



Dental Satisfaction Survey 1999

**Judy F Stewart
A John Spencer**

**AIHW Dental Statistics and Research Unit
The University of Adelaide**

The Australian Institute of Health and Welfare (AIHW) is Australia's national health and welfare statistics and information agency. The Institute's mission is to improve the health and well-being of Australians by informing community discussion and decision making through national leadership in developing and providing health and welfare statistics and information.

The AIHW Dental Statistics and Research Unit (DSRU) is a collaborating unit of the AIHW established in 1988 at The University of Adelaide. The DSRU aims to improve the oral health of Australians through the collection, analysis and reporting of information on oral health and access to dental care, the practice of dentistry and the dental labour force in Australia.

© Australian Institute of Health and Welfare 2002

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without written permission from The University of Adelaide. Requests and inquiries concerning reproduction and rights should be directed to the Director, AIHW Dental Statistics and Research Unit, Dental School, The University of Adelaide, South Australia 5005.

A complete list of the Institute's publications is available from the Publications Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601, or via the Institute's website (<http://www.aihw.gov.au>).

ISSN 1327-3884

Suggested citation

Stewart JF & Spencer AJ (2002). *Dental Satisfaction Survey 1999*. AIHW cat. no. DEN 98. Adelaide: AIHW Dental Statistics and Research Unit.

Acknowledgements

This research was supported by the Population Health Division of the Commonwealth Department of Health and Ageing. We wish to acknowledge Mrs Lorna Lucas for preparing the manuscript.

Any comments or information relevant to the subject matter of this report would be welcome. Correspondence should be directed to:

AIHW Dental Statistics and Research Unit
The University of Adelaide
SOUTH AUSTRALIA 5005
Tel: (08) 8303 4051
Fax: (08) 8303 4858
E-mail: aihw.dsru@adelaide.edu.au
Website: <http://www.adelaide.edu.au/socprev-dent/dsru>

Dental Satisfaction Survey 1999

Mrs Judy Stewart

Professor A John Spencer

Table of Contents

List of Tables	iii
List of Figures	v
Executive Summary.....	1
1 Introduction	3
1.1 Background	3
1.2 Satisfaction in health care evaluation.....	4
1.3 Development of the dental satisfaction questionnaire	4
1.4 Aims.....	5
1.5 Data sources and methodology.....	6
1.5.1 Sample.....	6
1.5.2 Representativeness of the sampling frame.....	6
1.5.3 Methodology	6
Respondents	6
Weighting.....	7
Missing data items.....	7
2 Data	8
2.1 The Dental satisfaction questionnaire responses	8
2.1.1 Response rates.....	8
2.1.2 Response bias	8
2.2 Characteristics of the respondents.....	12
2.2.1 Sociodemographic characteristics of respondents.....	12
2.2.2 The social impact of oral health	14
2.2.3 Financial constraint in the use of dental services	14
2.2.4 Dental visiting.....	15
2.3 The dental satisfaction questionnaire	16
2.3.1 Item analysis.....	16
2.3.2 Scale formation.....	23
2.4 Summary.....	27
3 Analysis of satisfaction scores	29
3.1 Satisfaction scores – sociodemographic characteristics.....	29
3.2 Satisfaction scores – social impact	32
3.3 Satisfaction scores – financial constraint	33
3.4 Satisfaction scores – dental visiting.....	34
3.5 Satisfaction scores – perceived need	35
3.6 Satisfaction scores – continuous variables	36
3.7 Satisfaction scores – place of last visit and health card status.....	36
3.8 Satisfaction scores – individual items	38
3.9 Multivariate analysis	40
3.10 Summary.....	43

4	Analysis of cost and facilities satisfaction scores	45
4.1	Cost-satisfaction scores – sociodemographic characteristics	45
4.2	Cost-satisfaction scores – financial constraint	48
4.3	Cost-satisfaction scores – dental visiting and perceived need	49
4.4	Multivariate analysis	50
4.5	Satisfaction with facilities and overall (31-item) satisfaction scores – sociodemographic characteristics.....	52
4.6	Summary.....	55
5	References.....	56
	Appendix A 1999 Questionnaire	A1
	Appendix B Supplementary Tables (last visit 1+ years ago)	B1

List of Tables

Table 2.1.1:	Participation in the Dental Satisfaction Survey by State/Territory – dentate persons aged 18+ whose last dental visit was within the previous 12 months – unweighted data.....	8
Table 2.1.2:	Participation in the Dental Satisfaction Survey – dentate persons aged 18+ whose last dental visit was within the previous 12 months – unweighted data.....	9
Table 2.1.3:	Odds ratios for response from a logistic regression analysis – dentate persons aged 18+ whose last dental visit was within the previous 12 months – unweighted data	11
Table 2.2.1(a):	Sociodemographic characteristics of respondents – dentate persons aged 18+ whose last dental visit was within the previous 12 months	12
Table 2.2.1(b):	Age/sex distribution of respondents – dentate persons aged 18+ whose last dental visit was within the previous 12 months.....	13
Table 2.2.2:	Frequency of responses – social impact – dentate persons aged 18+ whose last dental visit was within the previous 12 months	14
Table 2.2.3:	Frequency of responses – financial constraints – dentate persons aged 18+ whose last dental visit was within the previous 12 months	14
Table 2.2.4:	Frequency of responses – dental visiting – dentate persons aged 18+ whose last dental visit was within the previous 12 months	15
Table 2.3.2(a):	Conceptual dimensions and internal reliability of the Dental Satisfaction Questionnaire ..	23
Table 2.3.2(b):	Groupings of items by factor analysis 1999	24
Table 2.3.2(c):	The dental satisfaction sub-scales	25
Table 2.3.2(d):	Dental satisfaction sub-scale scores – dentate persons aged 18+ whose last dental visit was within the previous 12 months.....	26
Table 3.1(a):	Mean scores on satisfaction scales – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was within the previous 12 months.....	29
Table 3.1(b):	Mean scores on satisfaction scales – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was within the previous 12 months.....	31
Table 3.2:	Mean scores on satisfaction scales – social impact experienced – dentate persons aged 18+ whose last dental visit was within the previous 12 months	32
Table 3.3:	Mean scores on satisfaction scales – financial constraint – dentate persons aged 18+ whose last dental visit was within the previous 12 months.....	33
Table 3.4:	Mean scores on satisfaction scales – dental visiting – dentate persons aged 18+ whose last dental visit was within the previous 12 months	34
Table 3.5:	Mean scores on satisfaction scales – perceived need for dental visit – dentate persons aged 18+ whose last dental visit was within the previous 12 months.....	35
Table 3.6:	Correlation coefficients with continuous variables – dentate persons aged 18+ whose last dental visit was within the previous 12 months	36
Table 3.7:	Mean scores on satisfaction scales by place of last visit and health card status – dentate persons aged 18+ whose last dental visit was within the previous 12 months	37
Table 3.8:	Mean scores on individual satisfaction items by place of last visit – dentate persons aged 18+ whose last dental visit was within the previous 12 months.....	38
Table 3.9.1:	Variables with significant bivariate associations with satisfaction scores – dentate persons aged 18+ whose last dental visit was within the previous 12 months	40
Table 3.9.2:	Beta coefficients of the variables significant in least squares regression – dentate persons aged 18+ whose last dental visit was within the previous 12 months	41

Table 4.1(a):	Mean scores on cost-satisfaction scales – sociodemographic characteristics by dental insurance – dentate persons aged 18+ whose last dental visit was within the previous 12 months	45
Table 4.1(b):	Mean scores on cost-satisfaction scales – sociodemographic characteristics by dental insurance – dentate persons aged 18+ whose last dental visit was within the previous 12 months	47
Table 4.2:	Mean scores on cost-satisfaction scales – financial constraint by dental insurance – dentate persons aged 18+ whose last dental visit was within the previous 12 months ...	48
Table 4.3:	Mean scores on cost-satisfaction scales – dental visiting and perceived need by dental insurance – dentate persons aged 18+ whose last dental visit was within the previous 12 months	49
Table 4.4:	Coefficients of the variables significant in multiple analysis of variance – dentate persons aged 18+ whose last dental visit was within the previous 12 months	50
Table 4.5(a):	Mean scores on facilities satisfaction scale – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was within the previous 12 months	52
Table 4.5(b):	Mean scores on facilities satisfaction scale – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was within the previous 12 months	53

Appendix B Supplementary Tables (last visit 1+ years ago)

Table S3.1(a):	Mean scores on satisfaction scales – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was 1+ years ago	B1
Table S3.1(b):	Mean scores on satisfaction scales – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was 1+ years ago	B2
Table S3.2:	Mean scores on satisfaction scales – social impact experienced – dentate persons aged 18+ whose last dental visit was 1+ years ago	B3
Table S3.3:	Mean scores on satisfaction scales – financial constraints – dentate persons aged 18+ whose last dental visit was 1+ years ago	B4
Table S3.4:	Mean scores on satisfaction scales – dental visiting – dentate persons aged 18+ whose last dental visit was 1+ years ago.....	B5
Table S3.5:	Mean scores on satisfaction scales – perceived need for dental visit – dentate persons aged 18+ whose last dental visit was 1+ years ago	B6
Table S3.6:	Mean scores on satisfaction scales by place of last visit and health card status – dentate persons aged 18+ whose last dental visit was 1+ years ago.....	B7
Table S3.7:	Mean scores on individual satisfaction items by place of last visit – dentate persons aged 18+ whose last dental visit was 1+ years ago	B8
Table S4.1(a):	Mean scores on cost-satisfaction scales – sociodemographic characteristics by dental insurance – dentate persons aged 18+ whose last dental visit was 1+ years ago.....	B9
Table S4.1(b):	Mean scores on cost-satisfaction scales – sociodemographic characteristics by dental insurance – dentate persons aged 18+ whose last dental visit was 1+ years ago.....	B10
Table S4.2:	Mean scores on cost-satisfaction scales – financial constraints by dental insurance – dentate persons aged 18+ whose last dental visit was 1+ years ago.....	B11
Table S4.3:	Mean scores on cost-satisfaction scales – dental visiting and perceived need by dental insurance – dentate persons aged 18+ whose last dental visit was 1+ years ago.....	B11
Table S4.5(a):	Mean scores on facilities satisfaction scale – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was 1+ years ago.....	B12
Table S4.5(b):	Mean scores on facilities satisfaction scale – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was 1+ years ago.....	B13

List of Figures

Figure 2.3.1(a): Distribution of responses to individual items of the Dental Satisfaction Questionnaire - dentate persons aged 18+ whose last dental visit was within the previous 12 months Item 1 to Item 7	18
Figure 2.3.1(b): Distribution of responses to individual items of the Dental Satisfaction Questionnaire - dentate persons aged 18+ whose last dental visit was within the previous 12 months Item 8 to Item 13	19
Figure 2.3.1(c): Distribution of responses to individual items of the Dental Satisfaction Questionnaire - dentate persons aged 18+ whose last dental visit was within the previous 12 months Item 14 to Item 19	20
Figure 2.3.1(d): Distribution of responses to individual items of the Dental Satisfaction Questionnaire - dentate persons aged 18+ whose last dental visit was within the previous 12 months Item 20 to Item 25	21
Figure 2.3.1(e): Distribution of responses to individual items of the Dental Satisfaction Questionnaire - dentate persons aged 18+ whose last dental visit was within the previous 12 months Item 26 to Item 31	22

EXECUTIVE SUMMARY

The specific aims of the 1999 Dental Satisfaction Survey were to examine differences in the levels of satisfaction with dental care in a cross-sectional survey and to extend the available data for examining changes over time in the dental satisfaction levels of health cardholders, particularly those receiving public-funded dental care.

The Dental Satisfaction Survey was developed as part of the evaluation of the Commonwealth Dental Health Program, and has been conducted jointly with the National Dental Telephone Interview Survey (NDTIS) in 1994, 1995, 1996, and 1999 to monitor adult access to dental care in Australia.

Satisfaction with health care is regarded as an intermediate outcome of the health care process that reflects the extent to which the care given answers patients' needs, meets their expectations and provides an acceptable standard of service.

Three dimensions of satisfaction with dental care were initially incorporated in the questionnaire designed for this Survey: the context of the dental visit; the content of the dental visit and the outcome of the dental visit. The additional dimensions of satisfaction with the cost or affordability of dental care and satisfaction with facilities were included in 1995 and subsequent Dental Satisfaction Surveys.

The questionnaire was mailed to a sample of participants in the 1999 National Dental Telephone Interview Survey.

The 1999 survey was conducted in all States and Territories, and included a total of 2,269 dentate adults who had made a dental visit within the previous 12 months, representing a response rate of 69.0%. The data were weighted to represent the age and sex distribution of the Australian population.

Responses to the individual items of the Dental Satisfaction Survey indicated overall levels of satisfaction, although implicit dissatisfaction was expressed with cost and affordability items. The highest levels of satisfaction were expressed for the friendliness of the clinic staff, the explanation of treatment and that the surgery was well-equipped.

The lowest levels of satisfaction were recorded for cost-related items - explanation of cost of treatment, affordability of care, and feeling financially protected against dental expenses.

There was significantly greater satisfaction with all aspects of the dental visit i.e. the context, the content, the outcome and overall satisfaction, among older age groups. Significantly lower levels of satisfaction with all aspects of the dental visit were evident where a language other than English was spoken at home, where the respondents reported poorer oral health or financial constraints, problem-oriented visiting patterns, and by those respondents whose last visit was to a public clinic.

The Dental Satisfaction Surveys had been directed towards an assumed difference between the satisfaction of health cardholders and non-cardholders. While this difference was significant, even larger differences existed by place of last visit.

The greatest variation in satisfaction between those respondents who had visited a public clinic and those who visited a private practice was on the context scale, which addressed issues of clinic location, waiting time and ease of obtaining appointments.

The highest mean satisfaction score on the cost/affordability scale occurred among cardholders who last attended a public clinic.

Lower levels of satisfaction with the affordability of dental care were associated with younger age groups, cardholders who last received care at a private practice at their own expense, being born overseas, lack of dental insurance, and the financial constraints of accessing dental care.

The cross-sectional nature of this Survey has shown that there were differences in satisfaction levels between groups at the time of the Survey and has generated a base for examining changes in satisfaction levels over time by comparing surveys collected at different periods which may be related to changes in provision of dental care to health cardholders.

