded items or response sets to obtain the same information about a specific topic. Items or scales are administered to the same population at different time points and correlation coefficients are calculated. A *split halves method* can also be used when the alternate forms are randomly split so that half of the respondents answer the one form and the other half the alternate form. The respondents should be of the same socio-demographic background to make sure that there are no group differences. It is also important that the sample should be large enough to compare the two groups.
- iii. *Internal consistency* is a commonly used psychometric measure in assessing survey instruments and scales. It is a measure of the internal homogeneity of the items in a scale; that is confirmation that all items in the scale are tapping different aspects of the same attribute rather than different attributes (Lamping, Rowe, Clarke, Black and Lessof, 1998: 769). Although established survey instruments undergo extensive psychometric evaluation, the author's sample population may be quite different than the one you are testing in. It is especially important to conduct reliability testing if multicultural issues or language barriers are relevant considerations (Litwin, 1995: 27).

In the case of continuous measurement scales, *Cronbach's α coefficient* is used and a value between 0.7 and 0.9 is considered as acceptable. Internal consistency is also evaluated by *item to total correlation*; that is, the correlation of an item with the total score of the scale to which it belongs. Item to total correlation should exceed 0.2. The internal consistency was tested in this instrument. There were no missing scores of any of the seven aspects, thus all seven scores were available for 200 respondents. The Cronbach α coefficient was 0.91 for the total item scale. It was sufficient for all aspects except access to care (Table 3.3).

This was also the finding in Perneger's study (Table 3.4). The Cronbach α coefficient in their study was 0.90 for the total item scale.

Table 3.3**Properties of the Tygerberg Hospital instrument, 1998**

Aspect of satisfaction	Mean (SD)	Range	Cronbach α
ASPECT 1			
General satisfaction	88 (13.26)	60	0.63
ASPECT 2			
Access to care	78.80 (15.19)	66.67	0.43
ASPECT 3			
Reception staff	89 (14.28)	60	-
ASPECT 4			
Physician/Midwife			
-relation	87.20 (13.75)	73.33	0.76
ASPECT 5			
Physician/Midwife			
-time spent	85.75 (14.78)	80	0.64
ASPECT 6			
Physician/Midwife			
-explanations	82.35 (18.29)	70	0.65
ASPECT 7			
Physician/Midwife			
-technical	87.76 (12.17)	53.33	0.81
TOTAL			
Total score	85.15 (11.57)	48.75	0.91

Table 3.4

Description of the satisfaction survey instrument, Geneva, Switzerland, 1993 and 1994 (Perneger *et al*, 1996: 464)

Dimension	Mean (SD)	Cronbach α	Abbreviated item
1. General satisfaction	73.4 (24.9)	0.82	I am very satisfied with care. Care was almost perfect.
2. Access to care	68.2 (21.1)	0.44	Getting an appointment was difficult. Site of care easy to get to. I had to wait a long time.
3. Reception staff	80.0 (22.8)	—	Reception staff friendly and courteous.
4. Physician-relation	81.3 (18.7)	0.81	Physician treated me with respect. I fully trust the physician. Physician did his best to reassure me
5. Physician-time spent	76.7 (20.4)	0.65	Physician spent a lot of time with me Physician took time to listen.
6. Physician-explanations	79.1 (20.9)	0.70	Physician explained tests ordered. Physician explained what to expect.
7. Physician-technical	75.0 (19.9)	0.66	Physician was very competent Physician was very thorough Physician avoided unnecessary care

Internal consistency may be low when items in the dimensions do not measure the same concept, which is the problem in the case of access to care (ease of getting an appointment, physical accessibility of the clinic and waiting time in the clinic). It was therefore decided to drop the items relating to access of care from further analyses. The item on reception staff was dropped because there was only one item measuring this aspect of patient satisfaction and therefore its reliability could not be established.

The item to total correlation coefficients compared favourably to those of the instrument used by Perneger *et al.* (1996: 464). The item to total correlations were all more than 0.2, but the three items defining the aspects of access to care were much lower than the others. There was no published item to total correlation available for Perneger's study for comparison. The item to total correlation for the Tygerberg Hospital study is presented in Table 3.5. The entire item to total correlation exceeds 0.2.

Table 3.5**Item to total correlation**

Abbreviated item	Correlation
I am very satisfied with care	0.61
Care was pathetic	0.74
It was difficult to get an appointment	0.56
It was easy to get to the site of the clinic	0.47
I had to wait a long time	0.47
Reception staff is friendly and courteous	0.68
Physician/midwife treated me with respect	0.68
I do not trust the physician/midwife	0.77
Physician/midwife did their best to reassure me	0.75
Physician/midwife spent a lot of time with me	0.67
Physician/midwife did not listen to me	0.75
Physician/midwife explained what to expect	0.70
Physician/midwife did not explain why they ordered tests	0.61
Physician/midwife was very thorough	0.75
Physician/midwife do unnecessary examinations/ tests	0.74
Physician/midwife is very competent	0.78

- iv. A last form of reliability testing, *interobserver reliability* provides a measure of how well two or more evaluators agree in their assessment of a variable. This was not applicable in this study.

3.3.4.3.2 Validity

Validity is how well the scale of a survey measures what it sets out to measure; in this study patient satisfaction with antenatal care. It is an important measure of the accuracy of an instrument (Mouton, 1996; Litwin, 1995). Validity analysis includes an evaluation of face, content, criterion and construct validity.

- i. *Face validity* is not an important measurement of validity and is based on a cursory review of items by untrained judges.
- ii. *Content validity* is a formal subjective measure of how appropriate the items seem to a set of reviewers who have expertise in some aspects of the subject under study.

Content validity was evaluated in this study logically, on the basis of qualitative evidence from consensus expert opinion (gynaecologists and sociologists), interviews with patients, review of the literature and of existing measures. It was applied to the measuring instrument to ensure that patient satisfaction was comprehensively sampled and that items in the questionnaire comprise a representative sample of all possible items for patient satisfaction. The content validity of the questionnaire was evaluated and reviewed during the development and pre-testing of the questionnaire.

- iii. *Criterion validity* is a measure of how well one instrument stacks up against another instrument or predictor that is external to the measuring instrument itself (Litwin, 1995: 37; Mouton, 1996: 128).

Predictive validity is the ability of the instrument to forecast future events, behaviours, attributes or outcomes. It involves correlating the results of the test with another secondary outcome. Concurrent validity requires that the criteria and the other measurement be used simultaneously. The correlation between the two is then statistically calculated. This was not calculated in this study, as there was no existing instrument available that will make such criterion related validation possible.

- iv. *Construct validity* is the most valuable yet most difficult way of assessing a measuring instrument (Litwin, 1995: 43). It is a theoretical measure of how meaningful a survey instrument is and is determined usually after years of experience by numerous investigators. It further assesses the extent to which an instrument measures the attribute that it is intended to measure (De Vaus, 1996: 56). *Convergent* and *discriminant validity* describes the correlation or not correlation between the measure and other measures. Another aspect, group differences, assesses the extent to which the measure is able to detect differences in groups known to differ.

There are three threats to construct validity (Mouton, 1996: 128). They are

- i. Inadequate preoperational explication of constructs;
- ii. Mono-operation bias;
- iii. Mono-method bias.

Defining the key concepts before you embark on a study is of utmost importance. Construct validity will be lower in single item research than in research where each construct consists of multiple items.

Factor analysis is an important tool to establish construct validity of theoretical concepts when multiple indicators are used. Factor analysis involves an analysis of the intercorrelations between indicators that the item loadings generated indicate how strongly each item contributes to a given factor. The underlying correlation and relationships between indicators depends on a theoretical interpretation by the researcher.

In Perneger's study, factor analysis followed by varimax rotation of the principal items, identified two factors that accounted for 53% of the total variance (1996: 464). Access to care was not dropped from his analysis and "reception staff" had about equal loadings in each factor. Items related to general satisfaction and to physical attributes had high loadings on the first factor, while items pertaining to access of care had high loadings on the second factor. He concluded that factor analysis suggested that the access to care and the process of care were distinct dimensions that vary independently, but did not discriminate between various aspects of physician behaviour.

In this study I used three main steps to determine the construct validity of the concept of patient satisfaction.

First, the seven dimensions/aspects suggested by Perneger *et al.* were tested through confirmatory factor analysis. When it was forced to extract seven factors there was no clear factor structure. It is very clear through this factor analysis that the data does not support a seven-factor solution in determining factor analysis.

In the second step, the three items relating to access of care were dropped after the Cronbach α coefficient showed that it was not a reliable aspect of patient satisfaction with antenatal care. The fourth item on "reception staff" was also dropped because it was a single item and therefore did not strengthen construct validity.

In the last step, exploratory factor analysis was done on the remaining items. The correlation matrix is presented in Table 3.6. The factor analysis resulted in a single factor that accounted for 53.6% of the total variance (Table 3.7, Figure 3.2). All the items had to do with the process of antenatal care. There was no discrimination between various aspects of provider behaviour.

Table 3.6

Correlation matrix

	COMPETENT	THOROUGH	PATHETIC	LISTEN	TRUST	EXPLAIN	TIME-SPENT
COMPETENT	1.00000						
THOROUGH	.60874	1.00000					
PATHETIC	.57897	.46210	1.00000				
LISTEN	.53912	.48321	.61482	1.00000			
TRUST	.61671	.52153	.57087	.64687	1.00000		
EXPLAIN	.42138	.51578	.37782	.39219	.36446	1.00000	
TIME-SPENT	.54655	.47483	.40720	.47946	.39336	.41508	1.00000
TESTS (Expl)	.50249	.53812	.49944	.50735	.49087	.48236	.35172
SATISFIED	.50370	.47254	.46837	.35697	.38785	.30402	.49635
RESPECT	.55307	.44621	.48155	.49118	.55135	.37110	.49045
REASSURE	.67577	.51896	.49587	.55706	.51235	.48234	.54205
TESTS	.59652	.58235	.63870	.61970	.57774	.41252	.40782
	TESTS (Expl)	SATISFIED	RESPECT	REASSURE	TESTS		
TESTS (Expl)	1.00000						
SATISFIED	.29137	1.00000					
RESPECT	.38016	.55284	1.00000				
REASSURE	.59337	.43151	.53725	1.00000			
TESTS	.48779	.38472	.42681	.46336	1.00000		

Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .92345

Figure 3.2

The factor Scree plot

Factor Scree Plot

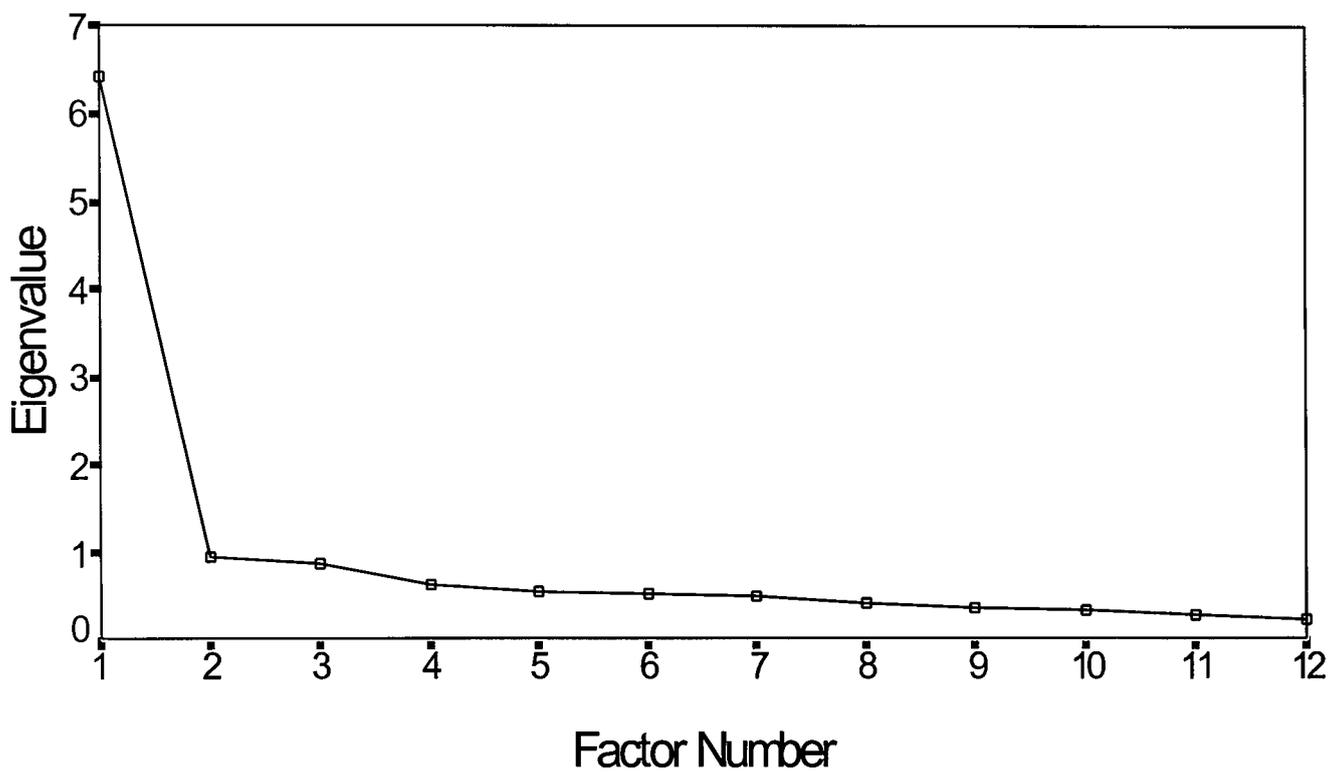


Table 3.7**The Factor matrix and Eigenvalues**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .92345

Bartlett Test of Sphericity = 1283.7845, Significance = .00000

Factor	Eigenvalue	% of variance	Cumulative %
1	6.42777	53.6	53.6

Factor Matrix:

Factor 1

COMPETENT	.82219
THOROUGH	.75616
PATHETIC	.75670
LISTEN	.76897
TRUST	.76374
EXPLANATION	.62065
TIME-SPENT	.67929
TESTS (explain)	.69844
SATISFIED	.63551
RESPECT	.71456
REASSURE	.78015
TESTS	.75843

3.5 Summary

The main function and consideration during this research design was to anticipate the appropriate research decisions to maximise the validity of the results obtained through the survey. The problems in the development and validation of the questionnaire in the specific antenatal setting was discussed, as well as the sampling method and method of data gathering.

Perneger's scale was validated for twelve of the sixteen items in the TBH setting. After the items related to access of care and the reception staff were excluded, the remaining twelve items were valid for the Tygerberg Hospital setting. All the items had to do with the process of antenatal care, but no discrimination between various aspects of provider behaviour could be demonstrated.

In the next chapter I shall discuss the analysis and research findings of the Tygerberg Hospital study using the new twelve-item measurement of patient satisfaction with antenatal care.

Chapter 4

Analysis and research findings

This chapter focuses on the analysis of data obtained from the questionnaires. Analysing data usually involves two steps: First, reducing to manageable proportions the wealth of data that one has collected or has available; second, identifying patterns and themes in the data (Mouton, 1996: 161). In the first part of this chapter the strategies to reduce the data are discussed and in the last part the research findings are discussed.

4.1 Data analysis

Collapsing of categories to interpret satisfaction ratings logically was done for the following variables.

1) Age was coded in groups as follows:

< 19 years (World Health Organisation definition for adolescent)

20-24 years

25-29 years

30-34 years

35-39 years and

> 40 years

2) Gravidity: 1, 2-4 and 5 or more (one being the first pregnancy and 5 or more the definition for a multigravida; with more complications in pregnancy).

3) Parity: 0 (no children), 1 (one child), 2,3 and 4 or more children.

4) Gestation at booking:

<12 weeks (very early booking)

13-20 weeks (early enough for an ultrasound)

> 22 weeks (late booking with more pregnancy complications)

5) Marital status:

Five categories were collapsed to form two:

Unmarried consists of unmarried (stayed with partner), unmarried (do not stay with friend) and divorced.

Married consists of married, and divorced but married now.

6) Members per household was collapsed using logical categorising: one; two or three; four to five; six or more.

7) Question four and five were combined to form a new category of patients with previous work experience and people without previous work experience.

8) Household income:

Because there were only two households earning more than R4400.00, the last two categories were collapsed to get a new category for all households earning more than R1995.00 per month. There was one missing value on this variable - a patient who did not know how much her husband earned.

9) Hours of watching television per day were collapsed using logical categorising: zero hours per day; one hour per day; two or three hours per day and four or more hours per day.

10) Hours of listening to the radio per day were collapsed using logical categorising: zero hours per day; one hour per day; two or three hours per day and four or more hours per day.

11) Problems with previous pregnancy were collapsed as follows:

no problems, medical problems with pregnancy; fetal problems with pregnancy.

12) Clinic attended in previous pregnancy: Tygerberg High Risk and Special Care collapsed into one variable.

13) "How did you become aware of this pregnancy" (question 16). Categories three to five were collapsed.

Postcoding was done for open-ended questions based on the responses obtained in the survey.

4.2 Statistical analysis

The modified patient satisfaction score consisting of the sum of the twelve items remained after validation of the scale expressed as a percentage, as well as the seven aspects of patient satisfaction according to Perneger *et al*, were regarded as dependent variables. Scores on these variables ranged between 0 and 100.

Independent variables used in the analysis consisted, among others, of socio-demographic characteristics and attitudes, all of which were categorical. Where independent variables comprised only two categories, a t-test for independent groups was performed. For independent variables with more than two variables, a one way analysis of variance (ANOVA) was performed, followed by a Bonferroni test for multiple subgroup comparison. Bonferroni's test uses *t* tests to perform pairwise comparisons between group means, but controls overall error rate by setting the error rate for each test to the experimental error rate divided by the total number of tests. Differences between the mean satisfaction scores of an independent variable were considered statistically significant if the p-value was <0.05 . Statistical analysis was done with *SPSS for Windows version 6.1* (Kinnear and Gray, 1994).

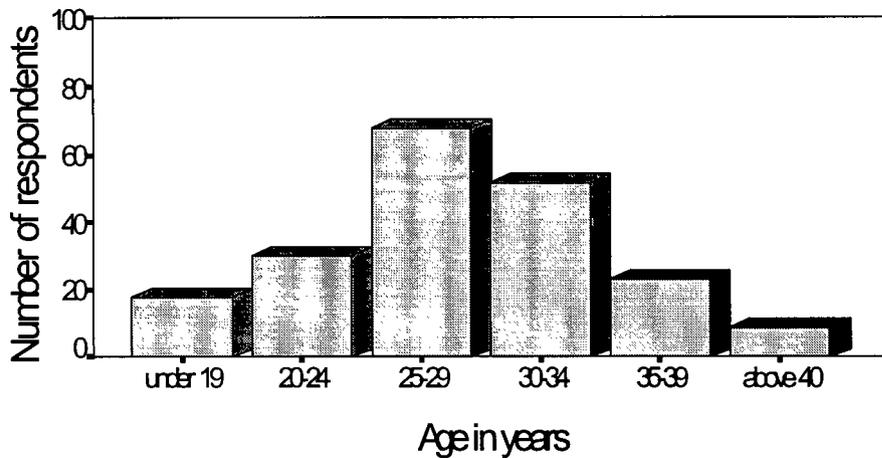
4.3 Socio-demographic characteristics

A total of 202 women were approached to complete the questionnaire. Two were not included due to reasons mentioned earlier. All 200 completed questionnaires were included in the analysis.

4.3.1 Age

The mean age of the sample was 28.4 years. Eighteen respondents were 19 years or younger (adolescents) and more than half was less than 30 years of age. The age distribution is presented in figure 4.1 (n=200). This is a normal distribution.

Figure 4.1
Age of respondents



4.3.2 Gravity and parity

The gravity and parity of the respondents is shown in figures 4.2 and 4.3 (n=200). For thirty-six (18%) it were their first pregnancy and 47 (23.5%) patients did not have a living child.