A valuable indicator of the performance of public sector delivery of dental care will be the investigation, in future years, of changes in satisfaction levels. As changes occur in co-payment policies and/or the dental care made available in the public sector (in the States and Territories), or health cardholders receive subsidised dental care in the private sector, satisfaction levels are likely to change.

Satisfaction levels changed during the period 1994–96, as expected, as increased dental care was made available to eligible cardholders both in the public sector and subsidised dental care in the private sector. Substantial increases occurred, which, while not significant at the sub-scale level, a number of individual items showed significant gains in satisfaction among cardholders who received public-funded care.

Since 1994–96, satisfaction levels have fallen in the general population, and particularly among cardholders who last received care at a private practice. Satisfaction levels among cardholders who last received public-funded dental care remained low, but did not decline significantly across the period.

Further surveys at regular intervals would be desirable to monitor future changes in dental satisfaction in the Australian population, particularly among cardholders who are eligible for public-funded dental care.

1 INTRODUCTION

The purpose of this report is to present the findings of the 1999 Dental Satisfaction Survey. The report will be largely technical in nature, and in general will be similar in form to the 1994¹ and 1995² reports. Where possible, data will be presented in the same format as it was in previous years. It is not the aim of this report to compare and evaluate changes in dental satisfaction since the 1994–96 surveys. A research report more evaluative in nature will focus on comparisons between the 1999 data and the earlier surveys.

This survey was conducted from October 1999 to February 2000 by the Australian Institute of Health and Welfare's Dental Statistics and Research Unit (DSRU) and was conducted jointly with the 1999 National Dental Telephone Interview Survey which collected basic features of oral health and dental care within the Australian population. The survey provides information on the dimensions of satisfaction with recent dental care, linked with the broader parameters of dental health and access to services.

1.1 BACKGROUND

The specific aims of the 1999 Dental Satisfaction Survey were to examine differences in the levels of satisfaction with dental care in a cross-sectional survey and to extend the available data for examining changes over time in the dental satisfaction levels of health cardholders, particularly those receiving public-funded dental care.

Less favourable levels of dental health and access to dental care have been identified for certain sub-groups in Australia. As part of the Commonwealth Department of Health and Aged Care's Population Health Information Initiatives, DSRU is undertaking investigations of the access to dental care among special target groups.

The Dental Satisfaction Survey was developed as part of the evaluation of the Commonwealth Dental Health Program, and has been conducted jointly with the National Dental Telephone Interview Survey in 1994, 1995, 1996, and 1999 to monitor adult access to dental care in Australia.

Periodic telephone interview and mailed surveys of a general population sample obtain up-to-date data on access to dental care, self-assessed dental health status, present dental health needs, use of dental services and preventive behaviours, satisfaction with dental services, and experience of and attitudes to dentistry.

Together, these surveys aimed to establish the reasons for seeking care, the characteristics of those people who received care, the oral problems they had at the time they sought care, the types of care they received and their perceptions of the process of care. This information allowed detailed evaluation of outcomes, including conversion of emergency patients to general dental care patients, increases in restorative care in preference to extraction, decreases in untreated disease and improvements in oral health.

This present report on the Dental Satisfaction Survey 1999 is the third in a series of technical reports on the Dental Satisfaction Surveys conducted by the DSRU. Two earlier reports have been completed:

- Dental Satisfaction Survey 1994; and
- Dental Satisfaction Survey 1995.

1.2 SATISFACTION IN HEALTH CARE EVALUATION

Consumer satisfaction with health care is an issue addressed in current methodologies for evaluating health care programs. In this context, satisfaction can be considered an intermediate outcome of the health care process that reflects the extent to which the care given answers patients' needs, meets their expectations and provides an acceptable standard of service.³

There have been strong indications suggesting that care that is less satisfactory to the consumer is less effective.³ Associations between dissatisfaction with the outcome of medical care and non-compliance with instructions, delay in seeking care, and poor understanding and retention of instructions have been demonstrated. Each of these behaviours could be detrimental to improved health status.

Patient satisfaction is a subjective assessment and, by inviting consumers to express their opinions on their health care experience, studies of satisfaction may provide a measure of the success of a health care program in terms of the perceived needs, the expectations and the health care experience of the consumer.

The investigation of patient satisfaction as a measure in health care was addressed in the 1970s by Hulka et al.⁴ and by Ware et al.⁵ Hulka et al.'s Scale for the Measurement of Satisfaction with Medical Care was designed to obtain information on the utilization and assessment of medical care and to identify unmet needs. The Patient Satisfaction Questionnaire (PSQ) of Ware et al. was designed to measure satisfaction as an outcome of health care, to provide information about the sources of satisfaction and dissatisfaction and to be an adjunct in studies of patient behaviour.

The issues addressed in this early research on patient satisfaction are still pertinent and subsequent work by these and other researchers^{3, 6, 7, 8} have improved, refined and expanded the scope of measures of patient satisfaction.

1.3 DEVELOPMENT OF THE DENTAL SATISFACTION QUESTIONNAIRE

The Dental Satisfaction Questionnaire was developed with the aims of examining differences in satisfaction between participants of cross-sectional population surveys, and of examining changes over time in satisfaction among health cardholders participating in the Commonwealth Dental Health Program.

Both these aims required the use of a relatively sensitive measure of dental satisfaction. Such a measure should be applied with an orientation towards group profiles, e.g. means, rather than satisfaction at an individual level. This also implied that the focus was on broad sub-groups of persons, e.g. health cardholders, age-groups or ethnic groups.

The content and style of the Dental Satisfaction Questionnaire (Appendix A) reflects a conceptual approach that defines satisfaction as the reaction to salient aspects of the context, content (process) and outcome (result) of the health care experience.⁹

Within these three broad dimensions, further sub-sets of satisfaction were developed. These sub-sets were based on the various satisfaction scales in the health care literature, and are most closely aligned to the dimensions of satisfaction proposed by Pasco and Attkinsson in the Evaluation Ranking Scale.¹⁰ The items within these sub-sets cover:

- location, travel and appointments
- waiting time - for appointment and service
- helpfulness of clinic staff
- friendliness of the dental professional
- thoroughness of procedures
- concordance with services wanted
- preferred dental professional seen
- explanation and communication about services
- success in terms of problems solved and improved oral health
- speed of results
- value of services
- usefulness of advice received.

Satisfaction with costs and facilities, dimensions included in the majority of satisfaction scales, were not included in the 1994 Dental Satisfaction Questionnaire. Neither was considered by the Dental Statistics and Research Unit to be central to the evaluation of the Commonwealth Dental Health Program. However, the frequency of comments relating to costs and facilities received in the 1994 Survey indicated that these dimensions were of importance to consumers, and satisfaction scales addressing costs and facilities were introduced in the 1995 Dental Satisfaction Questionnaire.

The statements used in this satisfaction questionnaire were based on the content of existing satisfaction scales: the Patient Satisfaction Questionnaire (PSQIII)³; the Scale for the Measurement of Satisfaction with Medical Care⁶; the Client Satisfaction Questionnaire⁷ and the Dental Satisfaction Index⁸.

The items on the questionnaire were presented as statements pertaining to the personal experience of the respondents at their last dental visit or series of visits. This direct or personalised approach was preferred over the indirect approach or generalised approach, which has been criticised as measuring more generalised attitudes and even life satisfaction.³

The Dental Statistics and Research Unit evaluates satisfaction using attitudinal scales. Thus, responses to the statements were captured on a continuum from negative to positive. The participants were asked to indicate the extent of their agreement or disagreement with the statements on a five point Likert-type scale with one indicating strong disagreement and five indicating strong agreement. This approach to the scoring of satisfaction is the predominant approach within the health satisfaction literature.

Both positive and negative statements were used to minimise the effect of a response set.

1.4 AIMS

The aims of the Dental Satisfaction Survey were to:

1. examine the differences in satisfaction primarily between non-cardholders and health cardholders who were participants in the National Dental Telephone Interview Survey of the corresponding year; and
2. enable examination of changes over time in the satisfaction among health cardholders with respect to changes in the provision of public-funded dental care.

1.5 DATA SOURCES AND METHODOLOGY

1.5.1 Sample

The sampling frame used in the Dental Satisfaction Survey was participants in the 1999 National Dental Telephone Interview Survey who were 18 years of age and over.

For the purpose of comparison with results from the 1994, 1995 and 1996 Dental Satisfaction Surveys, only data from dentate respondents who were 18 years of age and over and had visited a dental professional within the last 12 months are presented in the main part of the 1999 Dental Satisfaction Survey Report.

Earlier surveys had approached only dentate subjects who had visited a dental professional within the last 12 months; a random sample of one in four participants who did not hold a health card, and all holders of health cards – a sampling methodology used to balance the number of persons with and without health cards. Results from the 1999 Dental Satisfaction Survey pertaining to respondents whose last dental visit was more than 1 year ago are presented in Appendix B.

1.5.2 Representativeness of the sampling frame

The 1999 National Dental Telephone Interview Survey, carried out during August to mid-November 1999, interviewed individuals from households randomly selected from five metropolitan sites (New South Wales, Victoria, Queensland, South Australia and Western Australia) and eight non-metropolitan sites which included the rest of each State (New South Wales, Victoria, Queensland, South Australia and Western Australia), or the entire State/Territory (Tasmania, the Australian Capital Territory and the Northern Territory); thirteen sites overall, with sample sizes determined to yield at least 600 participants per site. The individual selected from households with more than one occupant was chosen by random allocation of the persons aged 5 years and over to have the last birthday or the next birthday.

Participation per site in the NDTIS varied from 45.1 per cent to 66.6 per cent, with an overall response rate of 56.6 per cent. The rate of refusals was 37.8 per cent, and 5.6 per cent of households could not be contacted.

6,093 persons aged 18 years or over [5,353 dentate; 740 edentulous adults] were available for selection for inclusion in the Dental Satisfaction Survey.

1.5.3 Methodology

Respondents

Potential respondents in this study were the 3,084 participants in the 1994 National Dental Telephone Interview Survey, eligible for selection because they were 18 years of age or more and had made a dental visit within the last 12 months. The participants were informed at the time of their telephone interview that they had been chosen for a further questionnaire, and their address was checked with the details already held in the database. A questionnaire was mailed to the address, usually within a week of the telephone interview. After two weeks, a reminder card was sent to those persons from whom a completed response had not been received. A second and third approach, consisting of a letter and a replacement questionnaire, were subsequently made at two-weekly intervals.

The 1999 Dental Satisfaction Survey differed from previous Surveys in that it was incorporated in a larger survey, comprising the first 31 questions in the 135 items in the 1999 Dental Health and Lifestyle Factors Survey. Because of the complexity of the full questionnaire, responses to the survey were expected to be biased toward participants who had higher education levels, and a lower participation rate from persons who speak a language other than English at home was anticipated.

Weighting

Data were weighted by household size (the number of persons aged 5 years or more) and by geographic sampling region to account for differing sampling probabilities due to the sampling design. The data were also post-stratified and weighted by age and sex to ensure that the weighted data more accurately represents the Australian population for each region as estimated by the Australian Bureau of Statistics. All results presented are weighted unless specified otherwise.

Missing data items

Missing data items in the 1999 Dental Satisfaction Survey occurred with similar frequency and were treated in the same way as in the 1995 and 1996 surveys. Over 9% of respondents had one or more items with no response recorded. Within sub-scales between 3% and 10% of respondents had missing values, which represented up to 20% of groups such as those persons aged 65+ years or who speak a language other than English at home.

Ordinary Least Square Regressions were carried out for each of the 31 individual items, and substitution values were calculated based on the value of the most closely correlated item within the same sub-scale, modified by age, sex and whether the respondent had made their last dental visit at a public clinic or private practice.

The substitution value for each missing data item was calculated using the regression equation:

$$Y = \beta_0 + \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3 + \dots$$

where Y refers to the computed substitution value, β_0 , β_1 , β_2 , β_3 , etc. refer to the regression co-efficients and χ_1 , χ_2 , χ_3 and χ_4 refer to sex, age, place of last visit and item respectively.

2 DATA

2.1 THE DENTAL SATISFACTION QUESTIONNAIRE RESPONSES

2.1.1 Response rates

Overall, the 1999 Dental Satisfaction Survey resulted in a total of 3,969 questionnaires received from the 6,093 adult respondents to the 1999 National Dental Telephone Interview Survey, a response rate of 65.1%. Results pertaining to those respondents whose last dental visit was more than 1 year ago are presented in Appendix B.

The response rate from the 3,084 dentate adults who had made a dental visit in the previous 12 months was 69.0%. [The possible number of participants was adjusted to 3,020 by the return of 64 undeliverable questionnaires; completed surveys were received from 2,083 respondents].

The response by State and Territory is shown in Table 2.1.1. Response from South Australia was highest at 71.2%, while the Northern Territory had the lowest at 62.7%.

Table 2.1.1: Participation in the Dental Satisfaction Survey by State/Territory
- dentate persons aged 18+ whose last dental visit was within the previous 12 months
- unweighted data

	NSW	Vic	Qld	SA	WA	Tas	ACT	NT	Australia
Questionnaires mailed	493	452	504	479	469	206	276	205	3,084
Questionnaires returned	324	301	341	334	325	144	188	126	2,083
Undeliverable mail	10	6	6	6	9	1	3	4	45
Unavailable	1	6	2	4	2	0	4	0	19
Refused	61	54	58	52	40	22	31	35	353
Response rate (%)	67.2	68.4	68.8	71.2	71.0	70.2	69.9	62.7	69.0

2.1.2 Response bias

Sociodemographic data were available on all persons selected for the Survey, and the characteristics of respondents and non-respondents were investigated to determine whether the response rate varied between different sociodemographic groups. Quantitative methods for studying satisfaction with dental care have been criticised for reflecting the values of the providers more than the patients, and having a response bias toward higher socioeconomic groups. Data from the 1999 National Dental Telephone Interview Survey were used to investigate potential sources of response bias.

The response rates are presented in Table 2.1.2. It was found that significant differences in response rate (Chi-square, $p < 0.05$) occurred by age-group, sex, income, government concession card status, language spoken at home, employment status, education, dental insurance status, place of last visit, reason for last dental visit, and usual reason for dental visiting.

The response rate of younger age-groups was considerably lower than that of older persons, with the lowest rate 55.3 % for 18–24 year olds, increasing across age-groups to 73.4% for the 45–64 years and 73.2% for the 65+ years age-group. The response rate for males was significantly lower than that for females, 66.3% compared with 70.8%. There was a gradient across income groups, with the lowest response rate from the group

whose annual household income was less than \$12,000 and the highest recorded among the \$50,000+ group.

Table 2.1.2: Participation in the Dental Satisfaction Survey
 - dentate persons aged 18+ whose last dental visit was within the previous 12 months
 - unweighted data

	Count	%		Count	%
Age group			Employed		
18–24 years	136	55.3 *	Full-time	906	68.6 *
25–44 years	737	65.5	Part-time	336	68.3
45–64 years	835	73.4	Retired	416	73.6
65+ years	375	73.2	Not employed	296	64.8
Sex			Education		
Male	805	66.3 *	Primary	31	52.5 *
Female	1,278	70.8	Some secondary	321	69.5
Annual household income			Complete secondary	277	67.1
<\$12,000	196	66.0 *	Some vocational	97	66.0
\$12–20,000	236	68.6	Complete vocational	478	66.7
\$20–30,000	269	68.8	Some tertiary	131	65.2
\$30–40,000	277	69.4	Complete tertiary	609	75.0
\$40–50,000	248	70.9	Other	116	69.9
\$50,000+	733	74.5	Have private dental insurance		
Health cardholder			Yes	1,022	73.1 *
Yes	414	65.2 *	No	1,044	65.4
No	1,667	70.1	Place of last visit		
Location			Card public	155	64.0 *
Capital city	1,233	67.9	Card private	247	66.0
Other major urban	137	68.5	No card private	1,577	70.4
Rural major	269	71.7	Last visit for problem in <12 months		
Rural other	293	69.8	No	935	71.0 *
Remote	108	71.1	Yes	1,141	67.5
Language spoken at home			Usual reason for visit		
English	1,936	70.7 *	Check-up	1,384	71.2 *
Other	147	51.9	Problem	690	64.8
Country of birth			Avoided or delayed visit due to cost		
Australia	1,612	69.4	Yes	445	66.6
Other	471	67.8	No	1,632	69.6
			Total	2,083	69.0

* Significance Chi-square p<0.05

Health cardholders had a significantly lower response rate than non-cardholders.

There was no significant difference in response between residential locations, and varied between 67.9 for capital cities and 71.7% for rural other locations.

There was a significantly lower response from persons who speak a language other than English at home, 51.9% cf. 70.7% among those whose home language was English. However country of birth (Australia or other) showed no significant difference in response rate.

Significant differences occurred by employment status, with retired persons having the highest response, 73.6%, and non-employed persons the lowest rate, 64.8%.

Hypothesised bias due to differences in education, annual household income, and language spoken at home occurred; education and language showed the strongest effects.

The greatest variation in response rate occurred by education, with a low response among persons who had primary education only and the highest rate among those who had completed tertiary education (52.5% cf. 75.0%).

Insurance status was shown to be a significant factor, with 73.1% of those insured responding compared to 65.4% of uninsured.

All respondents had made a dental visit within the previous 12 months; a lower response was received from those whose last visit was for a problem. The response rate among respondents who usually visit for a check-up was higher than those who usually visit in response to a problem. The differences in response rate by both of these characteristics pertaining to reasons for dental visiting were significant.

A variety of characteristics based on dental visiting patterns were also tested for differences in response rate. These characteristics included whether the last dental visit had been to a private practice or to a public clinic, whether the last dental visit was for a problem or a check-up, the individual's usual reason for seeking dental care, and whether the person had avoided or delayed a dental visit within the last 12 months because of the cost.

Non-cardholders whose last visit was to a private practice had a significantly higher response rate than cardholders who last received care at a public clinic and cardholders who visited a private practice, 70.4% cf. 64.0% and 66.0% respectively. Significantly lower response rates occurred among persons who reported problem-oriented visiting patterns.

In order to assess which factors were associated independently with response to the Survey, a logistic regression analysis was undertaken to determine which factors may have an effect on response after allowing for the effect of all other factors. The characteristics associated with the differences in response rate are presented in Table 2.1.3.

The strongest association with response was language spoken at home, followed by age group. Respondents that speak English were 2.25 times the odds to respond than those whose home language was other than English. All other age-groups were more likely to respond than the 18-24 years age-group, which was the reference group. The 25-44 years age-group had 1.51 times the odds and the 45-64 years and the 65+ years age groups had over 2 times the odds of responding.

Females had 1.22 times the odds as males, and respondents who usually visit for a check-up had 1.26 times the odds of responding. Insured persons were more likely to respond than non-insured persons, with odds of 1.30.

Table 2.1.3: Odds ratios for response from a logistic regression analysis
 - dentate persons aged 18+ whose last dental visit was within the previous 12 months
 - unweighted data

Characteristic	Odds ratios
Age-group	
[18–24 years]	[Reference group]
25–44 years	1.51 *
45–64 years	2.15 *
65+ years	2.20 *
Sex	
[Male]	[Reference group]
Female	1.22 *
Language at home	
[Other]	[Reference group]
English	2.25 *
Usual Visit	
[Problem]	[Reference group]
Check-up	1.26 *
Insurance status	
[Non-insured]	[Reference group]
Insured	1.30 *

* Significance $p < 0.05$

2.2 CHARACTERISTICS OF THE RESPONDENTS

All respondents to the Dental Satisfaction Survey had been participants in the 1999 National Telephone Interview Survey; thus, data collected during both Surveys could be matched. Data on sociodemographic characteristics, the social impact of dental problems, financial constraint in the uptake of dental services, the history of dental visits and oral status were used to describe the characteristics of respondents to the Dental Satisfaction Survey and to determine differences in dental satisfaction between groups.

2.2.1 Sociodemographic characteristics of respondents

Table 2.2.1(a) shows the percentage of respondents in each of several sociodemographic groupings. It should be restated that these respondents had visited a dentist in the last 12 months and were over the age of 18 years.

Table 2.2.1(a): Sociodemographic characteristics of respondents
- dentate persons aged 18+ whose last dental visit was within the previous 12 months

	%		%
Age group		Language spoken at home	
18–24 years	14.4	English	91.2
25–44 years	40.7	Other	8.8
45–64 years	30.9	Country of birth	
65+ years	14.1	Australia	77.4
Sex		Other	22.6
Male	46.6	Employed	
Female	53.4	Full-time	48.2
Annual household income		Part-time	19.5
<\$12,000	6.2	Retired	16.4
\$12–20,000	10.5	Not employed	15.9
\$20–30,000	10.9	Education	
\$30–40,000	13.3	Primary	1.2
\$40–50,000	13.3	Some secondary	12.5
\$50,000+	45.7	Secondary	12.5
Health cardholder		Some tertiary	8.8
Yes	17.0	Tertiary	29.9
No	83.0	Some vocational	5.0
Location		Vocational	24.4
Capital city	70.7	Other	5.8
Other major	7.2	Have private dental insurance	
Rural major	9.7	Yes	46.2
Rural other	10.6	No	53.8
Remote	1.8	Total	100.0

Just over 40% of respondents were aged 25–44 years and almost one-third aged 45–64 years. The youngest age-group, which spanned only seven years, and the oldest age-group each made up just over 14% of the sample. There was an over-representation of females, 53.4% compared to males, 46.6%. Approximately a quarter of respondents had annual household incomes of less than \$30,000, while 45.7% had incomes of \$50,000 or greater.

Less than 20% of respondents held a government concession card (health cardholder), reflecting the lower response rate from cardholders.

Just over 70% of the respondents resided in capital cities, while less than 2% were from remote areas. Almost one third were not employed, comprising similar proportions of retirees and non-employed individuals. Less than 9% came from homes where English was not the customary language. The most frequent education level was completed tertiary, 29.9%, followed by completed vocational, 24.4%. Just over 1% had primary education only; this group was combined with those with incomplete secondary education in some of the subsequent analyses.

Private dental insurance cover was held by 46.2% of respondents.

The age/sex distribution of respondents is shown in Table 2.2.1(b).

The age/sex distribution of males and females was statistically different, with the imbalance occurring in the 18–24 years and the 25–44 years age groups. The largest percentage of both males and females was in the 25–44 years age group.

Table 2.2.1(b): Age/sex distribution of respondents
- dentate persons aged 18+ whose last dental visit was within the previous 12 months

Age group*	Male	Female	All
	%	%	%
18–24 years	17.5	11.7	14.4
25–44 years	37.3	43.6	40.7
45–64 years	32.1	29.8	30.9
65+ years	13.0	14.9	14.1

* Significance Chi-square $p < 0.05$

2.2.2 The social impact of oral health

The social impact of oral health among respondents to the Dental Satisfaction Survey was estimated using three questions from OHIP.¹¹ The responses to questions on the prevalence over the previous 12 months of toothache, of feeling uncomfortable with the appearance of teeth, mouth or dentures, and of avoiding some foods are shown in Table 2.2.2.

Table 2.2.2: Frequency of responses – social impact
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Frequency of toothache %	Uncomfortable with appearance %	Avoid some foods %
Very often	2.5	5.1	3.3
Often	3.8	4.7	3.9
Sometimes	9.1	12.2	12.9
Hardly ever	33.2	21.4	18.2
Never	51.4	56.6	61.7

A small percentage of respondents (15.4%) reported that they had sometimes or more often experienced toothache in the last 12 months, more than 20% expressed dissatisfaction with the appearance of their teeth, and 20.1% reported avoiding some foods because of problems with the teeth, mouth or dentures.

2.2.3 Financial constraint in the use of dental services

The financial difficulties encountered in the use of dental services were estimated from four questions: the difficulty in paying a \$100 dental bill at most times of the year; the financial burden experienced due to dental visits in the last 12 months; and whether during the last 12 months the cost of dental care had caused avoidance or delay in seeking care or had prevented treatment that had been recommended or that the respondent wanted.

The frequency of responses to these questions is shown on Table 2.2.3.

Table 2.2.3: Frequency of responses – financial constraints
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	%		%
Difficulty in paying a \$100 dental bill		Financial burden of dental visits	
None	48.1	None	36.2
Hardly any	20.1	Hardly any	23.0
A little	22.9	A little	28.0
A lot	8.8	A large	12.8
Avoided or delayed visit due to cost		Cost prevented recommended treatment	
Yes	20.2	Yes	17.4
No	79.8	No	82.6

Over 36% of respondents reported that their dental visits were not a financial burden and 48.1% reported that they would have no difficulty in paying a \$100 dental bill at most times of the year. Dental visits had caused a large financial burden to 12.8% of respondents, and 8.8% reported they would have a lot of difficulty in paying a \$100 dental bill.

Avoiding visits because of the cost and cost preventing treatment were experienced by 20.2% and 17.4% of respondents respectively.

2.2.4 Dental visiting

The place of the last visit, the reason for that visit, the usual reason for visiting, the usual number of visits per year and the need for a visit at the time of the Survey are shown in Table 2.2.4.

Table 2.2.4: Frequency of responses – dental visiting
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	%		%
Place of last visit		Type of dental visit †	
Public	8.2	Check-up	48.7
Private	89.0	Treatment	40.8
Other	2.8	Both	10.5
Reason for last visit		Usual time between visits	
Problem	53.7	>=2 per year	38.0
Check-up	46.3	1 per year	39.5
		1 per 2 years	11.0
		<1 per 2 years	11.5
Usual reason for visit		Place of last visit and health card status	
Check-up	66.3	Cardholder – public	6.0
Problem	33.7	Cardholder – private	10.9
		Non-cardholder – private	83.1
Need dental visit			
Yes	38.5		
No	61.5		

† Sub-set of (Need a dental visit = Yes)

Although 17.0% of respondents held a government concession card that would have entitled them to public dental care, the majority of respondents in the Survey had visited a private dental practice for their last dental visit. Only 8.2% of respondents had made their last dental visit at a public dental clinic or dental hospital.

More than half of the respondents (53.7%) reported that a dental problem was the reason for their last visit, although only 33.7% reported a problem as the usual reason for a dental visit.

The need for a dental visit was reported by 38.5% of respondents (All respondents had attended a dental clinic or dental practice in the previous 12 months). Of those who reported that they needed a dental visit, almost one half perceived the need for a check-up and the remainder reported that they needed treatment or both check-up and treatment.

More than 75% of respondents reported that they usually make one or more dental visits per year, with those who visit less frequently divided evenly between those who visit once in two years and those for whom dental visits are more than two years apart.

Consideration of respondents by place of last visit (public or private) and government concession card status shows that only 6% were eligible cardholders who last received public-funded care. Non-cardholders whose last visit was to a private practice made up 83.1% of the sample, while the remaining 10.9% were cardholders who attended a private practice at their own expense.

2.3 THE DENTAL SATISFACTION QUESTIONNAIRE

The 1999 Dental Satisfaction Survey included all 24 original items from the 1994 Survey, as well as the cost and facilities items (a further 7 items) which had been included in the 1995 and 1996 surveys. The additional items (four of which addressed the issue of cost and affordability of dental care) were included in response to comments offered most frequently in the 1994 Dental Satisfaction Survey.

2.3.1 Item analysis

The responses to the 31 individual items of the Dental Satisfaction Questionnaire are shown in Figures 2.3.1(a) to (d). The bars represent the percentage of respondents scoring each of the five values of the scale and the asterisk represents the mean score for that item. The value of the mean score is read from the axis at the top of the figure.

Participants recorded their level of agreement or disagreement with each statement on a scale of one to five, with one indicating strong disagreement and five indicating strong agreement. Both positive and negative statements were used, thus it was necessary to reverse the response values of negative statements so that all favourable responses were reflected by higher scores.

Those items marked with a “+” at the right of the item label for each bar have been corrected for direction of response, e.g. a value of one on item one has been converted to a value of five; thus, strong disagreement on distance being a difficulty became strong agreement on distance not being a difficulty, the response indicative of greater satisfaction with that aspect of the dental visit.

On 9 of the 31 items more than 50% of respondents indicated strong agreement (indicating satisfaction) with the statement. Of the remaining 22 items, between 40% and 50% reported strong agreement on 11 items, 6 items were 30–40%, and 5 items were less than 30%. Those items for which less than 30% of respondents indicated strong agreement with the statement [all included for the first time in 1995] were:

Item 5, attractive waiting room	20.2
Item 14, explanation of cost	25.1
Item 18, avoided unnecessary expenses	15.7
Item 27, affordability	26.3
Item 31, financial protection	14.0%.