Figure 4.2
Gravity of respondents

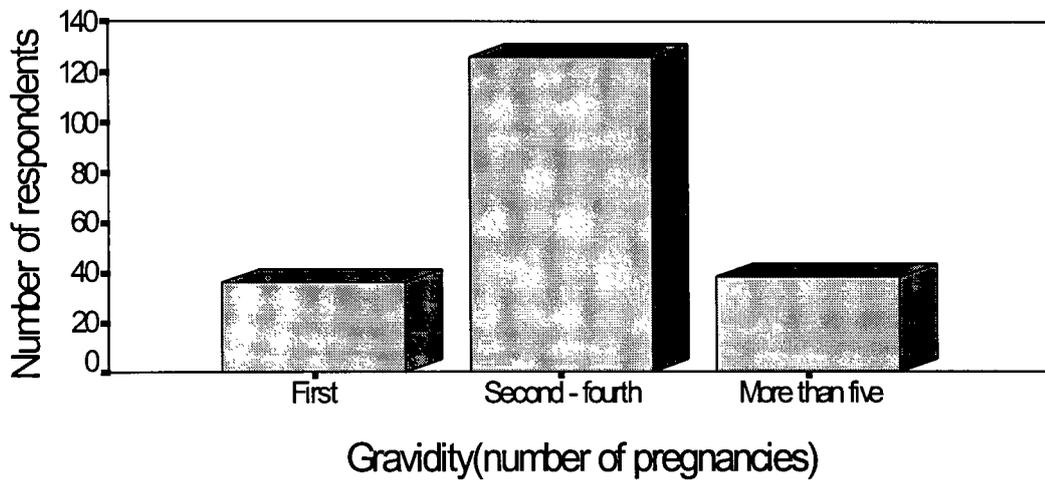
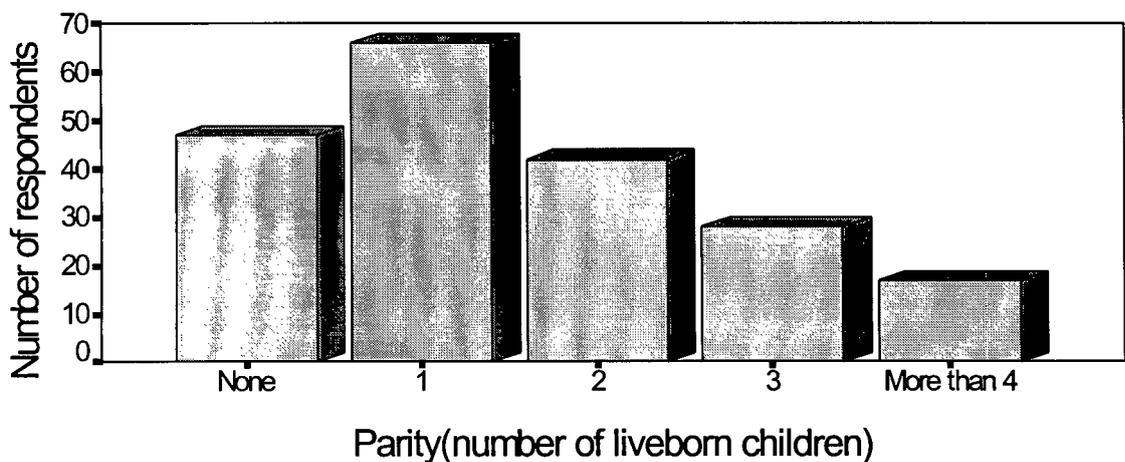


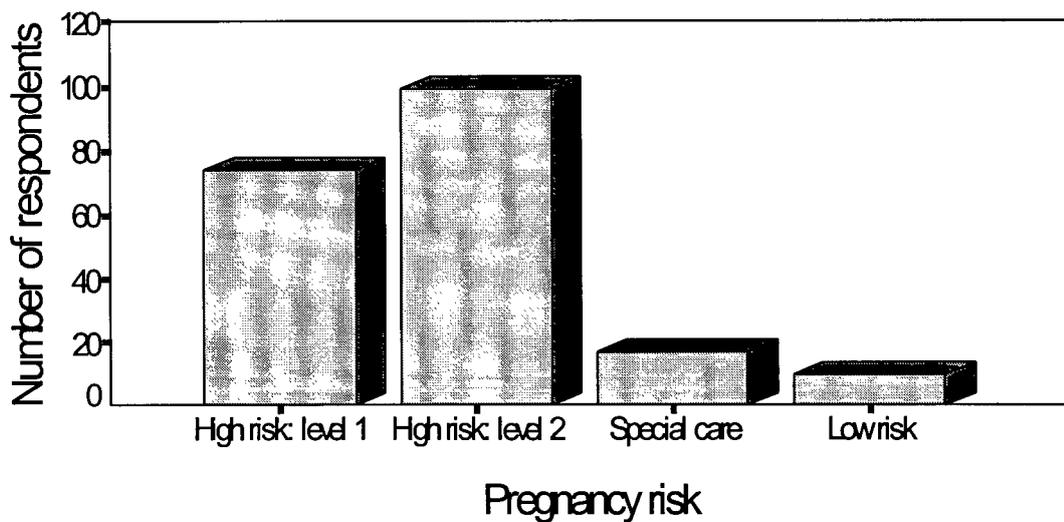
Figure 4.3
Parity of respondents



4.3.3 Pregnancy risk

Only 10 (5%) of the respondents were regarded as low risk for this pregnancy. This is because TBH is a tertiary referral hospital that attends mainly to higher risk group patients. Most of the respondents (99 or 49.5%) attended the high-risk level two clinic. The distribution of the respondents in the four clinics is presented in figure 4.4 (n=200).

Figure 4.4
Pregnancy risk of respondents

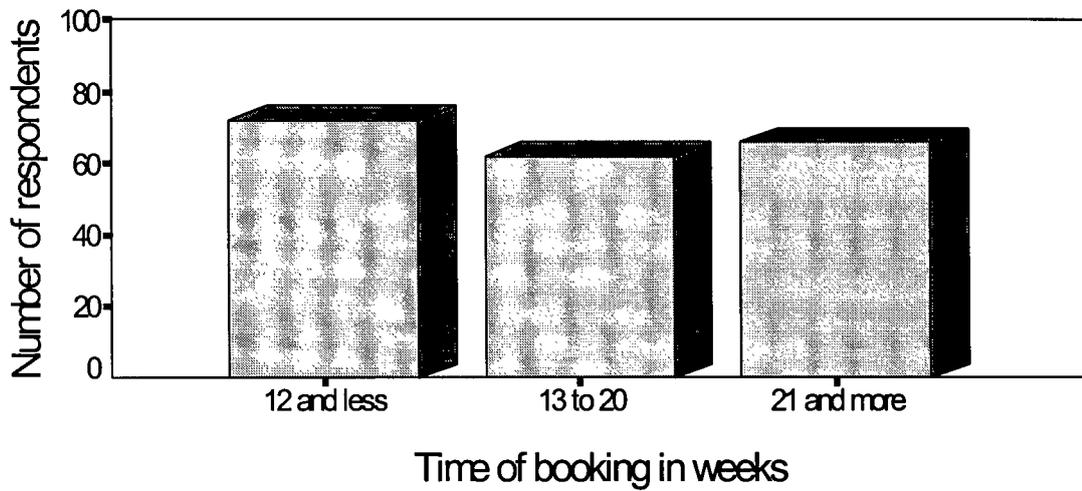


4.3.4 Gestation at booking visit

The pregnancy gestation at the time of booking is shown in figure 4.5 (n=200).

Seventy-two (36%) of the patients booked very early (twelve and less weeks), 62 (31%) booked early (20 or less weeks) and 66 (33%) booked after twenty weeks.

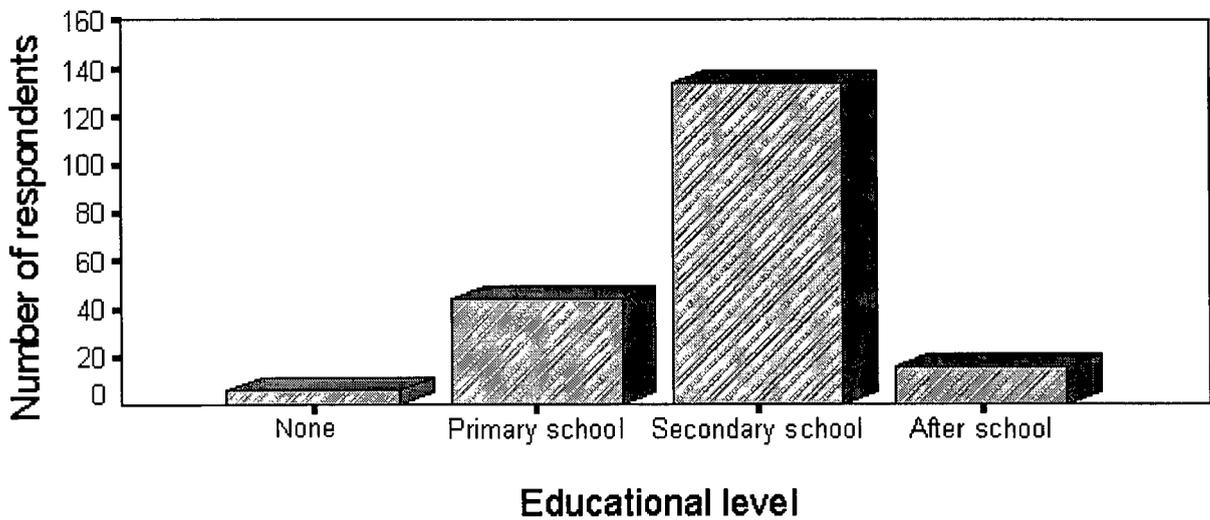
Figure 4.5
Time of booking of respondents



4.3.5 Educational level

Six patients did not attend any formal education and sixteen (8%) had further education after school. The majority 134 (67%) were educated up to secondary school level. Only eight (4%) do not watch television and 55 (27.5%) do not listen to the radio at all. The distribution of the educational level of respondents is shown in figure 4.6 (n=200).

Figure 4.6
Educational level of respondents



4.3.6 Income, living- and work status

Forty-four (22%) had an household income level less than R575.00 and 50 (25%) had an income more than R1995.00. The majority of respondents lived in the households 105 (52.5%) earned between R575.00 and R1995.00. The monthly income per household is shown in figure 4.7 (n=198). There were 92 (46%) who lived in their own home/room (owner or rented), 74 (37%) lived with their parents and 34 (17%) lived mostly in informal settlements. Ninety (45%) of the patients worked during this pregnancy. The distribution of the work status in this pregnancy is presented in figure 4.8 (n=200).