Items on which more than 60% strongly agreed pertained to item 9, the friendliness of the staff (63.5%); item 10, the dental professional was not impersonal (62.6%); and item 12, seeing the same dental professional each visit (61.0%).

The percentage of respondents expressing strong disagreement (indicating dissatisfaction) with any statement was less than 10% on 28 of the 31 items. The percentage expressing strong disagreement on the remaining three items [all included for the first time in 1995] were:

Item 14, explanation of cost	16.1;
Item 27, affordability	11.2;
Item 31, financial protection	23.6.

The mean scores, shown as asterisk (*) on the figures, ranged from 2.87 to 4.55.

The lowest mean scores were recorded for:

Item 5, attractive waiting room	(mean 3.60, st.dev. 1.04);
Item 14, explanation of cost of treatment	(mean 3.22, st.dev. 1.42);
Item 17, explanation of treatment options	(mean 3.70, st.dev. 1.19);
Item 18, avoid unnecessary costs	(mean 3.24, st.dev. 1.15);
Item 27, affordability of care	(mean 3.45, st.dev. 1.31); and
Item 31, financially protected	(mean 2.87, st.dev. 1.37).

Other mean scores between 3.70 and 4.00 were recorded for item 4, prompt visit, (mean, 3.86 st.dev. 1.22); item 6, waiting time at the appointment, (mean, 3.99 st.dev. 1.05); item 29, the care could not have been better, (mean, 3.85 st.dev. 1.14); and item 30, good advice being given, (mean, 3.97 st.dev. 1.05). Although these scores are referred to as the lowest mean scores, it should be noted that in general they express a lower level of satisfaction with that aspect of the dental visit rather than overt dissatisfaction. If a score of 3.00 is regarded as the neutral point of the scale, showing neither agreement or disagreement with the statements, item 31, financially protected with a mean score of 2.87 does express dissatisfaction, and items 14 and 18, explanation of cost of treatment (mean 3.22) and item 18, avoid unnecessary costs, (mean 3.24) are barely above the neutral point.

The highest mean scores were recorded for:

Item 7, well-equipped dental surgery	(mean 4.45, st.dev. 0.70);
Item 9, the friendliness of the staff	(mean 4.55, st.dev. 0.70); and
Item 13, explained treatment need	(mean 4.43, st.dev. 0.83).

Figure 2.3.1(a): Distribution of responses to individual items of the Dental Satisfaction Questionnaire - dentate persons aged 18+ whose last dental visit was within the previous 12 months

Item 1 to Item 7

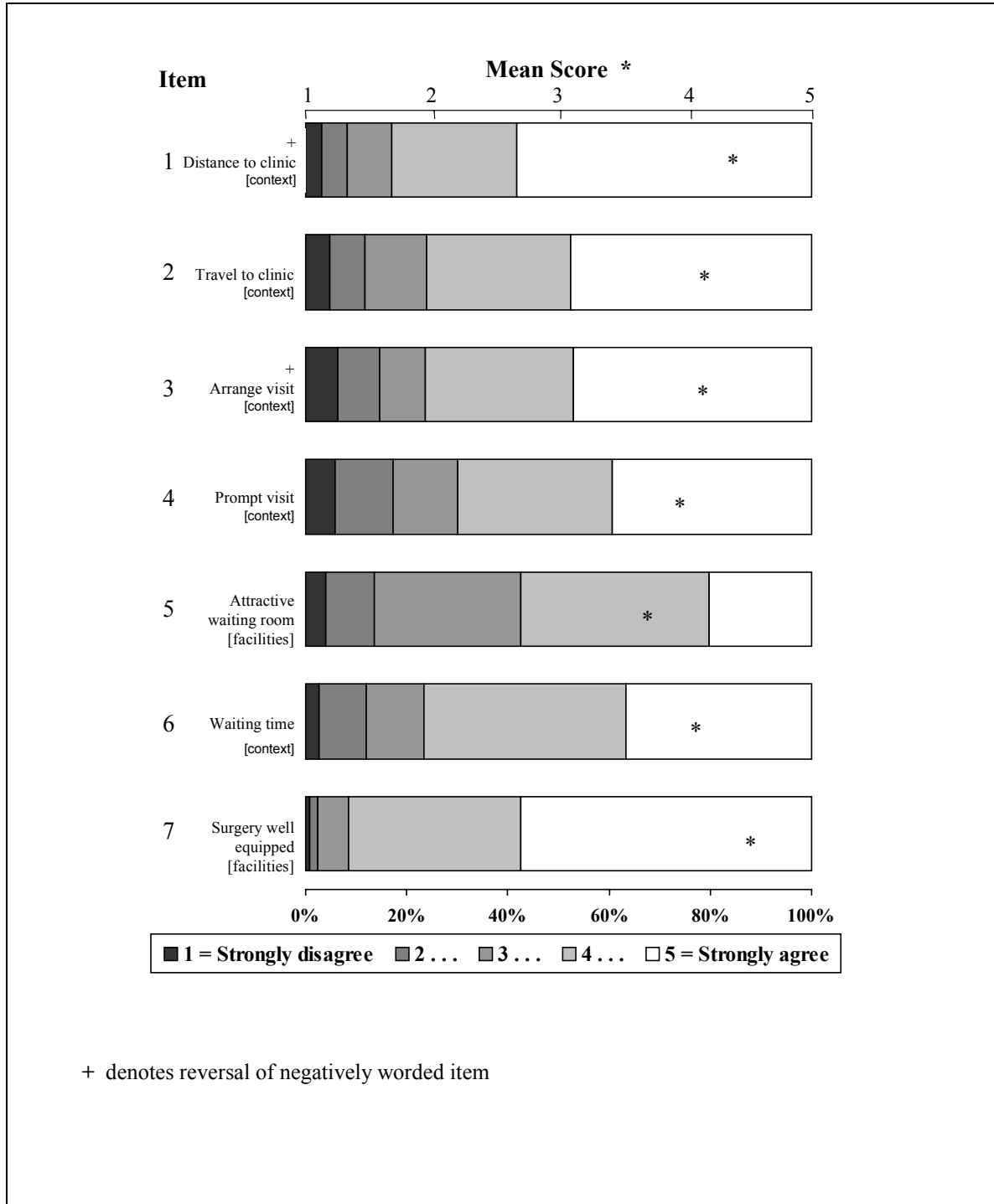


Figure 2.3.1(b): Distribution of responses to individual items of the Dental Satisfaction Questionnaire
 - dentate persons aged 18+ whose last dental visit was within the previous 12 months

Item 8 to Item 13

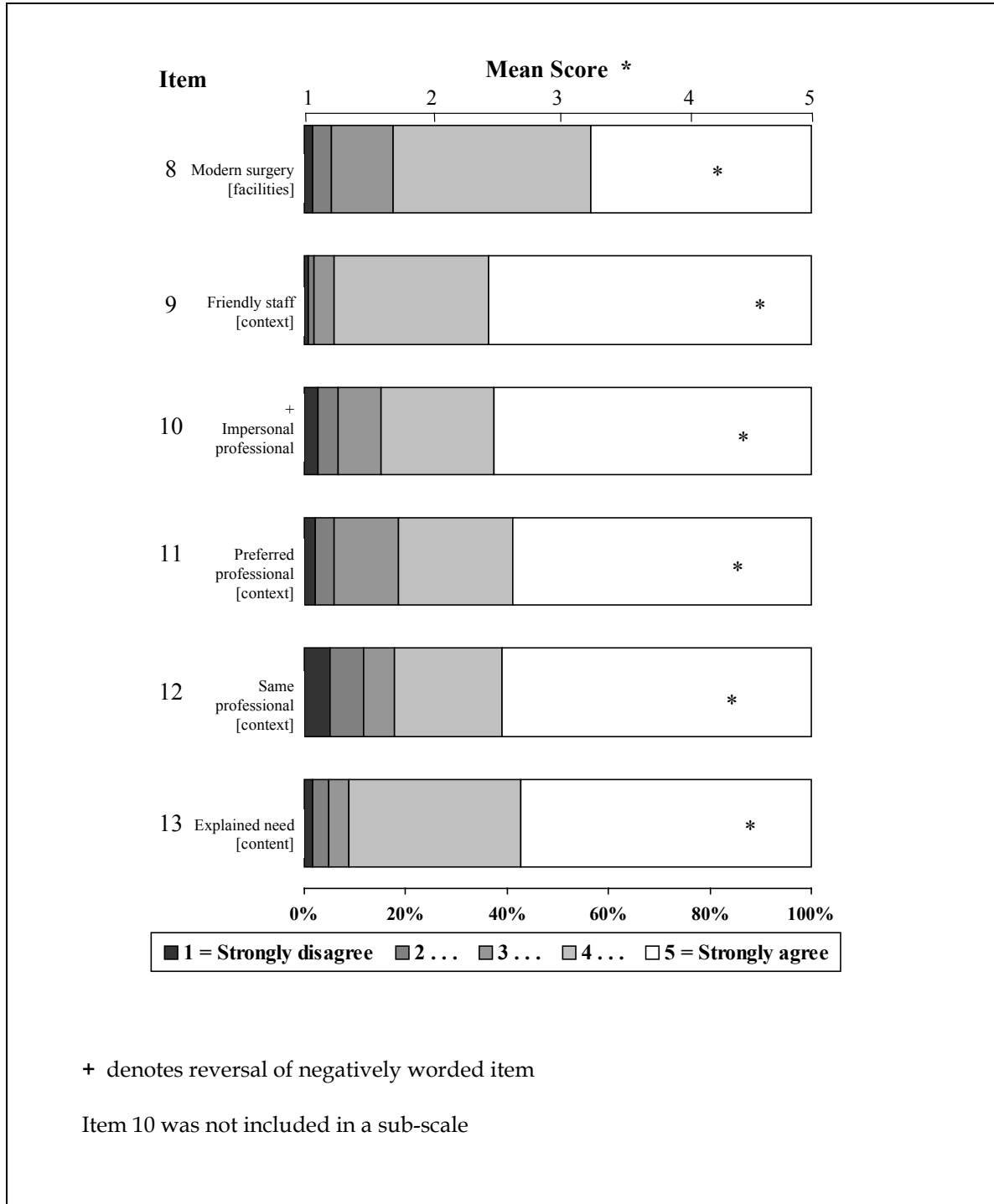


Figure 2.3.1(c): Distribution of responses to individual items of the Dental Satisfaction Questionnaire
 - dentate persons aged 18+ whose last dental visit was within the previous 12 months

Item 14 to Item 19

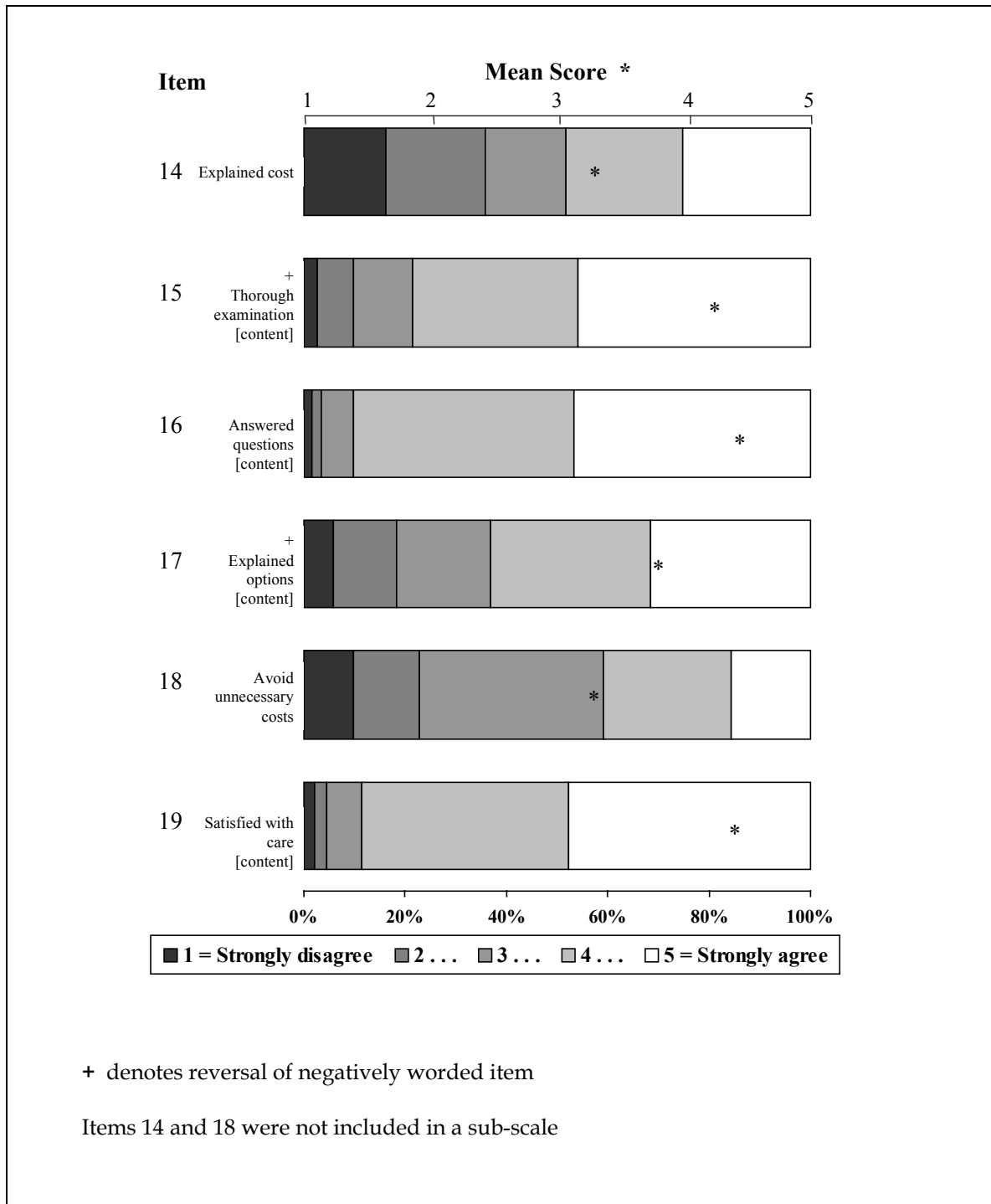


Figure 2.3.1(d): Distribution of responses to individual items of the Dental Satisfaction Questionnaire
 - dentate persons aged 18+ whose last dental visit was within the previous 12 months

Item 20 to Item 25

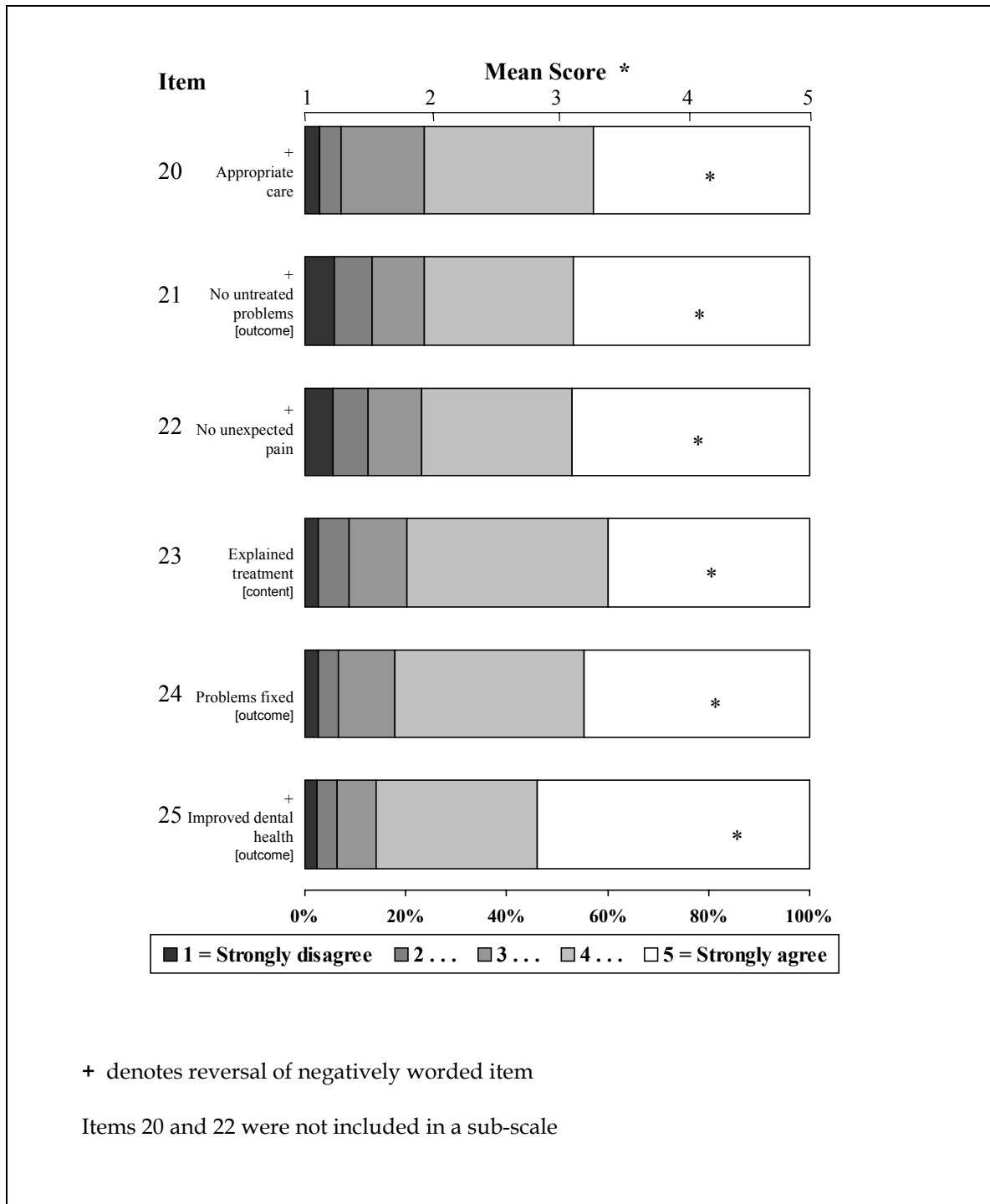
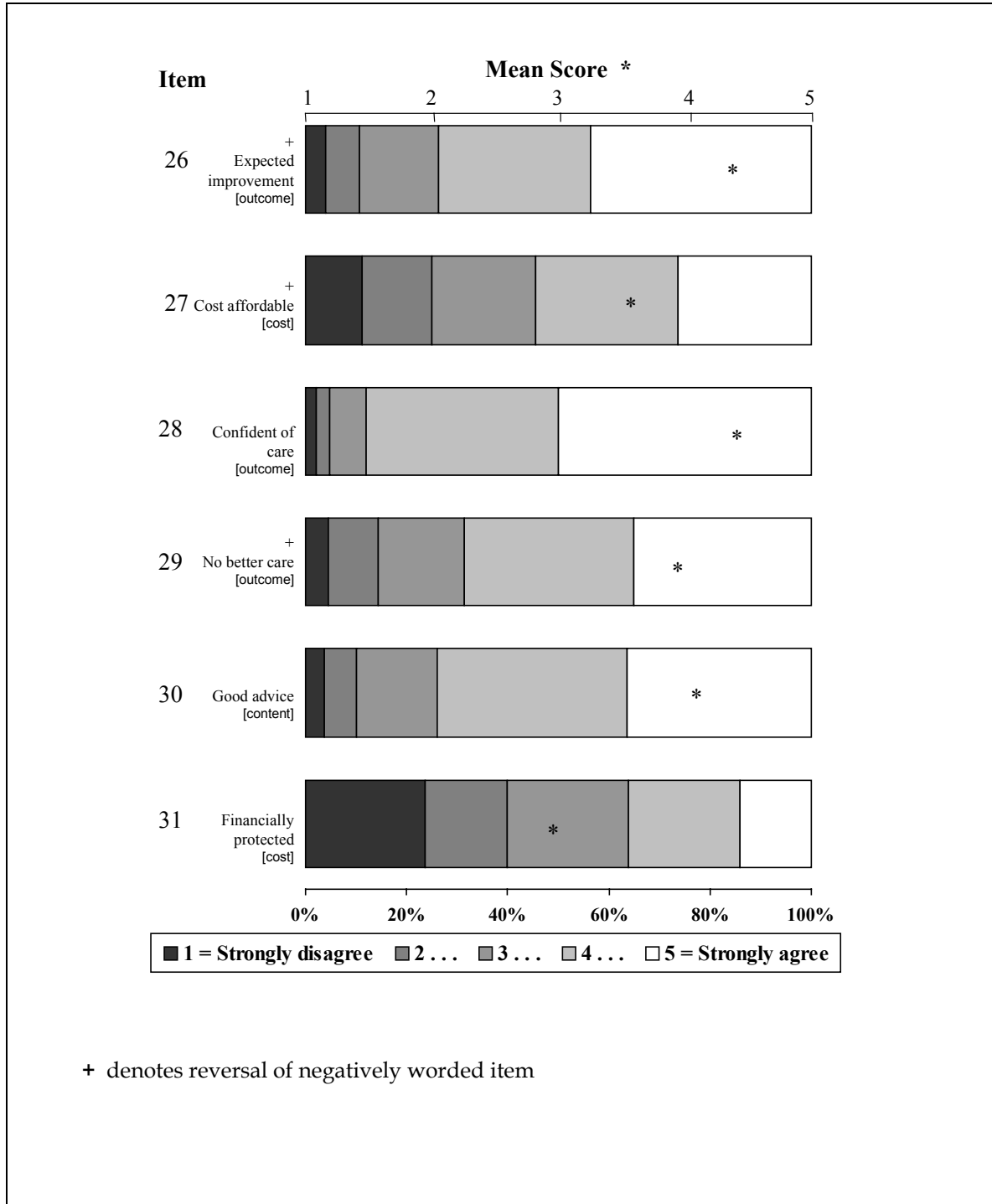


Figure 2.3.1(e): Distribution of responses to individual items of the Dental Satisfaction Questionnaire - dentate persons aged 18+ whose last dental visit was within the previous 12 months

Item 26 to Item 31



2.3.2 Scale formation

The 1994 Dental Satisfaction Survey consisting of 24 items had been designed to capture three conceptual dimensions (or sub-scales) of dental satisfaction: context, content and outcome. The items within each of these conceptual dimensions were further divided into sub-sets of related items. Clinic location, appointments, waiting time, clinic staff and the dental professional were incorporated in the context of the dental visit or course of visits. Communication and services received were sub-sets of content while service results, speed, value and the usefulness of information were components of outcome.

The 1999 Dental Satisfaction Survey consisted of 31 items. Two additional sub-sets, facilities and cost, were incorporated into the 1995 Dental Satisfaction Survey; however, the original grouping of items established in 1994 was preserved to allow for direct comparisons between the mean scores for scales and sub-scales for each year.

The individual items on the questionnaire which were included in each of these sub-sets are listed in Table 2.3.2(a).

Table 2.3.2(a): Conceptual dimensions and internal reliability of the Dental Satisfaction Questionnaire

Dimension	Items	Cronbach α
Context		
Clinic location/appointments	1,2,3	0.60
Waiting time	4,6	0.41
Dental clinic/surgery	5,7,8	0.73
Clinic staff	9	
Dental professional	10,11,12	0.69
Content		
Communication	13, 15,16,17,23	0.76
Services received	19, 20,21, 22	0.52
Outcome		
Service results	24, 25	0.78
Speed	26	
Value	28, 29	0.65
Usefulness of information	30	
Cost		
Communication and justification	14, 18	0.27
Affordability	27, 31	0.60

The internal reliability of these dimensions, i.e. that the items grouped within the dimension measured the same concept, was tested using the Cronbach α test of inter-item reliability.

The Cronbach α values of the dimensions are shown on Table 2.3.2(a). The values for the ten sub-sets that contained more than one item ranged from 0.27 to 0.78.

Factor analysis was used to explore other dimensions which may have been inherent in the questionnaire and to confirm the dimensions hypothesized.

When the analyses for the Dental Satisfaction Survey were originally developed in 1994, five factors emerged from the factor analysis that corresponded to:

- Factor 1 communication
- Factor 2 services received/service results
- Factor 3 waiting time/clinic staff/ the dental professional

Factor 4	conceptually unrelated items
Factor 5	clinic location/appointments

Factor analysis of the 1999 Dental Satisfaction Survey (31 items) resulted in very similar factors to the 1995 factor analysis, when the extra 7 items relating to cost and facilities were introduced. Eight factors emerged from the factor analysis, compared to seven in 1995. The factors corresponded to:

Factor 1	Services received and service results
Factor 2	Communication
Factor 3	Waiting time/facilities/clinic staff
Factor 4	Dental professional
Factor 5	Clinic location/appointments
Factor 6	Affordability
Factor 7	Appropriate care
Factor 8	Arrange visits
	Conceptually unrelated items

The individual items within each factor grouping and the inter-item reliability of these factor items are shown in Table 2.3.2(b). Cronbach α values ranged from 0.29 on appropriate care to 0.81 on dental professional and 0.80 on services received/service results.

Table 2.3.2(b): Groupings of items by factor analysis 1999

Scale	Items	Cronbach α
Services received and service results	21, 22, 24, 25, 26, 28, 29	0.80
Communication	13, 14, 16, 17, 19, 23	0.75
Waiting time/facilities/clinic staff	5, 6, 7, 8, 9,	0.77
Dental professional	11, 12,	0.81
Clinic location/appointments	1, 2	0.67
Affordability	27, 31	0.60
Appropriate care	18, 20	0.29
Arrange visits	3, 4	0.55
Conceptually unrelated items	10, 15, 30	0.51

The eigenvalues of the eight factors which emerged were 8.46, 2.00, 1.66, 1.57, 1.29, 1.12, 1.07 and 1.03 with percentages of variance of 27.3%, 6.5%, 5.3%, 5.1%, 4.2%, 3.6%, 3.4% and 3.3% respectively. These values, when plotted as a scree plot, indicated that the items were best fitted to three factors.

The factors which emerged (both in 1995 and retested in 1999) were very similar to the five factors obtained in the 1994 Dental Satisfaction Survey, indicating that the addition of 7 new items had not materially altered the conceptual groupings. Since the 1995 Dental Satisfaction Survey the 24 original items have been grouped into the three factors developed in 1994, in order to allow for direct comparisons to be made between the subsequent surveys. Two additional factors, facilities and affordability, included in the analyses since 1995, consist of five of the 7 new items.

The 8 factors from the 1999 factor analysis fell into the existing sub-scales. The groupings of items were achieved by minor modifications to factor 1 (outcome scale), and factor 2 (content scale). Factors three, four, five and eight, which were conceptually

related, were amalgamated; the items regarding facilities (items 5, 7 & 8) were removed from the resulting context scale to create the facilities conceptual group. Factor 6 corresponded to the cost scale (1995). Factor seven, with the low reliability score of 0.29, and the unrelated items were not relevant and would be omitted if scales were being developed at this stage.

Item 22, which dealt with pain, had not loaded in the 1994 analysis, and was therefore dropped from the outcome scale. Item 14, which dealt with explanation of cost of treatment, loaded on the communication scale, but as it was not part of the original 1994 survey was dropped from the content scale.

In the original factor analysis in 1994, item 21, on dental problems not being treated (services received), loaded on the outcome scale rather than the content scale. Item 30, the usefulness of advice given on dental care, loaded on the content scale as a communication item rather than the outcome scale. These designations have been retained, although as shown in Table 2.3.2(b) item 21 loaded on the outcome scale, and item 30 did not load.

Item 15, on thoroughness of examination (services received), and item 30, both of which did not load in 1999, were included in the content scale as established in 1994. The 24 original items from 1994 Survey made up the satisfaction sub-scale, and the 31 items formed the overall (31-item) satisfaction scale. The items included finally in each sub-scale and their reliability are shown in Table 2.3.2(c).

Factor seven, consisting of item 18, which dealt with unnecessary treatment costs, and item 20, on over- or under-servicing (services received), were conceptually unrelated items and were omitted.

Five items were excluded from the sub-scales:

- Item 10, impersonal attitude of the dental professional;
- Item 14, explanation of cost of treatment;
- Item 18, unnecessary treatment costs;
- Item 20, on over- or under-servicing; and
- Item 22, which dealt with pain.