Figure 4.7
Monthly income per household

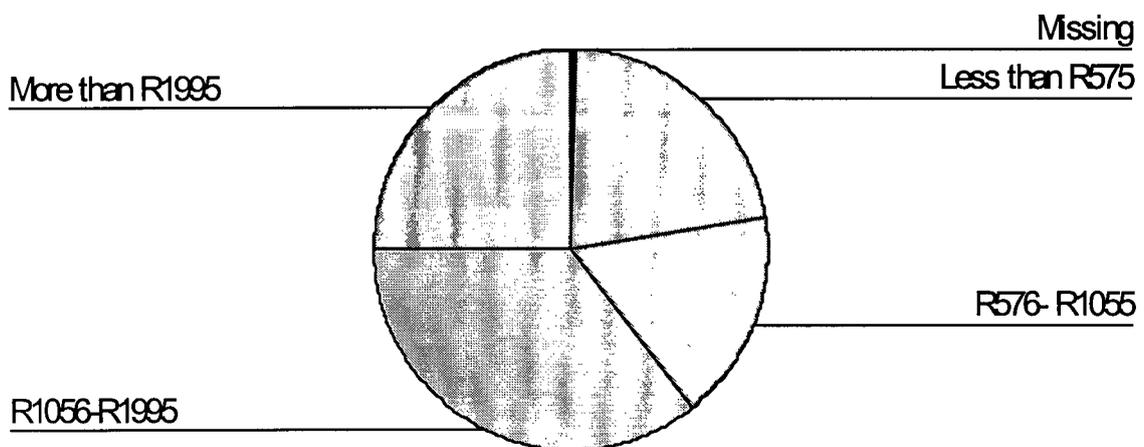
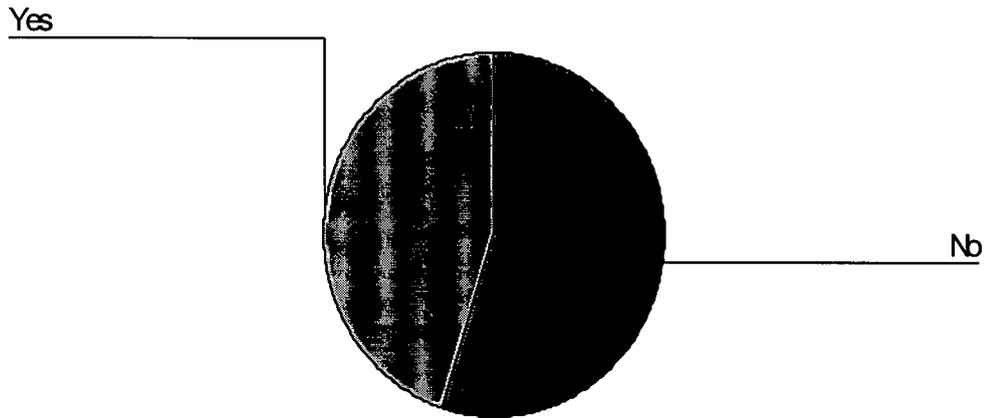


Figure 4.8
Workstatus in this pregnancy



4.3.7 Other variables

The majority (53%) of patients go to a government institution (day hospital or hospital) if they are in need of medical care when not pregnant. Twenty-two of these patients sometimes visit a private doctor if necessary. Only 21 (10.5%) of these patients have a medical aid. Tables 4.1 and 4.2 summarise the socio-demographic characteristics of the respondents to the questionnaire.

Table 4.1

Socio-demographic characteristics of the patients attending the antenatal clinics at Tygerberg Hospital (continuous variables)

Characteristic	Mean (SD)	Min	Max
Age (year)	28.4 (6.2)	14	43
Gravidity	3.1 (1.7)	1	10
Parity	1.59 (1.4)	0	8
Gestation at booking (weeks)	17.5 (7.9)	6	40

Table 4.2**Socio-demographic characteristics of the patients attending the antenatal clinics at Tygerberg Hospital (categorical variables).**

Characteristic	Number of patients (n =200)	Valid percentage
Ethnic group		
Coloured	189	94.5
Black	7	3.5
White	3	1.5
Asiatic	1	0.5
Clinic attended (pregnancy risk)		
High (level 1)	74	37
High (level 2)	99	49
Special care	17	8.5
Low risk	10	3.5
Educational level		
None	6	3
Primary school	44	22
Secondary school	134	67
After school	16	8
Marital status		
Married	109	54.5
Not married/ divorced	91	45.5
Household income		
Less than R575	44	22
R576 - R1055	34	17
R1056 - R1995	71	35
R1996 and higher (Missing value =1)	50	25
Housing		
Owner	54	27
Rented house	27	13.5
Rented room	11	5.5
Stay with parents	74	37
Other	34	17
Work status		
Yes	90	45
No	110	55
Medical aid		
Yes	21	10.5
No	179	89.5
Usual medical care		
Day hospital/ hospital	84	42
Private/day hospital	22	11
Private	81	40.5
Other	13	6.5

4.3.8 Differences in respondents in four clinics

The groups in the four different clinics differed considerably in their socio-demographic characteristics (Table 4.3). The patients in the low risk clinic were significantly younger than in the other clinics. The gravidity of the patients in the special care clinic was significantly higher than in the other clinics. Patients in the high-risk (level 1) clinic booked earlier than the other patients.

These results are expected because the criteria to attend the special care clinic are, amongst other, repeated previous pregnancy losses and severe medical problems in previous and current pregnancies. Low risk patients include adolescents and staff working in the hospital. This is also the smallest clinic. The high risk (level 2) clinic is the busiest clinic of all and these people are seen by senior medical staff (medical officers and registrars), while the high risk (level 1) patients are seen by medical students and interns.

Table 4.3**Characteristics of patients for the four clinics (n = 200)**

	High risk Level one	High risk level two	Special care	Low risk	F- value	p- value
n	74	99	17	10		
Age (year)	28.7 (6.9)*	28.4 (5.2)*	31 (4.3)*	21.6 (7.3)	5.3	0.0014
Gravidity	2.8 (1.8)*	3.1 (1.4)*	5.1 (2.1)	1.8 (1.5)*	10.48	0.0000
Parity	1.6 (1.6)	1.6 (1.2)	1.5 (1.4)	0.6(1.2)	1.6	0.1684
First book- ing (weeks)	19.6 (8.4)*	16.3 (7.7)	14.47 (7.1)	17.9 (5.6)	3.34	0.0205

Note: * = significant difference between groups according to Bonferroni ($p < 0.05$)

	High risk Level one	High risk level two	Special care	Low risk	χ^2	p- value
Ethnic group					9	0.45
Coloured	72	93	14	10		
Black	2	3	2	0		
White	0	2	1	0		
Asiatic	0	1	0	0		
Educational level					3	0.20
None/ primary school	22	25	3	0		
Secondary school/ after school	52	74	14	10		
Marital status					3	0.02*
Married	39	58	11	1		
Not married/ divorced	35	41	6	9		
Income					3	0.34
Less than R1055	30	41	2	5		
R1056 and more (Missing value = 1)	44	58	14	5		
Housing					3	0.02*
Owner/ rented house/ -room	49	73	14	3		
Stay with parents/ others	25	26	3	7		
Work status					3	0.42
Yes	33	47	8	2		
No	41	52	9	8		
Medical aid					3	0.89
Yes	9	10	1	1		
No	65	89	16	9		

Note: * = significant difference between groups according to χ^2 ($p < 0.05$)

In the next section the twelve-item satisfaction scores will be calculated for the different clinics and the variables will be tested to identify any relationship or association with the level of satisfaction.

4.4 Satisfaction rating

The satisfaction scores range from 48.3 to 100. The mean score is 86.4 with a standard deviation of 12.1. The distribution of the satisfaction score is presented in figure 4.9. The bimodal distribution is negatively skewed. The frequency distributions of the twelve items are shown in table 4.4.

Figure 4.9
Modified satisfaction score as percentage

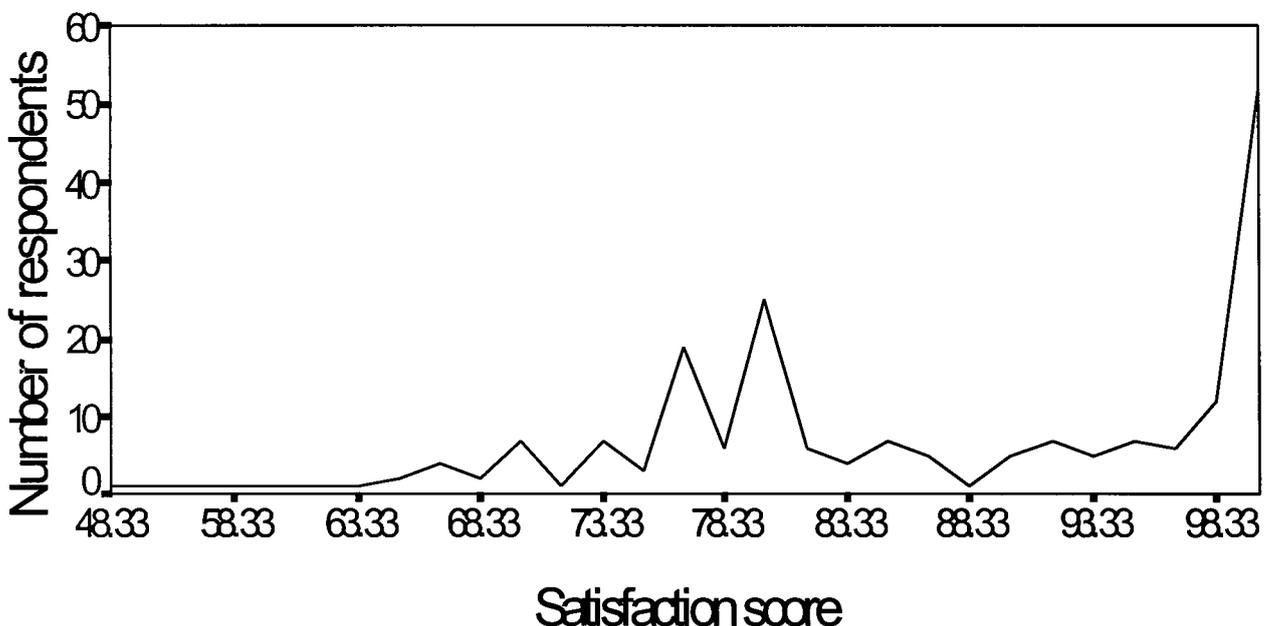


Table 4.4**Frequency distributions for twelve items used for satisfaction score**

	Clinic attended			
	High risk 1	High risk 2	Special care	Low risk
Provider is competent				
Disagree	1 1.4%	2 2.0%		
Uncertain	4 5.4%	3 3.0%		1 10.0%
Agree	40 54.1%	46 46.5%	1 5.9%	1 10.0%
Strongly agree	29 39.2%	48 48.5%	16 94.1%	8 80.0%
Provider is thorough				
Strongly disagree		1 1.0%		
Disagree	2 2.7%	7 7.1%		
Uncertain	3 4.1%	5 5.1%		1 10.0%
Agree	46 62.2%	40 40.4%	1 5.9%	1 10.0%
Strongly agree	23 31.1%	46 46.5%	16 94.1%	8 80.0%
No trust in provider				
Strongly agree	1 1.4%	2 2.0%		
Agree	7 9.5%	8 8.1%		1 10.0%
Uncertain	4 5.4%	6 6.1%		
Disagree	36 48.6%	37 37.4%		1 10.0%
Strongly disagree	26 35.1%	46 46.5%	17 100.0%	8 80.0%
Provider explain good				
Strongly disagree	1 1.4%		1 5.9%	
Disagree	9 12.2%	14 14.1%		2 20.0%
Uncertain	2 2.7%	6 6.1%		1 10.0%
Agree	38 51.4%	35 35.4%	1 5.9%	2 20.0%
Strongly disagree	24 32.4%	44 44.4%	15 88.2%	5 50.0%