Table 2.3.2(c): The dental satisfaction sub-scales

Scale	Items	Cronbach α
Context	1, 2, 3, 4, 6, 9, 11, 12	0.72
Content	13, 15, 16, 17, 19, 23, 30	0.80
Outcome	21, 24, 25, 26, 28, 29	0.81
Satisfaction†	1-4, 6, 9, 11-13, 15-17, 19-26, 28-30	0.88
Cost	27, 31	0.60
Facilities	5, 7, 8	0.73
Overall satisfaction††	1-31	0.90

† 24-item scale as per 1994

†† 31-item scale as per 1995

The inter-item reliability (Cronbach α values) of the scales developed in 1994 in the initial Dental Satisfaction Survey were context, 0.72, content, 0.80, outcome, 0.81, and satisfaction, 0.88. The additional scales, cost and facilities, had inter-item reliability of 0.60 and 0.73 respectively, somewhat lower than the content and outcome scales, but still acceptable values. The inter-item reliability of all 31 items of the questionnaire was

tested and the overall (31-item) satisfaction scale produced a high Cronbach α value of 0.90.

These statistical analyses indicated that it was reasonable to continue to group the items of the questionnaire into three sub-scales which appeared to capture the context, the content, and the outcome of the dental visit; as well as the satisfaction (24 items) with the dental visit.

The additional sub-scales of cost and facilities, established concurrently with the analysis of the expanded 31-item Survey, appeared to capture the dimensions of affordability and assessment of the dental facilities.

Scores for each of the six sub-scales and a score for the overall (31-item) satisfaction scale were calculated by the summation of items. These scores were then scaled so that the range for each sub-scale and the overall scale was one to five, with one expressing strong disagreement with that dimension of dental satisfaction and five expressing strong agreement.

The mean score, the standard deviation, the minimum and the maximum scores for each of the six sub-scales and the overall (31-item) satisfaction scale are shown in Table 2.3.2(d). Mean scores ranged from 3.16 on the cost scale to 4.17 on the context scale. Satisfaction with outcome, cost and facilities encompassed all scores from one, strong dissatisfaction to five, strong satisfaction while the minimum scores for the other scales were context, 1.63, content 1.29, satisfaction (24 item scale) 1.92, and overall (31-item) satisfaction, 1.74. Each of the six sub-scales and the overall satisfaction scale included the maximum score of five, *ie* there were respondents who recorded strong agreement with all items forming the scale.

Table 2.3.2(d): Dental satisfaction sub-scale scores
- dentate persons aged 18+ whose last dental visit was within the previous 12 months

Scale	Mean	St.dev.	Minimum	Maximum	Percentile		
					25	50	75
Context (as per 1994)	4.17	0.62	1.63	5.00	3.75	4.25	4.63
Content (as per 1994)	4.13	0.66	1.29	5.00	3.71	4.14	4.71
Outcome (as per 1994)	4.12	0.74	1.00	5.00	3.67	4.17	4.83
Satisfaction† (as per 1994)	4.15	0.54	1.92	5.00	3.83	4.21	4.58
Cost (as per 1995)	3.16	1.13	1.00	5.00	2.50	3.00	4.00
Facilities (as per 1995)	4.08	0.73	1.00	5.00	3.67	4.00	4.67
Overall satisfaction††	4.02	0.51	1.74	5.00	3.68	4.06	4.42

† 24-item scale as per 1994

†† 31-item scale as per 1995

The percentiles in Table 2.3.2(d) show the score at each of the 25th, 50th and 75th percentiles. Several of the scale scores were close to the maximum score of five by the 75th percentile, and, apart from the cost scale, above four by the 50th percentile. It is clear that the scale scores (as with the individual item scores) indicated varying levels of satisfaction with aspects of the dental visit rather than overt dissatisfaction. The scale score for cost, or affordability of dental care, the area in which lowest levels of satisfaction were recorded, was the exception, where the 50th percentile score was three, indicating neither satisfaction nor dissatisfaction.

2.4 SUMMARY

- The response rate to the Dental Satisfaction Survey was 69.0%.
- There were significant differences in the response rate of persons from different sociodemographic groups.
- Response rates increased significantly with increased age.
- Significantly higher response rates occurred among females, non-cardholders rather than cardholders, those with dental insurance, and persons who usually visit for check-ups rather than for dental problems.
- There was an under-representation of persons who speak a language other than English in the home. Given the length and complexity of the mailed survey, this result is understandable. There appeared to be a response bias toward higher socioeconomic groups; respondents with a higher level of education were more likely to complete the survey.
- Logistic regression analysis showed that older age groups, females, English as the home language, dental insurance, and usually visiting for a dental check-up were independently associated with higher response rates.
- Between 15% and 20% of respondents reported experiencing some degree of social impact from dental problems.
- Over 30% of the respondents reported some level of financial difficulties accessing dental care, 20.2% stated that they had avoided visits because of cost and 17.4% reported that cost had prevented recommended treatment.
- Over 88% of respondents had visited a private practice for their last visit.
- Although 17.0% of respondents had a health card entitling them to public sector care, only 6.0% had last received public care.
- While every respondent had made a dental visit in the previous 12 months, almost 40% reported that they needed a dental visit.
- Although the majority of respondents reported a problem as the reason for their last visit, only 33.7% stated a problem as their usual reason for a dental visit.
- The highest mean satisfaction scores on the 31 items of the questionnaire were recorded for the friendliness of the staff, explanation of treatment and well-equipped surgery.
- The lowest mean satisfaction scores were recorded for cost items – explanation of cost of treatment, affordability of care, and feeling financially protected against dental expenses.
- Low mean scores were also recorded for prompt visit, attractive waiting room, explanation of treatment options, and the care could not have been better.

- The 24 items corresponding to the 1994 questionnaire consisted of three sub-scales which incorporated the three conceptualised dimensions of satisfaction: context, content and outcome of dental visit. Dental satisfaction related to the mean score for all 24 items.
- The seven items introduced in 1995 were incorporated into sub-scales of facilities and cost (affordability of dental care).
- The reliability of the six sub-scales (the dimensions of context, content, outcome, satisfaction, facilities and cost) and the overall 31-item satisfaction scale was high.
- The mean scores on five of the six sub-scales and the overall satisfaction scale indicated varying levels of satisfaction with dental visits rather than overt dissatisfaction. Satisfaction with the affordability of dental care was lower than the other mean scores.

3 ANALYSIS OF SATISFACTION SCORES

Using data from the 1999 National Dental Telephone Interview Survey, described in Section 2.2 and the satisfaction scores established in Section 2.3, variations in dental satisfaction levels were investigated.

3.1 SATISFACTION SCORES – SOCIODEMOGRAPHIC CHARACTERISTICS

Tables 3.1(a) and (b) show the differences in mean scores of the context, content and outcome sub-scales and the dental visit satisfaction scale by the sociodemographic variables examined. Those variables marked with an asterisk have statistically significant differences in mean satisfaction scores on ANOVA with $p < 0.05$.

Table 3.1(a): Mean scores on satisfaction scales – sociodemographic characteristics
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context		Content		Outcome		Satisfaction	
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)
Sex								
Male	4.15	(0.63)	4.10	(0.66) *	4.13	(0.72)	4.14	(0.54)
Female	4.19	(0.61)	4.16	(0.66)	4.11	(0.76)	4.16	(0.54)
Age group								
18–24 years	4.00	(0.65) *	3.88	(0.64) *	4.07	(0.62) *	3.99	(0.50) *
25–44 years	4.15	(0.63)	4.11	(0.65)	4.07	(0.77)	4.12	(0.56)
45–64 years	4.25	(0.57)	4.23	(0.63)	4.18	(0.74)	4.23	(0.52)
65+ years	4.26	(0.61)	4.23	(0.67)	4.20	(0.73)	4.23	(0.53)
Language spoken at home								
English	4.20	(0.60) *	4.15	(0.65) *	4.13	(0.73) *	4.17	(0.53) *
Other	3.93	(0.76)	3.96	(0.69)	3.98	(0.80)	3.94	(0.60)
Country of birth								
Australia	4.21	(0.60) *	4.14	(0.65)	4.15	(0.72) *	4.17	(0.53) *
Other	4.07	(0.67)	4.12	(0.67)	4.03	(0.78)	4.08	(0.56)
Location								
Capital city	4.21	(0.61) *	4.16	(0.63) *	4.14	(0.73)	4.18	(0.53) *
Other major urban	4.09	(0.60)	4.05	(0.65)	4.10	(0.76)	4.07	(0.57)
Rural major	4.16	(0.53)	3.98	(0.78)	4.00	(0.72)	4.07	(0.54)
Rural other	4.04	(0.70)	4.17	(0.69)	4.10	(0.80)	4.12	(0.60)
Remote	3.96	(0.61)	3.85	(0.69)	3.96	(0.85)	3.93	(0.58)
Total	4.17	(0.62)	4.13	(0.66)	4.12	(0.74)	4.15	(0.54)

* Significance $p < 0.05$ ANOVA

Statistically significant differences between males and females existed only in the content satisfaction scale, with females recording a higher score than males. There were statistically significant differences in the mean scores on all four measures of satisfaction by age-group, with satisfaction scores increasing across age group. The greatest range of mean scores occurred by age on the content scale (which addressed communication issues), with the age-group 18–24 years registering a mean score of 3.88 compared to a mean score of 4.23 for the age-groups 45–64 and 65+ years.

There were highly significant differences in the mean scores for all measures of satisfaction between those persons who did and did not speak English at home. Those who spoke a language other than English at home were less satisfied with all

dimensions of the dental visit than those who spoke English as their home language. Overseas-born respondents had significantly lower mean scores than Australian-born individuals on the context, outcome, and satisfaction (24-item) scales.

Statistically significant variations in mean scores by location occurred on the context, content and satisfaction (24-item) scales. Respondents living in capital cities had the highest mean scores, while those living in remote areas had the lowest satisfaction scores on all satisfaction scales.

Differences in mean scores by State/Territory were statistically significant (Table 3.1(b)) only on the context scale. On all scales, the highest levels of satisfaction were registered in SA and the lowest in Tasmania.

There were statistically significant differences between those employed and those not employed in the mean satisfaction scores on all four measures. Lower levels of satisfaction were recorded by those respondents who were either not employed or were employed part-time. Those who were in full-time employment or who were retired recorded the highest scores on all four measures.

Differences in mean scores by annual household income were statistically significant on all four measures of satisfaction. Across income groups there was a gradient with the lowest income group recording the lowest scores, increasing steadily through to the highest income group. The greatest variation between lowest and highest scores among all sociodemographic characteristics occurred on the context and outcome scales for income; 3.87 cf. 4.23 and 3.82 cf. 4.18 for incomes of less than \$12,000 and \$50,000+ respectively.

The relationship of satisfaction with education level was significant on all satisfaction scales although difficult to interpret. The highest education level, completed tertiary, was associated with the highest mean scores on three of the four scales. However, it appeared that incomplete post-secondary education was associated with lower satisfaction scores. Incomplete tertiary education was linked with the lowest age group, which recorded the lowest mean scores of all age groups.

The mean satisfaction scores for health cardholders were significantly lower than non-cardholders on all four satisfaction scales.

Those who had private dental insurance had statistically higher satisfaction scores than those without insurance on all four measures of satisfaction.

Table 3.1(b): Mean scores on satisfaction scales – sociodemographic characteristics
 – dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context		Content		Outcome		Satisfaction	
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)
State/Territory								
New South Wales	4.16	(0.65) *	4.11	(0.67)	4.14	(0.72)	4.14	(0.53)
Victoria	4.24	(0.58)	4.12	(0.64)	4.10	(0.76)	4.16	(0.53)
Queensland	4.11	(0.63)	4.14	(0.68)	4.06	(0.77)	4.11	(0.58)
South Australia	4.27	(0.58)	4.27	(0.69)	4.21	(0.79)	4.25	(0.57)
Western Australia	4.14	(0.59)	4.12	(0.57)	4.18	(0.66)	4.16	(0.48)
Tasmania	4.08	(0.57)	3.92	(0.64)	3.93	(0.69)	4.01	(0.52)
Australian Capital Territory	4.27	(0.56)	4.18	(0.74)	4.16	(0.78)	4.22	(0.58)
Northern Territory	4.10	(0.67)	4.10	(0.73)	4.09	(0.78)	4.10	(0.62)
Employed								
Full-time	4.23	(0.57) *	4.16	(0.63) *	4.21	(0.66) *	4.21	(0.50) *
Part-time	4.13	(0.62)	4.12	(0.65)	4.04	(0.75)	4.09	(0.54)
Retired	4.24	(0.61)	4.20	(0.67)	4.16	(0.75)	4.20	(0.53)
Not employed	4.08	(0.69)	4.02	(0.70)	4.02	(0.82)	4.06	(0.58)
Annual household income								
<\$12,000	3.87	(0.74) *	3.91	(0.86) *	3.82	(0.89) *	3.87	(0.67) *
\$12–20,000	4.13	(0.72)	4.11	(0.79)	3.92	(0.88)	4.07	(0.66)
\$20–30,000	4.19	(0.57)	4.08	(0.62)	4.05	(0.76)	4.12	(0.52)
\$30–40,000	4.17	(0.59)	4.13	(0.60)	4.08	(0.74)	4.13	(0.53)
\$40–50,000	4.18	(0.63)	4.14	(0.69)	4.18	(0.74)	4.16	(0.58)
\$50,000+	4.23	(0.56)	4.17	(0.61)	4.18	(0.67)	4.20	(0.48)
Education								
Primary	4.12	(0.64) *	4.20	(0.60) *	4.01	(0.85) *	4.15	(0.50) *
Some secondary	4.23	(0.61)	4.23	(0.65)	4.16	(0.76)	4.22	(0.55)
Secondary	4.09	(0.65)	4.06	(0.68)	4.02	(0.81)	4.07	(0.59)
Some vocational	4.11	(0.55)	3.89	(0.87)	4.07	(0.67)	4.03	(0.55)
Vocational	4.19	(0.59)	4.14	(0.64)	4.16	(0.70)	4.17	(0.52)
Some tertiary	3.99	(0.67)	3.96	(0.60)	4.03	(0.65)	4.01	(0.49)
Tertiary	4.24	(0.61)	4.18	(0.64)	4.17	(0.74)	4.21	(0.54)
Other	4.10	(0.60)	4.13	(0.61)	3.99	(0.81)	4.07	(0.50)
Health cardholder								
Yes	3.96	(0.68) *	3.94	(0.78) *	3.89	(0.81) *	3.95	(0.60) *
No	4.22	(0.59)	4.17	(0.62)	4.17	(0.71)	4.19	(0.52)
Have private dental insurance								
Yes	4.25	(0.58) *	4.22	(0.59) *	4.21	(0.68) *	4.23	(0.49) *
No	4.10	(0.64)	4.06	(0.71)	4.06	(0.77)	4.09	(0.57)
Total	4.17	(0.62)	4.13	(0.66)	4.12	(0.74)	4.15	(0.54)

* Significance p<0.05 ANOVA

3.2 SATISFACTION SCORES – SOCIAL IMPACT

Table 3.2 shows the mean scores on the satisfaction scales by the social impact variables. The prevalence over the previous 12 months of toothache, of feeling uncomfortable with the appearance of teeth, mouth or dentures, and of avoiding some foods was statistically significant for all scales. For all measures of social impact, those individuals who had experienced a problem very often, often or sometimes were far less satisfied with all aspects of dental care received within the last year than those who reported that such problems had hardly ever or never occurred.

Table 3.2: Mean scores on satisfaction scales – social impact experienced
 – dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context		Content		Outcome		Satisfaction	
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)
Toothache								
Yes	3.99	(0.65) *	3.95	(0.70) *	3.71	(0.90) *	3.90	(0.56) *
No	4.21	(0.60)	4.16	(0.65)	4.20	(0.68)	4.20	(0.53)
Uncomfortable with appearance								
Yes	4.03	(0.65) *	3.94	(0.73) *	3.83	(0.83) *	3.96	(0.59) *
No	4.22	(0.60)	4.19	(0.63)	4.20	(0.69)	4.20	(0.51)
Avoid some foods								
Yes	4.04	(0.60) *	3.88	(0.78) *	3.77	(0.83) *	3.93	(0.58) *
No	4.21	(0.62)	4.19	(0.61)	4.21	(0.69)	4.21	(0.52)
Total	4.17	(0.62)	4.13	(0.66)	4.12	(0.74)	4.15	(0.54)

Yes ≡ Very often, often and sometimes

No ≡ Hardly ever and never

* Significance $p < 0.05$ ANOVA

Differences in mean scores were greatest where an individual had reported experiencing toothache within the previous 12 months. The most extreme of these differences occurred on the outcome scale, with the scores 3.71 cf. 4.20.

3.3 SATISFACTION SCORES – FINANCIAL CONSTRAINT

The mean scores on the satisfaction scales by the financial constraint variables are presented in Table 3.3. The differences in mean scores were statistically significant for all satisfaction scales for all measures of financial constraint.

The financial constraint variables included:

- avoiding or delaying a dental visit in the previous 12 months because of the cost,
- cost preventing the respondent from having recommended treatment in the previous 12 months,
- the extent to which dental care within the previous 12 months had been a financial burden, and
- the level of difficulty they would have with a \$100 dental bill at most times of the year.

Lower mean satisfaction scores were characteristic of all groups who experienced any of the measures of financial hardship investigated.

Table 3.3: Mean scores on satisfaction scales – financial constraint
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context		Content		Outcome		Satisfaction	
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)
Avoided visit because of cost								
Yes	3.98	(0.68) *	3.87	(0.71) *	3.74	(0.84) *	3.89	(0.58) *
No	4.22	(0.59)	4.20	(0.63)	4.22	(0.68)	4.22	(0.51)
Cost prevented treatment								
Yes	3.96	(0.69) *	3.88	(0.77) *	3.64	(0.88) *	3.86	(0.61) *
No	4.23	(0.58)	4.18	(0.62)	4.22	(0.66)	4.21	(0.50)
Financial burden[†]								
Yes	4.07	(0.65) *	3.91	(0.72) *	3.69	(0.91) *	3.92	(0.59) *
No	4.20	(0.60)	4.17	(0.64)	4.18	(0.69)	4.19	(0.52)
Difficulty in paying \$100 dental bill[†]								
Yes	3.89	(0.69) *	3.82	(0.76) *	3.62	(0.88) *	3.80	(0.62) *
No	4.20	(0.60)	4.16	(0.64)	4.17	(0.70)	4.18	(0.52)
Total	4.17	(0.62)	4.13	(0.66)	4.12	(0.74)	4.15	(0.54)

[†] Yes ≡ A lot

No ≡ None, hardly any, a little

* Significance p<0.05 ANOVA

3.4 SATISFACTION SCORES – DENTAL VISITING

Associations between the satisfaction scales and variables concerned with dental visits are shown in Table 3.4.

Those respondents whose last visit was to a public clinic had lower mean scores on all four satisfaction scales than those respondents whose last visit was to a private practice. These differences were all statistically significant. The greatest differences in mean scores occurred on the outcome scale with a mean score of 3.63 for public visits and a mean of 4.16 for private visits.

Mean scores were significantly lower among respondents whose last visit was prompted by a problem than among those whose last visit was not problem-oriented. This also applied to the usual reason for a dental visit, with lower scores recorded by respondents who reported that they usually visit for a problem rather than attendance for a check-up.

Table 3.4: Mean scores on satisfaction scales – dental visiting
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context		Content		Outcome		Satisfaction	
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)
Place of last visit								
Public	3.65	(0.66) *	3.80	(0.83) *	3.63	(0.90) *	3.72	(0.62) *
Private	4.23	(0.59)	4.17	(0.63)	4.16	(0.72)	4.19	(0.52)
Reason for last visit								
Yes	4.14	(0.62) *	4.07	(0.70) *	4.00	(0.80) *	4.08	(0.56) *
No	4.22	(0.61)	4.21	(0.60)	4.26	(0.64)	4.23	(0.50)
Usual reason for visit								
Problem	4.08	(0.63)	3.97	(0.68)	3.89	(0.81)	4.00	(0.56)
Check-up	4.22	(0.61) *	4.21	(0.63) *	4.24	(0.67) *	4.23	(0.51) *
Usual number of visits								
Two or more per year	4.29	(0.59) *	4.25	(0.63) *	4.21	(0.72) *	4.25	(0.53) *
One per year	4.15	(0.60)	4.10	(0.66)	4.13	(0.71)	4.14	(0.53)
One per two years	4.10	(0.57)	4.03	(0.63)	4.10	(0.73)	4.08	(0.51)
Less than one per two years	3.95	(0.70)	3.93	(0.70)	3.83	(0.84)	3.92	(0.57)
Total	4.17	(0.62)	4.13	(0.66)	4.12	(0.74)	4.15	(0.54)

* Significance $p < 0.05$ ANOVA

Those respondents who reported a usual visiting pattern of once or more per year had significantly higher scores on all four scales than those who make less frequent dental visits. There was a gradient in satisfaction across visiting frequency evident in all satisfaction scales.

3.5 SATISFACTION SCORES – PERCEIVED NEED

Table 3.5 shows the mean satisfaction scores by variables related to perceived need for a dental visit. Where an individual did not express a need for a dental visit, no further information regarding need was collected.

Table 3.5: Mean scores on satisfaction scales – perceived need for dental visit
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context		Content		Outcome		Satisfaction	
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)
Need a dental visit								
Yes	4.12	(0.64) *	4.06	(0.70) *	4.03	(0.80) *	4.09	(0.56) *
No	4.21	(0.60)	4.18	(0.62)	4.18	(0.69)	4.19	(0.52)
Type of visit†								
Check-up	4.17	(0.59) *	4.14	(0.69) *	4.21	(0.67) *	4.19	(0.52) *
Treatment	4.05	(0.66)	3.99	(0.70)	3.84	(0.88)	3.98	(0.57)
Both	4.15	(0.76)	3.97	(0.75)	3.93	(0.82)	4.04	(0.64)
Urgency of visit†								
Less than one week	4.02	(0.70) *	4.10	(0.77)	3.92	(0.95)	4.02	(0.64)
One week to < one month	4.18	(0.61)	4.09	(0.67)	4.09	(0.75)	4.14	(0.54)
One month to < three months	4.07	(0.60)	3.99	(0.74)	4.02	(0.80)	4.05	(0.54)
Three months or more	4.17	(0.69)	4.10	(0.66)	4.05	(0.73)	4.15	(0.57)
Intend to make a visit†								
Yes	4.20	(0.59) *	4.14	(0.68) *	4.15	(0.74) *	4.17	(0.52) *
No	3.92	(0.71)	3.85	(0.79)	3.65	(0.91)	3.86	(0.62)
Total	4.17	(0.62)	4.13	(0.66)	4.12	(0.74)	4.15	(0.54)

† Sub-set of (Need a dental visit = Yes)

* Significance $p < 0.05$ ANOVA

Respondents who had perceived a need for a dental visit had significantly lower scores on each of the three sub-scales and the satisfaction (24-item) scale than those who did not perceive a need.

Of those who did perceive a need for a dental visit, higher satisfaction scores were recorded on all four satisfaction scales by those whose perceived need was for a check-up rather than treatment.

The relationship between satisfaction and the perceived urgency of the required visit was significant on the context scale although difficult to interpret. In general those who perceived the need for a visit within a week recorded lower scores, but no consistent trends could be discerned.

The perceived urgency of the required visit and the likelihood of seeking dental care within that time were investigated. Respondents who reported that they needed a check-up, treatment or both within 6 months were asked whether they thought that they would make a visit within the time that they had indicated. Those who intended to make a visit within the specified time recorded higher scores on all scales than those who reported that they would not.

3.6 SATISFACTION SCORES – CONTINUOUS VARIABLES

The previous tables have presented mean satisfaction scores for categorical variables. Pearson correlation coefficients with $p < 0.05$ for continuous variables from the 1999 National Dental Telephone Interview Survey that are relevant to this Survey are shown in Table 3.6. These variables include self-reported number of teeth, waiting time for a dental visit, number of extractions and fillings in the previous year and age in years.

Table 3.6: Correlation coefficients with continuous variables
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context	Content	Outcome	Satisfaction
Number of teeth	-0.07 *	-0.04	-0.08 *	-0.01
Waiting time	-0.08 *	-0.07 *	-0.06 *	-0.08 *
Number of extractions <12 months	0.01	0.01	-0.07 *	-0.03
Number of fillings <12 months	-0.00	-0.02	-0.09	-0.05 *
Age in years	0.13 *	0.17 *	0.09 *	0.16 *

* Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Although a number of these variables showed statistically significant associations with some satisfaction scales, the correlation coefficients were small. The highest correlation coefficients were on the content and satisfaction scales for age. For presentation purposes, age has been presented as a categorical variable earlier in this report.

3.7 SATISFACTION SCORES – PLACE OF LAST VISIT AND HEALTH CARD STATUS

In the 12-month period relevant to this Survey, 64.6% of health cardholders received dental treatment from the private sector, the remainder (35.4%) from the public sector. Of those health cardholders who had received treatment in the private sector, 75.9% reported that they had preferred to see a private dentist. Of those remaining, 55.6% reported that the waiting time for public care had been too long and 16.5% had reported difficulty in getting to a public clinic as their reasons for seeking care from the private sector.

Table 3.7 shows the differences in the mean scores on the satisfaction scales by health card status and place of visit. Users of public clinics (health cardholders only) recorded the lowest scores on all four satisfaction scales. The differences in mean scores on all scales were statistically significant. Cardholders who had used private practices for their dental treatment recorded higher mean scores on all scales than the recipients of public care, although lower than non-cardholders who had received care in private practices.

The greatest range of mean scores occurred on the outcome scale, with the public-funded cardholders registering a mean score of 3.63 compared to a mean score of 4.03 for the cardholders who last visited a private practice, and 4.17 among non-cardholders. Given the nature of dental satisfaction scores, these differences are very large.

Table 3.7: Mean scores on satisfaction scales by place of last visit and health card status
- dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context		Content		Outcome		Satisfaction	
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)
Place of last visit and health card status								
Card public	3.65	(0.66) *	3.80	(0.83) *	3.63	(0.90) *	3.72	(0.62) *
Card private	4.15	(0.66)	4.11	(0.66)	4.03	(0.76)	4.10	(0.56)
No card private	4.24	(0.58)	4.18	(0.63)	4.17	(0.72)	4.21	(0.52)
Total	4.17	(0.62)	4.13	(0.66)	4.12	(0.74)	4.15	(0.54)

* Significance $p < 0.05$ ANOVA

3.8 SATISFACTION SCORES – INDIVIDUAL ITEMS

There were lower mean scores on the satisfaction (24-item) scale and at the sub-scale level (context, content and outcome) for those respondents who had attended public clinics than for those who had attended private practices.

To determine which specific items varied most by place of last visit, *ie* public clinic or private practice, the mean scores for the individual items on the questionnaire were calculated. The mean score on each item for the public and private sectors is shown in Table 3.8.