Table 4.4

Frequency distribution for twelve items used for satisfaction score (continued)

	Clinic attended			
	High risk 1	High risk 2	Special care	Low risk
Provider spend ample time				
Strongly disagree		1 1.0%		
Disagree	11 14.9%	6 6.1%		
Uncertain	6 8.1%	3 3.0%		2 20.0%
Agree	38 51.4%	39 39.4%	5 29.4%	1 10.0%
Strongly agree	19 25.7%	50 50.5%	12 70.6%	7 70.0%
Unnecessary tests				
Strongly agree	1 1.4%	4 4.0%		
Agree	12 16.2%	10 10.1%		1 10.0%
Uncertain	5 6.8%	4 4.0%		
Disagree	33 44.6%	34 34.3%	1 5.9%	1 10.0%
Strongly disagree	23 31.1%	47 47.5%	16 94.1%	8 80.0%
Satisfied with care				
Strongly disagree	1 1.4%			
Disagree	1 1.4%	2 2.0%		
Uncertain		5 5.1%		1 10.0%
Agree	44 59.5%	36 36.4%	1 5.9%	2 20.0%
Strongly agree	28 37.8%	56 56.6%	16 94.1%	7 70.0%
Provider show respect				
Strongly disagree	1 1.4%	1 1.0%		
Disagree	1 1.4%	3 3.0%		
Uncertain	1 1.4%	1 1.0%		
Agree	35 47.3%	40 40.4%		2 20.0%
Strongly agree	36 48.6%	54 54.5%	17 100.0%	8 80.0%

Table 4.4

Frequency distribution for twelve items used for satisfaction score (continued)

	Clinic attended			
	High risk 1	High risk 2	Special care	Low risk
Provider do not listen Strongly agree		2 2.0%		
Agree	5 6.8%	2 2.0%		
Uncertain	4 5.4%	2 2.0%		1 10.0%
Disagree	36 48.6%	45 45.5%		1 10.0%
Strongly disagree	29 39.2%	48 48.5%	17 100.0%	8 80.0%
Care is very poor Strongly agree		2 2.0%		
Agree	6 8.1%	4 4.0%		
Uncertain	3 4.1%	7 7.1%		
Disagree	37 50.0%	35 35.4%		2 20.0%
Strongly disagree	28 37.8%	51 51.5%	17 100.0%	8 80.0%
Provider reassure Disagree	3 4.1%	7 7.1%		1 10.0%
Uncertain	2 2.7%	5 5.1%		
Agree	38 51.4%	40 40.4%	2 11.8%	2 20.0%
Strongly agree	31 41.9%	47 47.5%	15 88.2%	7 70.0%
Do tests without explain Strongly agree		1 1.0%		
Agree	1 1.4%	1 1.0%		
Uncertain	3 4.1%	4 4.0%		
Disagree	48 64.9%	43 43.4%		1 10.0%
Strongly disagree	22 29.7%	50 50.5%	17 100.0%	9 90.0%

The negatively skewed distribution with the high mean of satisfaction rating is not a new finding in the determination of satisfaction with medical care and physicians. Hulka *et al.* (1971) found that, after a variation in methods employed and populations studied, the satisfaction expressed with physicians and medical care were high among all socio-economic groups, a surprisingly consistent finding. Where variation exists, it presents as varying levels of positive attitudes rather than a truly negative sentiment (Hulka *et al.*, 1971: 670). In an interview study of 232 women by Porter and Macintyre (1984) in Aberdeen in 1980 as part of an evaluation of new schedules of antenatal care, it was found that overall levels of satisfaction was high. They found that women tend to assume that whatever system of care is provided, has been well planned and is therefore the best one. Women were fairly uncritical of the antenatal care and conservative in the sense of saying that "what is, must be best" (Porter and Macintyre, 1984: 1198).

The process of conservative reactions means it is very difficult to assess what people's actual response to innovations in antenatal care are likely to be. There appears to be a tendency to accept the *status quo* without adverse comment. Porter and Macintyre conclude by specifically drawing attention to the importance of looking at relative rather than absolute differences in care preferences.

It has been hypothesised that bias due to socially desirable response sets (SDRS) can account for these high positively skewed satisfaction scores. Many women are known to be hesitant in expressing negative or socially unacceptable opinions (Hulka *et al.*, 1971). A rating of medical care personally received yield more favourable

responses than ratings of care received by people in general (Senf *et al*, 1991; Hays and Ware, 1986). General items are therefore useful in achieving greater variation in scores of satisfaction ratings. Hayes and Ware (1986) specifically tested for SDRS in the Rand's Health Insurance Experiment in the United States of America in a general population (n=3918) from November 1974 to January 1982. They included eight items to measure SDRS and compared general and personal medical care ratings. Across sites and over years of the study, the rating item with a personal reference was consistently biased upward for those manifesting SDRS, while the rating item with a general reference was not (Hayes and Ware, 1986: 519).

In this study they further found that the correlation between SDRS and the difference between ratings on the personal and general reference to medical care was statistically significant. They concluded that people who exhibit a SDRS tendency are likely to rate medical care more favourably than those without a SDRS tendency, but only if administered items were of personal reference. It has been found that lower socio-economic status respondents tend to rate their personal care more favourably than care received by people in general (Ware, 1983). No difference in reliability or validity between general and personal reference items could be shown in the study by Ware *et al* (1983). The validity of general reference items relative to personal reference items in relation to utility and programme planning is still unclear.

In the TBH survey SDRS tendency could have played a big part in these positively skewed scores. The new antenatal care service is free for all. The hospital serves patients from a lower socio-economic area. The interviewer was recognised as a medical doctor on a few occasions.

There is a significant difference in satisfaction ratings between the clinics (Table 4.5, figure 4.10). Patients are significantly more satisfied with antenatal care if they attend the special care clinic. The mean satisfaction score for people attending the special care clinic is 98.4 with a standard deviation of 2.16. The mean score for patients attending the low-risk clinic is 92.33 with a standard deviation of 11.2 and the mean total scores for the high risk level one and -two clinic are 83.3 (SD=10.5) and 86.1 (SD=12.9) respectively.

When the differences in socio-demographic variables were adjusted for in ANCOVA models, the setting of the clinic was still the main predictor for the satisfaction score.

The patients in the high-risk level two clinic are significantly more satisfied than the high risk level one clinic for aspect number five, which represents time spent with the physician/midwife. This may be due to the fact that interns and student-interns have to discuss the patients with more senior staff, resulting in longer time spent at the examination.

The satisfaction rating according to the clinic is summarised in Table 4.5 and diagrammatically presented in Figure 4.10.

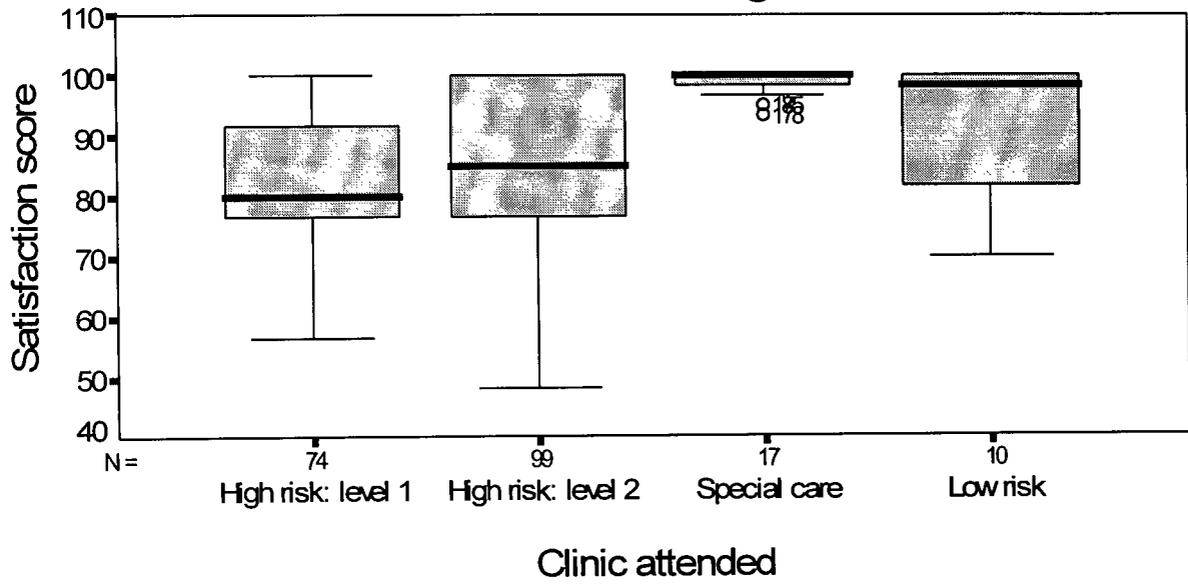
Table 4.5**Satisfaction rating according to clinic**

	High risk level 1 (n=74)	High risk level 2 (n=99)	Special care (n=17)	Low risk (n=10)	F- value	p-value
	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>		
Satisfaction rating	83.33(10.57) ^a	86.08(12.92) ^a	98.43(2.16) ^a	92.33(11.25)	8.94	0.0000

Note: a=significant difference between groups according to Bonferroni test (p [0.05).

Figure 4.10

Satisfaction score according to clinic attended



4.5 Variables associated with the level of satisfaction

One of the purposes of this study was to identify those characteristics of people and their use of health care systems, which are associated with different degrees of satisfaction with the clinics.

Variables were tested for in the categories of medical/biographic, socio-demographic, medical care and attitude characteristics.

In the category of medical care, the risk of the current pregnancy was associated with patient satisfaction scoring as discussed (Table 4.5). No difference in satisfaction with antenatal care could be demonstrated in relation to age, gravidity, parity and time of booking (Table 4.6-4.9).

Socio-demographic characteristics which were tested include household status, number of people in the household, monthly income, working status, educational status, listening to the radio and watching television (Table 4.10-4.16). There were a significant difference on aspect six (explanations on what to expect and why tests were done) if people did not have any education. It may be that these patients did not understand the content of the items or that the physician/midwife took extra time to explain the procedures/tests. When household monthly income was compared with the satisfaction score, the respondents with the higher monthly income had higher satisfaction scores.

There was no difference in satisfaction rating when usual medical care and the membership of a medical aid were examined (Table 4.17 and 4.18).

The following variables were considered when examining any correlation between patient satisfaction and attitudes towards the pregnancy: marital status, planned pregnancy, smoking, alcohol consumption and attitude towards the recognition of pregnancy.

One hundred and nine (54.5%) of the patients were married and 98 (49%) planned this pregnancy. For the remainder, who did not plan this pregnancy, it was accepted in 92 (93.8%) of the cases. One hundred and ten (55%) patients were glad when they heard that they were pregnant, 24 (12%) scared, twelve (6%) cross and 54 (27%) were uncertain upon recognition of the pregnancy. No statistically significant difference in satisfaction with antenatal care was found examining these variables (Table 4.19-4.24).

Table 4.6**Satisfaction rating according to gravidity**

	1 n=36	2-4 n=126	5 n=38	F-value	p-value
Total score	84.68 (14.26)	86.10 (11.56)	89.17 (11.63)	1.40	0.2496

Table 4.7**Satisfaction rating according to parity**

	0 n=47	1 n=66	2 n=42	3 n=28	μ4 n=17	F-value	p-value
Total score	85.60(13.61)	86.26(12.38)	86.31(11.12)	88.87(10.15)	85.59(13.0)	0.36	0.8382

Table 4.8**Satisfaction rating according to age**

	<19 n=18	20-24 n=30	25-29 n=68	30-34 n=52	35-39 n=23	>40 n=9	F-value	p-value
Total score	84.07 (13.54)	82.0 (13.56)	88.68 (10.61)	85.54 (12.95)	89.28 (11.73)	86.67 (9.01)	1.75	0.1259

Table 4.9**Satisfaction rating according to time of booking**

	[12 n=72	13-20 n=62	>20 n=66	F-value	p-value
Total score	88.17 (13.22)	85.62 (12.2)	85.28 (10.67)	1.18	0.3088

Table 4.10**Satisfaction rating according to household status**

	House owner n=54	Rented house n=27	Rented room n=11	Live with parents n=74	Other n=34	F-value	p-value
Total score	87.28 (10.99)	88.15 (11.63)	85.76 (14.19)	84.12 (12.95)	88.92 (11.47)	1.25	0.2924

Table 4.11**Satisfaction rating according to number of people in household**

	Alone n=6	2-3 n=71	4-5 n=62	>5 n=61	F-value	p-value
Total score	92.50 (11.04)	86.13 (12.50)	87.02 (12.01)	85.57 (11.97)	0.66	0.5760

Table 4.12

Satisfaction rating according to monthly income

	<R575.00 n=44	R575.01- R1054.99 n=34	R1055.00- R1994.99 n=71	>R1995.00 n=50	F-value	p-value
Total score	84.92 (12.18)	84.80 (12.87)	86.92 (12.17)	87.93 (11.61)	0.72	0.5409

Missing value=1

Table 4.13

Satisfaction rating according to work status

	Unemployed n=110	Employed n=90	t-value (95% CI)
Total score	85.46 (12.45)	87.21 (11.85)	1.02 (-1.649; 5.147)

Table 4.14

Satisfaction rating according to educational status

	None n=6	Primary school n=44	Secondary school n=134	Higher education n=16	F-value	p-value
Total score	96.94 (5.90)	84.39 (11.68)	86.84 (11.78)	84.58 (15.97)	2.13	0.0979

Table 4.15

Satisfaction rating according to hours of radio listening per day

	0 n=55	1 n=31	2-3 n=44	>3 n=70	F-value	p-value
Total score	87.94 (11.95)	85.05 (13.95)	88.03 (11.39)	84.83 (11.83)	1.08	0.3591

Table 4.16

Satisfaction rating according to hours watching television per day

	0 n=8	1 n=44	2-3 n=80	>3 n=68	F- value	p-value
Total score	91.46 (9.40)	82.69 (11.13)	86.54 (12.82)	88.11 (11.78)	2.34	0.0746

Table 4.17

Satisfaction rating according to medical aid per group

	Yes n=21	No n=179	t-value (95%CI)
Total score	86.19 (12.25)	86.45 (12.14)	-0.02 (-5.79; 5.266)

Table 4.18

Satisfaction rating according to private health care when not pregnant

	Private care n=101	No private care n=99	t-value (95% CI)
Total score	85.87 (12.04)	86.99 (12.24)	-0.65 (-4.498; 2.274)

Table 4.19

Satisfaction rating according to marital status

	Married n=109	Unmarried n=91	t-value (95% CI)
Total score	86.21 (11.43)	86.69 (12.96)	-0.28 (-3.88; 2.926)

Table 4.20

Satisfaction rating according to planned pregnancy

	Planned n=96	Unplanned n=98	t-value (95% CI)
Total score	86.49 (12.18)	86.82 (12.02)	0.19 (-3.099; 3.753)

Missing value=6

Table 4.21

Satisfaction rating according to smoking

	No n=134	Yes n=66	t-value (95% CI)
Total score	86.18 (12.06)	86.92 (12.32)	0.40 (-2.865; 4.34)

Table 4.22

Satisfaction rating according to consumption of alcohol

	No n=187	Yes n=13	t-value (95% CI)
Total score	86.51 (12.15)	85.26 (12.11)	-0.36 (-8.122; 5.622)

Table 4.23**Satisfaction rating according to attitude towards recognition of pregnancy**

	Glad n=110	Scared n=24	Cross n=12	Uncertain n=54	F-value	p-value
Total score	86.43 (12.12)	86.38 (11.94)	88.61 (11.90)	84.81 (12.37)	0.52	0.6676

Table 4.24**Satisfaction rating according to recognition of pregnancy**

	Menstruation n=139	Medical encounter n=40	Movement of baby n=5	Tender breasts n=7	Other n=9	F-value	p-value
Total score	87.36 (11.91)	84.63 (10.13)	84.0 (13.87)	88.10 (15.59)	80.0 (18.63)	1.15	0.3359

4.6 Open ended comments

Most of the interviewees enjoyed the interview and some expressed approval at the opportunity to express their thoughts on the quality of care in the clinic. Some comments are: "You should do this more often... It is a pity that you did not do the questionnaire with my previous baby... I was wondering how I could tell you about that sister..."

Seventy-four patients did not respond to the question on what they disliked most about the pregnancy. Sixty-five (32.5%) did not like the minor complaints in pregnancy (heartburn, being nauseous). Twenty-five (12.5%) did not look forward to the confinement. Only 5.5% (11 patients) did not like to attend the clinic with the following reasons given most often " long waiting... I have to attend clinic too often... walking to hospital... staying a whole day from work..." One patient had problems with a sister in the clinic because "...she always pick on me."

When asked what they like most about being pregnant, fourteen patients said that they did not like anything about being pregnant. Their satisfaction rating did not differ significantly with the rest. More than half (51.5%) said that they liked the movement and feeling of the baby most. Two patients attending the special care clinic said that it is nice to see the same doctor each time.

4.7 Summary

- Except for differences in age, gravidity, marital status and time of first booking the respondents in the four clinics did not differ on most of the socio-demographic variables. This confirms that Tygerberg Hospital serves a homogenous population.
- Mean satisfaction scores (86.4; SD=12.1) are high and its bimodal distribution is positively skewed. This is expected and might be due to SDRS tendencies.
- There is a significant difference in satisfaction rating between the clinics. Respondents are significantly more satisfied with antenatal care if they attend the special care clinic.
- When controlled for the differences in socio-demographic variables between the respondents of the clinics, the main effect in determining the satisfaction score was the clinic attended.
- No differences in the twelve-item patient satisfaction score with antenatal care could be demonstrated in relation to any of the variables that were tested for in this survey.
- Open-ended questions used in this survey lead to quality improvement initiatives.

A summary of the main findings and conclusions of the study is presented in the next chapter.

Chapter 5

Conclusions and recommendations

5.1 Introduction

The main aim and purpose of this study was to develop and validate a scale to measure patient satisfaction with antenatal care.

In chapter one the importance and need for this in the changing health care system in South Africa was discussed, with particular emphasis on the need for such scales for antenatal care. Until now a lack of a standardised instrument in South Africa to measure the satisfaction of local patients with antenatal care has existed.

A literature review on the conceptualisation of patient satisfaction with medical care and the methods and development of instruments was undertaken to develop and validate a scale to measure patient satisfaction with antenatal care. There are numerous methodologies and research designs that are used to develop these scales. A main finding in the conceptualisation of patient satisfaction was that it is a multi-dimensional concept with aspects corresponding to the major characteristics of providers and services. There are also numerous variables that influence patient satisfaction with medical care. The main findings of the literature survey are summarised in section 2.4.

The research design and methodology used in this study at the TBH antenatal clinics were discussed in chapter three. Perneger's instrument measuring seven aspects of patient satisfaction with medical care was used in the development of the scale. The importance and problem of cross-cultural issues in survey research and how it was controlled for in this TBH study are discussed in section 3.3.4.1. Methods to determine reliability and validity of the survey

instrument were explained and the importance of factor analysis in determining construct validity is also emphasised. Validation of this instrument resulted in a unidimensional twelve-item scale that had an underlying factor to do with the process of antenatal care with no discrimination between the various aspects of provider behaviour.

Chapter four focussed on the analyses of data obtained from the questionnaires. There were differences in age, gravidity, marital status and the time of first booking between respondents in the four clinics. Mean satisfaction scores (86.4; SD 12.1) were high and its bimodal distribution were negatively skewed. SDRS tendencies in satisfaction rating of medical care are discussed in section 4. Respondents in the special care clinic were significantly more satisfied with their antenatal care than the two high risk clinics, even when controlled for differences in socio-demographic variables in ANCOVA models.

In the next sections I shall discuss conclusions of the study regarding

- i. The scale validation;
- ii. The substantive findings;
- iii. Recommendations for further research are suggested.

5.2 Validation of the scale

Perneger suggested that there are seven dimensions of patient satisfaction with antenatal care. Factor analysis in his study led to the identification of two underlying factors that accounted for 53% of the variance. The first item related to general satisfaction and physician attributes, and the second factor to access to care. The Cronbach α coefficients were 0.44 on the aspect of

access to care. As he could not calculate the reliability of the reception staff aspect, he included both these aspects in the factor analysis.

The TBH scales were validated in three steps. The seven aspects of care suggested by Perneger could not be substantiated through confirmatory factor analysis, as this showed no underlying factor structure. In the second step, items related to access of care were dropped because the Cronbach α coefficient was calculated to be 0.43 and therefore the reliability in the TBH setting could not be adequately established. Because there was only one item in the reception staff aspect that could not strengthen construct validity, it was dropped from further analysis. In the final step, exploratory factor analysis resulted in a single underlying factor that accounted for 53.6% of the total variance. All the items referred to the process of antenatal care. A uni-dimensional twelve-item scale resulted from this validation.

These results show the importance of the validation of a scale that was developed in another setting and culture. Validation of scales is extremely important if one uses an existing scale in a cross-cultural setting. Perneger's scale was validated for twelve of the sixteen items in the TBH setting.

5.3 Substantive findings

Mean satisfaction ratings were high (86.4; SD=12.12) and it were negatively skewed. The mean total satisfaction rates of the Perneger study are not published, but the satisfaction rating for the different aspects of satisfaction were lower than the TBH study. This could be due to the main methodological difference between the two studies. The Perneger study was a survey through a self-administered questionnaire, which was mailed. The TBH study was an interviewer-

administered study. In the TBH setting, SDRS tendencies could have played a major role in the negatively skewed result. Respondents could have been hesitant to express any negative opinions about their free antenatal care. The advantages of a self-administered questionnaire over an interview study (that could explain the differences), are the possibility of anonymity and privacy to encourage more candid responses on medical care that is known to result in high, positively skewed scores. Another research strategy to control for this would be to explore indirect measures of patient satisfaction, for example late booking, non-booking, discontinuation or change in care.

The significantly higher satisfaction scores obtained from the respondents in the special care clinic could be due to factors such as:

- i. The clinic is served by only two consultants;
- ii. Patients usually see the same consultant at each visit;
- iii. The clinic is in a separate waiting room.

Factors that could account for the significantly lower satisfaction scores in the high-risk clinics are:

- i. These are the busiest clinics of all the antenatal clinics;
- ii. Different interns, medical officers and registrars see the patients each time;
- iii. Medical students and nursing staff are taught in these clinics how to examine patients.

There was no significant difference between the satisfaction scores in the special care and low-risk clinic. Only one medical officer sees the patients in the low-risk clinic. These results suggest that the continuity of care by the same doctor can be an important determinant of patient satisfaction with antenatal care.

When the differences in socio-demographic variables between the four clinics were controlled for in ANCOVA models, the setting of the clinic was still the main predictor of the patient satisfaction score. This suggests that satisfaction rating seems to be much more of a measure of care than it is a measure of the patients' characteristics. It was also the finding in the Perneger study that the quality of the doctor-patient relationship and the physician's professional skills, rather than the patient's characteristics, were the main determinants of patient satisfaction scores.

No significant correlation with any of the variables tested in the TBH study could be found. In earlier studies (Hulka *et al*, 1971) significant differences were found, but this could not be found in later studies (Ware *et al*, 1983b; Perneger *et al*, 1996). Considering the homogeneous population under study, even the modest differences noted between categories can be impressive for measuring satisfaction with antenatal care.

5.4 Recommendations for further research

Further research is necessary to refine a standardised instrument in South African antenatal clinics. From this study, the following recommendations for further research are made:

- To consider the application of an anonymous self-administered questionnaire in the clinic setting.
- To expand the sample to include the primary and secondary health care settings with a more heterogeneous setting.
- Review and expand the items for the access of the care aspect of patient satisfaction with antenatal care.

- Include items to explore the continuity of care provider aspect of patient satisfaction with antenatal care.
- Include personal and general reference items to antenatal care with a measure of SDRS tendencies.
- Include the following open-ended questions:
 - i. What do you like about the care?
 - ii. What do you dislike about the care?
 - iii. What aspect of the care, do you think, can be improved?
- Take cross-cultural differences in survey research into account.
- Validate each survey instrument in its specific setting.

5.5 Concluding remarks

This is the first study to adapt and validate a scale to measure patient satisfaction with antenatal care in South Africa. The study indicated that patients do not always endorse the care they receive, and that patient satisfaction can be measured with a survey. The study also led to quality improvement in the clinic setting in that every effort is made that the same health care provider will see each patient.

This research identified the difficulties of developing a standardised instrument to measure patient satisfaction with antenatal care and opens the way for future research into patient satisfaction with antenatal care.

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Appendix I

Item number and item content as used in Form II of the patient satisfaction questionnaire

(Ware *et al*; 1983b: 252)

1. I'm very satisfied with the medical care I receive.
2. Doctors let their patient tell them everything that the patient thinks is important.
3. Doctors ask what food patients eat and explain why certain foods are best.
4. I think you can get medical care easily even if you don't have money with you.
5. I hardly ever see the same doctor when I go for medical care.
6. Doctors are very careful to check everything when examining their patients.
7. We need more doctors in this area who specialise.
8. If more than one family member needs medical care, we have to go to different doctors.
9. Medical insurance coverage should pay for more expenses than it does.
10. I think my doctor's office has everything needed to provide complete medical care.
11. Doctors never keep their patients waiting, even for a minute.
12. Places where you can get medical care are very conveniently located.
13. Doctors act like they are doing their patients a favour by treating them.
14. The amount charged for medical care services is reasonable.
15. Doctors always tell their patients what to expect during treatment.
16. Most people receive medical care that could be better.
17. Most people are not encouraged to get a yearly exam when they go for medical care.
18. If I have a medical question, I can reach someone for help without any problem.
19. In an emergency, it's very hard to get medical care quickly.
20. I can arrange for payment of medical bills later if I'm short of money now.
21. I am happy with the coverage provided by medical insurance plans.
22. Doctors always treat their patients with respect.
23. I see the same doctor just about every time I go for medical care.
24. The amount charged for lab tests and X-rays is extremely high.
25. Doctor's don't advise patients about ways to avoid illness or injury.
26. Doctors never recommend surgery (an operation) unless there is no other way to solve the problem.
27. Doctors hurt many more people than they help.

28. Doctors hardly ever explain the patient's medical problems to him.
29. Doctors always do their best to keep the patient from worrying.
30. Doctors aren't as thorough as they should be.
31. It's hard to get an appointment for medical care right away.
32. There are enough doctors in this area that specialise.
33. Doctors always avoid unnecessary patient expenses.
34. Most people are encouraged to get a yearly exam when they go for medical care.
35. Office hours when you can get medical care are good for most people.
36. Without proof that you can pay, it's almost impossible to get admitted to the hospital.
37. People have to wait too long for emergency care.
38. Medical insurance plans pay for most medical expenses a person might have.
39. Sometimes doctors made the patient feel foolish.
40. My doctor's office lacks some things needed to provide complete medical care.
41. Doctors always explain the side effects of the medicine they prescribe.
42. There are enough hospitals in this area.
43. It takes me a long time to get to the place where I receive medical care.
44. Just about all doctors make house calls.
45. The care I have received from doctors in the last few years is just about perfect.
46. Doctors don't care if their patients worry.
47. Sometimes doctors take unnecessary risks in treatment of their patients.
48. In an emergency, you can always get medical care.
49. The fees doctors charge are too high.
50. Doctors are very thorough.
51. The medical problems I've had in the past are ignored when I seek care for a new medical problem.
52. Parking is a problem when you have to get medical care.
53. There are enough family doctors around here.
54. Doctors never expose their patients to unnecessary risk.
55. Doctors respect their patient's feelings.
56. It's cash in advance when you need medical care.
57. Doctors never look at their patient's medical records.
58. There are things about the medical care I receive that could be better.

59. When doctors are unsure of what's wrong with you, they always call in a specialist.
60. When I seek care for a new medical problem, they always check up on the problems I've had before.
61. More hospitals are needed in this area.
62. Doctors seldom explain why they order lab tests and X-rays.
63. I think the amount charged for emergency room service is reasonable.
64. Sometimes doctors miss important information that their patients give them.
65. My doctor treats everyone in my family when they need care.
66. Doctors cause some people to worry a lot because they don't explain medical problems to patients.
67. There is a big shortage of family doctors around here.
68. Sometimes doctors cause their patients unnecessary medical expenses.

Appendix II

Women's satisfaction with seven aspects of antenatal care (Tucker *et al*, 1996: 558)

1. Overall satisfaction:

Did you enjoy your care?

Yes

Usually

Not very much

Not at all

How satisfied were you with the care you received during your pregnancy?

Very satisfied

Sometimes satisfied

Very dissatisfied

2. Acceptability of style:

Were you happy with the arrangement of your antenatal visits?

Yes

No

Did you want to see a hospital doctor but didn't?

Yes

No

3. Relationship with staff:

How well did you get on with your main carer?

Very well.

Reasonable well.

Not very well.

4. Preferred level of continuity of care:

Didn't mind someone different each time.

Small group of 3-4 people.

One person but didn't mind someone different.

Same person each time.

5. Experience attending clinics:

Waiting times at health centre clinics:

Far too long.

Bit too long.

Happy with waiting time.

6. Information acquisition:

How satisfied are you with information about preparation for labour?

Very satisfied.

Satisfied.

Dissatisfied.

Very dissatisfied.

7. Service access and provision:

Did you go to antenatal classes?

Yes.

No.

Did you visit the labour rooms in hospital before you came in to have your baby?

Yes.

No opportunity.

Couldn't manage.

Not necessary.

Appendix III

Three scales used by Senf *et al* (1991; 305-306)

General and personal referent items by factor

General factor one:

- Doctors always treat their patients with respect.
- Doctors never recommend surgery (an operation) unless there is no other way to solve the problem.
- Doctors always avoid unnecessary patient expenses.
- Doctors always do their best to keep the patients from worrying.
- Sometimes doctors make the patient feel foolish.
- Doctors respect their patients' feelings.
- Doctors aren't as thorough as they should be.
- Most people receive medical care that could be better.
- Sometimes doctors take unnecessary risks in treating their patients.
- Doctors cause people to worry a lot because they don't explain medical problems to patients.
- Doctors don't advise patients about ways to avoid illness or injury.
- Doctors ask what food patients eat and explain why certain foods are best.
- Doctors hardly ever explain the patient's medical problems to them.

General factor two:

- The amount charged for medical care services is reasonable.
- The fees doctors charge are too high.

Personal factor one:

- When I need a referral to a specialist, my doctor hesitates to send me.
- It is easy for me to obtain care from a specialist.
- My doctor is very careful to check everything when examining me.
- The medical problems I've had in the past are ignored when I seek care for a new medical problem.
- My doctor hardly ever explains my medical problems to me.
- My doctor always treats me with respect.
- The care I have received from doctors in the last few years is just about perfect.
- I'm very satisfied with the medical care I receive.
- If I have a medical question, I can reach someone for help without any problem.
- There are things about the medical care I receive that could be better.

Personal factor two:

- I rarely have to wait a long time in the doctor's office.
- I am usually kept waiting a long time when I am at the doctor's office.

Personal factor three:

- My insurance company or health plan is concerned about patient's needs.

My insurance company or health plan is primarily concerned about keeping their costs low.

I am happy with the coverage provided by my medical aid insurance plan.

Medical insurance coverage should pay for more expenses than it does.

There are medical services I need which are not covered by my insurance plan.

Personal factor four:

I hardly ever see the same doctor when I go for medical care.

I see the same doctor just about every time I go for medical care.

Personal factor five:

I am sometimes ignored by the staff in my doctor's office.

The office staff treats me with respect.

Personal factor six:

It takes me a long time to get to the place where I receive medical care.

Places where I can get medical care are very conveniently located.

Items dropped after the first factor analyses:

General referent:

Doctors think their time is more valuable than their patient's time.

Doctors are very careful to check everything when examining their patients.

Doctors expect patient to follow their instructions no matter how the patients feel.

Personal referent:

In an emergency, it's very difficult for me to get medical care quickly.

Office hours when I can get medical care are good for me.

My medical insurance plan is costly for the coverage I receive.

It's hard to get an appointment for medical care right away.

Parking is a problem when I have to get medical care.

Last visit to doctor items:

How satisfied were you with your care of that visit?

- a. The amount of time your doctor spent with you.
- b. The way your doctor listened to you.
- c. The examination you were given.
- d. The laboratory tests ordered.
- e. The explanation you were given.
- f. The medication or treatment.
- g. The cost of the visit.
- h. Your improvement after the visit.

Appendix IV: Consent form

PASIËNT INLIGTING- EN TOESTEMMINGSVORM

Tevredenheid met voorgeboortesor

VERWYSINGSNOMMER:

VERKLARING DEUR PASIËNT

Ek, die ondergetekende, _____ van _____ (adres)

bevestig dat:

1. Ek uitgenooi is om deel te neem aan bogemelde navorsingsprojek wat deur die Departement van Verloskunde van die Universiteit van Stellenbosch onderneem word.

2. Die volgende aan my verduidelik is:

2.1 Doel: Bepaling van tevredenheid met voorgeboortesor.

2.2 Prosedure: 'n Vraelys om my siening van voorgeboortesor te bepaal sal aan my gestel word. Die inhoud is vertroulik en alle inligting sal naamloos gehou word.

3. Ek meegedeel is dat die inligting wat ingewin word as vertroulik behandel sal word, maar wel aangewend kan word vir referate op kongresse of ander publikasies.

4. Ek meegedeel is dat ek mag weier om deel te neem aan hierdie projek (asook dat ek enige tyd deelname daaraan kan staak) en dat sodanige weiering of staking nie op enige manier my huidige/toekomstige behandeling by hierdie of enige ander inrigting sal benadeel nie..

5. Die inligting wat hierbo weergegee is deur _____ aan my in Afrikaans verduidelik is en dat ek die taal goed magtig is. Ek is 'n geleentheid gegee om vrae te vra en al my vrae is bevredigend beantwoord.

6. Daar is geen dwang op my geplaas om toe te stem tot my deelname aan die projek nie.

7. Deelname aan die projek geen addisionele koste vir my inhou nie.

Ek stem vrywillig in om deel te neem aan bogemelde projek.

Geteken te _____ op _____ 19 _____

Pasiënt se handtekening

Getuie

of regter duimafdruk

VERKLARING DEUR OF NAMENS NAVORSER

Ek, _____ verklaar dat ek:

1. Die inligting vervat in hierdie dokument aan _____ verduidelik het;

2. Haar versoek het om vrae aan my te stel indien daar enige iets onduidelik was;

3. Dat hierdie gesprek in Afrikaans plaasgevind het en dat geen tolk gebruik is nie.

Geteken te _____ op _____ 19 _____

Appendix V

VRAELYS

Ident

Ouderdom by verlossing (jaar) _____

Graviditeit _____

Pariteit _____

Ras (Bl=2; Kl=4; As=6; S=8]

Kliniek:

1. Elsiesrivier
2. Bishop Lavis
3. Tygerberg Hospitaal
4. Ander _____

Risiko

1. Hoog: Vlak 1
2. Hoog: Vlak 2
3. Spesiale Sorg
4. Laag

SF Meting/ kliniese skatting _____

Behuising

1. Huiseienaar
2. Huurhuis
3. Huurkamer
4. Bly by ouers
5. Ander _____

DEEL EEN

Die volgende vrae is algemene inligting oor jouself

1. Wat is u huwelikstatus:

1. Getroud
2. Ongetroud, woon saam met vriend
3. Ongetroud, woon nie saam met vriend nie
4. Geskei
5. Geskei en weer getroud

2. Getal persone in huishouding

3. Watter opleiding het u ontvang?

1. Was nie op skool
- 2.. Laerskool
3. Hoërskool
4. Na standerd 10

4. Werk u tans?

1. Nee Indien Nee, gaan na vraag 5

2. Ja (Spesifiseer) _____

5. Het u voorheen gewerk?

1. Nee

2. Ja (Spesifiseer) _____

6. Wat is u huisgesin se gesamentlike inkomste per maand?

1. Minder as R 575.00

2. R575.01-R1054.99

3. R1055-R1994.99

4. R1995.00-R4399.99

5. Meer as R4400.00

7. As u nie swanger is nie, waarheen gaan u as u siek is?

	Ja (1)	Nee (2)
a. Apteek	_____	_____
b. Privaat dokter	_____	_____
c. Daghospitaal/kliniek	_____	_____
d. Hospitaal	_____	_____
e. Tradisionele medisyne	_____	_____
f. Ander (Spesifiseer) _____	_____	_____

8. Het u 'n mediese fonds?

1. Ja

2. Nee

9. Kyk u televisie?

1. Ja (ure per dag)

2. Nee (0)

10. Luister u radio?

1. Ja (ure per dag)

2. Nee (0)

DEEL TWEE

Die volgende vrae is om meer uit te vind oor u vorige swangerskap(pe)

11. Is hierdie u eerste swangerskap?

1. Ja Indien Ja, gaan na vraag 16
2. Nee Indien Nee, gaan na vraag 12

12. Het u enige van die volgende probleme in vorige swangerskap(pe) gehad?

1. Vroeggebore baba
2. Baba dood voor geboorte
3. Abnormale baba
4. Hoë bloeddruk
5. Bloeding

Ander/Kombinasie (Spesifiseer) _____

13. Watter kliniek het u bygewoon?

1. Elsiesrivier
2. Bishop Lavis
3. Tygerberg Hoë Risiko
4. Tygerberg Spesiale Sorg

Ander (Spesifiseer) _____

14. Moes u in die vorige swangerskap na 'n hospitaal gaan?

1. Ja Indien Ja, gaan na vraag 15
2. Nee Indien Nee, gaan na vraag 16

15. Hoekom is u verwys?

1. Verwysing na Hoë Risiko Kliniek
2. Verwysing na Fetale Evaluasie Kliniek (FEK)
3. Verwysing vir sonar
4. Verwysing in kraam
9. Onseker

Ander (Spesifiseer) _____

DEEL DRIE

Die volgende vrae is om meer uit te vind oor u huidige swangerskap

16. Hoe het u eerste van hierdie swangerskap bewus geraak?

1. Menstruasie oorgeslaan
2. Dokter toe gegaan
3. Baba voel beweeg
4. Borste geswel

Ander (Spesifiseer) _____

17. Waarvan hou u die meeste om swanger te wees? _____

18. Waarvan hou u die minste om swanger te wees? _____

19a) Rook u gedurende hierdie swangerskap?

1. Ja

2. Nee

19b) Indien Ja, Hoeveel? _____

19c) Dink u rook kan 'n effek op die ongebore baba hê

1. Ja Indien Ja, gaan na vraag 20

2. Nee Indien Nee, gaan na vraag 21

9. Onseker

20. Watter effek dink u kan dit hê?

1. Voordelig

2. Nadelig

3. Nie een van die twee nie

21. Gebruik u alkohol gedurende die swangerskap?

1. Ja

2. Nee

22. Is dit 'n beplande swangerskap?

1. Nee Indien Nee, gaan na vraag 23

2. Ja Indien Ja, gaan na vraag 24

9. Onseker

23. Indien Nee, is die swangerskap welkom?

1. Ja

2. Nee

9. Onseker

24. Hoe het u gevoel toe u die eerste keer besef het u is swanger?

1. Bly

2. Bang

3. Kwaad

9. Onseker

Gee redes _____

25. Hoe voel u nou?

1. Bly

2. Bang

3. Kwaad

9. Onseker

Gee redes _____

DEEL VIER

Vrae omtrent tevredenheid met die voorgeboortesorg

26. Hoe tevrede is u met die diens van die afgelope paar besoeke- moenie huiwer om eerlik te antwoord op die volgende stellings nie. U samewerking sal baie waardeer word.

	Stem beslis saam	Stem saam	Onseker	Stem nie saam	Stem beslis nie saam	
a. Ek is baie tevrede met die diens	1	2	3	4	5	<input type="checkbox"/>
b. Dit was moeilik om 'n afspraak te kry	1	2	3	4	5	<input type="checkbox"/>
c. Ontvangs/klerk is vriendelik/ hoflik	1	2	3	4	5	<input type="checkbox"/>
d. Suster het my met respek behandel	1	2	3	4	5	<input type="checkbox"/>
e. Die diens is hopeloos	1	2	3	4	5	<input type="checkbox"/>
f. Die suster het baie tyd met my spandeer	1	2	3	4	5	<input type="checkbox"/>
g. Dit is maklik om by die kliniek te kom	1	2	3	4	5	<input type="checkbox"/>
h. Ek vertrou die suster nie heeltemal nie	1	2	3	4	5	<input type="checkbox"/>
i. Die suster luister nie na my nie	1	2	3	4	5	<input type="checkbox"/>

Stem beslis saam Stem saam Onseker Stem nie saam Stem beslis nie saam

j. Die suster doen toetse sonder om te

verduidelik waarom

1

2

3

4

5

k. Die suster het haar beste gedoen om my

gerus te stel

1

2

3

4

5

l. Die suster kom baie bevoegd voor

1

2

3

4

5

m. Die suster verduidelik wat om te

verwag van die uitslae

1

2

3

4

5

n. Ek moes lank wag voordat die suster my sien

1

2

3

4

5

o. Die suster is baie deeglik

1

2

3

4

5

p. Die suster doen onnodige ondersoeke

1

2

3

4

5

Appendix VI
Antenatal card