**Table 3.8: Mean scores on individual satisfaction items by place of last visit
– dentate persons aged 18+ whose last dental visit was within the previous 12 months**

Item	Public		Private		Diff in means
	Mean	(sd)	Mean	(sd)	
1 Distance to clinic	3.87	(1.23)	4.34	(1.00)	0.47 *
2 Travel to clinic	3.64	(1.27)	4.11	(1.13)	0.37 *
3 Arrange visit	3.50	(1.48)	4.08	(1.17)	0.58 *
4 Prompt visit	3.40	(1.58)	3.92	(1.19)	0.52 *
5 Attractive waiting room	3.38	(1.12)	3.65	(1.02)	0.27 *
6 Waiting time	3.69	(1.32)	4.03	(1.02)	0.34 *
7 Surgery well equipped	4.24	(0.94)	4.48	(0.74)	0.24 *
8 Modern surgery	3.90	(1.12)	4.23	(0.88)	0.33 *
9 Friendly staff	4.45	(0.79)	4.57	(0.68)	0.12
10 Impersonal professional	4.05	(1.06)	4.43	(0.96)	0.38 *
11 Preferred professional	3.34	(1.16)	4.43	(0.91)	1.09 *
12 Same professional	3.27	(1.43)	4.39	(1.03)	1.12 *
13 Explained need	3.89	(1.14)	4.47	(0.80)	0.58 *
14 Explained cost	3.53	(1.34)	3.18	(1.44)	-0.35 *
15 Thorough examination	3.62	(1.31)	4.17	(1.02)	0.55 *
16 Answered questions	4.00	(0.94)	4.38	(0.74)	0.38 *
17 Explained options	3.30	(1.21)	3.76	(1.19)	0.46 *
18 Avoid unnecessary costs	3.14	(1.27)	3.28	(1.14)	0.14
19 Satisfied with care	4.01	(1.15)	4.34	(0.80)	0.33 *
20 Appropriate care	3.87	(1.29)	4.13	(0.99)	0.26 *
21 No untreated problems	3.25	(1.46)	4.09	(1.15)	0.81 *
22 No unexpected pain	3.48	(1.43)	4.08	(1.15)	0.60 *
23 Explained treatment	3.97	(1.09)	4.12	(0.96)	0.14
24 Problems fixed	3.81	(1.20)	4.20	(0.94)	0.39 *
25 Improved dental health	3.86	(1.21)	4.34	(0.93)	0.48 *
26 Expected improvement	3.46	(1.30)	4.06	(1.09)	0.60 *
27 Cost affordable	4.08	(1.15)	3.37	(1.30)	-0.71 *
28 Confident of care	4.01	(1.23)	4.35	(0.84)	0.34 *
29 No better care	3.37	(1.37)	3.90	(1.13)	0.53 *
30 Good advice	3.81	(1.21)	3.98	(1.05)	0.17
31 Financially protected	3.41	(1.44)	2.81	(1.35)	-0.60 *

* Significance $p < 0.05$ ANOVA

Differences in mean scores of 0.50 or more were evident for item 3, item 4, item 11, item 12, item 13, item 15, item 21, item 22, item 26, item 27, item 29 and item 31. Items 3 and 4 relate to dental appointments, items 11 and 12 to the choice of dental professional, item 13 to explanation of need for treatment, items 15 and 21 to the thoroughness of treatment, item 22 to pain expectation, and items 26 and 29 to the improvement in health and quality of care. Items 27 and 31, cost-related items where the mean score for the public sector is higher than the private sector, relate to affordability and the perception of being financially protected against dental expenses.

Significant differences occurred within all items except item 9 (friendly staff), item 18 (avoid unnecessary costs), item 23 (explained treatment) and item 30 (good advice).

3.9 MULTIVARIATE ANALYSIS

The statistically significant bivariate associations between the satisfaction scores and the variables examined in sections 3.1 to 3.7 are summarised in Table 3.9.1.

Table 3.9.1: Variables with significant bivariate associations with satisfaction scores
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Context Mean	Content Mean	Outcome Mean	Satisfaction Mean
Sociodemographic				
Sex		*		
Age (in years)	*	*	*	*
Language at home – not English	*	*	*	*
Country of birth – not Australia	*		*	*
Location	*	*		*
State/Territory	*			
Employed	*	*	*	*
Annual household income	*	*	*	*
Education	*	*	*	*
Health cardholder	*	*	*	*
Dental Insurance	*	*	*	*
Social impact				
Toothache	*	*	*	*
Uncomfortable with appearance	*	*	*	*
Avoid some foods	*	*	*	*
Dental visits				
Place of last visit – public	*	*	*	*
Last visit – problem	*	*	*	*
Usual visit – problem	*	*	*	*
Usual number of visits	*	*	*	*
Waiting time	*	*	*	*
Number of fillings <12 months				*
Number of extractions <12 months			*	
Perceived need				
Need a dental visit	*	*	*	*
Type of visit – treatment	*	*	*	*
Urgency of visit	*			
Intend to make visit	*	*	*	*
Financial constraints				
Avoided visit because of cost	*	*	*	*
Cost prevented treatment	*	*	*	*
Financial burden†	*	*	*	*
Difficulty in paying \$100 dental bill†	*	*	*	*
Oral health status				
Number of teeth	*		*	

† Yes ≡ Large; No ≡ None, hardly any, a little

* Significance $p < 0.05$ ANOVA or Pearson R^2

To determine strengths of the independent association of these variables, each variable with a significant bivariate association with any of the satisfaction scores was entered in a least squares regression. The results of these regressions are shown in Table 3.9.2.

Of the 27 variables with a statistically significant bivariate association with the context sub-scale score, ten were significant in the least squares regression. These ten variables accounted for 12.9 per cent of the variance in the score on the context sub-scale.

**Table 3.9.2: Beta coefficients of the variables significant in least squares regression
- dentate persons aged 18+ whose last dental visit was within the previous 12 months**

	Context beta	Content beta	Outcome beta	Satisfaction beta
Sociodemographic				
Age (in years)	0.130	0.194	0.137	0.195
Language at home –not English	–	–	–	–
Country of birth – not Australia	-0.086	–	-0.067	-0.068
Location	-0.093	–	–	–
Annual household income	–	0.091	0.089	0.107
Dental Insurance	–	–	–	–
Social impact				
Toothache	–	–	-0.121	-0.061
Uncomfortable with appearance	-0.079	–	-0.068	-0.059
Avoid some foods	–	-0.107	-0.116	-0.092
Dental visits				
Place of last visit – public	-0.199	-0.078	-0.067	-0.136
Last visit – problem	–	–	-0.061	–
Usual visit – problem	-0.059	-0.128	–	-0.086
Usual number of visits	-0.064	–	–	-0.061
Number of fillings <12 months	–	–	–	–
Number of extractions <12 months	0.067	0.073	–	0.060
Financial constraints				
Avoided visit because of cost	-0.052	-0.119	-0.089	-0.099
Cost prevented treatment	-0.084	-0.064	-0.146	-0.112
Financial burden†	–	–	–	–
Difficulty in paying \$100 dental bill†	–	–	-0.057	–
DF Regression	10	8	11	12
DF Residual	1,913	1,818	1,820	1,792
F value	28.40	35.537	44.115	37.777
R ²	0.129	0.135	0.210	0.202

† Yes ≡ Large; No ≡ None, hardly any, a little

An increase in age and having an extraction(s) in the previous 12 months was positively associated with the context score. Being born overseas, living in a rural or remote location, discomfort with appearance, visiting a public clinic on the last visit, usually visiting for a problem, making infrequent dental visits, avoiding visits because of the cost and cost preventing recommended dental treatment were factors associated with lower context score. The strongest association with the context score was visiting a public clinic on the last visit with a beta co-efficient of -0.20.

Eight of the 24 variables with a significant association in the bivariate analyses were significant in the regression on the content score. Age, higher household income and the number of extractions in the preceding 12 months score were positively associated with the content score. Variables with a negative beta co-efficient were avoidance of some foods, last visit was to a public clinic, usually visit for a problem, avoiding visits because of the cost and cost preventing recommended dental treatment. Age, usually visiting for a problem and avoiding a visit because of the cost had the strongest

associations with the content score. The percentage of variance accounted for by the eight significant variables was 13.5 per cent.

Age and cost preventing treatment had the strongest associations with the outcome score with beta values of 0.14 and -0.15 respectively. Age and household income again had a positive beta co-efficient. Born overseas, toothache, avoidance of some foods, discomfort with appearance, visiting a public clinic, last visit for a problem, avoiding a visit because of the cost, cost preventing recommended dental treatment and difficulty with a \$100 dental bill also had significant negative associations with outcome score. These eleven variables accounted for 21.0 per cent of variance in the outcome score.

On the satisfaction (24-item) score twelve of the 25 variables with associations with satisfaction entered in the regression had significant beta co-efficients. The strongest predictors were age (beta = 0.195) and visiting a public clinic (beta = -0.136). Household income and the number of extractions in the previous 12 months again had a positive beta co-efficient. The other significant associations, all negative in the regression equation, were born overseas, toothache, discomfort with appearance, avoidance of some foods, usually visiting for a problem, infrequent dental visits, avoiding a visit because of the cost, and cost preventing recommended dental treatment. The twelve significant variables accounted for 20.2 per cent of the variance in the satisfaction (24-item) score.

Age was positively associated with all four scales, while visiting a public clinic, avoiding a visit because of the cost, and cost having prevented treatment had negative associations with all four scales.

3.10 SUMMARY

- Satisfaction scores increased on all scales as the age of respondents increased.
- Those respondents who spoke a language other than English at home had significantly lower scores on all four satisfaction scales.
- Overseas-born respondents had significantly lower scores on three of the four satisfaction scales.
- Residents of capital cities had significantly higher scores than those of other locations on the context, content and satisfaction (24-item) scales.
- Respondents who were not employed and those employed part-time recorded significantly lower scores on each of the four satisfaction scales than those respondents who were retired or employed full-time.
- Health cardholders had significantly lower scores on all satisfaction scales than non-cardholders.
- Respondents experiencing any social impact from dental problems had significantly lower scores on all satisfaction scales.
- Financial constraints associated with dental visiting were significantly associated with lower satisfaction scores.
- Respondents with problem-oriented visiting patterns recorded significantly lower satisfaction scores than those who reported visiting for check-ups.
- Respondents who perceived a need for a dental visit had lower scores on all four satisfaction scales.
- Cardholders whose last visit was to a private practice recorded lower scores on all four satisfaction scales than non-cardholders attending private practices.
- Cardholders attending public clinics had significantly lower scores on all four satisfaction scales than persons attending private practices.
- The greatest difference in mean scores by place of visit was recorded on the context scale.
- The greatest variation in mean scores between public clinics and private practices on the individual questions related to difficulties in arranging prompt dental appointments, choice of dental professional, lack of explanation of treatment needed, thoroughness of dental examination, problems left untreated, unexpected pain and the expected improvement in dental health. Recipients of public care recorded higher scores than private patients for items relating to financial protection and affordability.
- Multivariate analysis revealed that a number of factors were independently associated with dental satisfaction.
- The strongest predictors of higher satisfaction scores were age and the last dental visit being at a private practice rather than a public clinic.

- Avoiding a visit because of the cost and cost preventing recommended or wanted treatment were associated with lower scores on all satisfaction scales.
- Country of birth (overseas) and low income were associated with lower scores on three of the four dental satisfaction scales.
- The strongest association of any variable with the context scale was the place of last visit with a beta co-efficient of -0.199 in a least squares regression analysis.
- Age had the strongest association (positive) in the regression on the content scale, while usually visiting for a problem and avoiding a visit because of the cost were the variables with the strongest negative associations.
- Age and cost preventing treatment had the strongest associations with the outcome score with beta values of 0.137 and -0.146 respectively.
- The strongest associations with the satisfaction (24-item) score were age (beta = 0.195) and visiting a public clinic (beta = -0.136).
- Place of visit was negatively associated with all four scales, with the strongest effect on the context and satisfaction (24-item) scales.

4 ANALYSIS OF COST AND FACILITIES SATISFACTION SCORES

The variations in dental satisfaction scores on the sub-scales of cost and facilities established in Section 2.3, as well as the overall satisfaction score for all 31 items for the 1999 Dental Satisfaction Survey, were investigated.

Considerable differences existed between insured and uninsured persons in terms of their satisfaction with their ability to afford dental care. In general, individuals with dental insurance were more satisfied than their uninsured counterparts. On the other hand, recipients of public-funded dental care, 95.8% of whom did not have dental insurance, recorded the highest mean cost-satisfaction scores. Thus some disadvantaged groups which included a proportion of public clients recorded higher cost-satisfaction scores among the uninsured than among the insured.

4.1 COST-SATISFACTION SCORES – SOCIODEMOGRAPHIC CHARACTERISTICS

Tables 4.1(a) and (b) show the differences in mean scores of the cost sub-scale (by insured and uninsured persons) by the sociodemographic variables examined.

Table 4.1(a): Mean scores on cost-satisfaction scales – sociodemographic characteristics by dental insurance – dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Insured		Uninsured		All		
	Mean	(sd)	Mean	(sd)	Mean	(sd)	
Sex							
Male	3.47	(1.01)	3.08	(1.16)	*	3.24 (1.12) *	
Female	3.42	(1.03)	2.77	(1.15)		3.09 (1.14)	
Age group							
18–24 years	3.22	(1.04)	*	3.15	(1.18)	*	3.16 (1.13) *
25–44 years	3.40	(1.03)		2.72	(1.07)		3.01 (1.11)
45–64 years	3.41	(1.02)		2.84	(1.17)		3.13 (1.13)
65+ years	3.75	(0.96)		3.52	(1.18)		3.64 (1.08)
Language spoken at home							
English	3.47	(1.01)	*	2.93	(1.17)		3.18 (1.13) *
Other	3.13	(1.15)		2.87	(1.14)		2.98 (1.14)
Country of birth							
Australia	3.47	(1.03)	*	2.97	(1.18)	*	3.21 (1.14) *
Other	3.30	(0.98)		2.78	(1.11)		2.99 (1.09)
Location							
Capital City	3.46	(1.00)		2.93	(1.18)		3.18 (1.12)
Other major urban	3.17	(1.16)		2.83	(1.13)		3.00 (1.15)
Rural Major	3.59	(0.97)		2.78	(1.17)		3.11 (1.16)
Rural Other	3.31	(1.12)		3.06	(1.13)		3.15 (1.13)
Remote	3.48	(1.02)		2.99	(1.03)		3.20 (1.06)
Total	3.44	(1.02)		2.93	(1.17)		3.16 (1.13)

* Significance $p < 0.05$ ANOVA

Lower mean scores were recorded for cost-satisfaction than any of the other satisfaction scales, indicating a lower level of satisfaction with the affordability of dental care.

Scores below 3.00 (the neutral point of the scale) were regarded as open dissatisfaction with that aspect of the dental visit.

Across all groups, insured persons had higher mean cost-satisfaction scores than uninsured respondents, with the total scores 3.44 compared with 2.93.

Females among the uninsured and the 'All' groups recorded statistically lower scores than males. However, there were no significant differences in mean cost-satisfaction scores between males and females who had private dental insurance.

Across age groups, significant differences in cost-satisfaction occurred within all categories (insured, uninsured and all). The 65+ years group had the highest mean scores in all categories. Among insured individuals, satisfaction with cost increased with age, ranging from 3.22 for the 18–24 years group to 3.75 for the 65+ years group. Uninsured persons aged between 25 and 64 years had mean scores below 3.00 indicating that these age groups considered that dental care was not affordable. Uninsured individuals in the 18–24 years and the 65+ years age groups, a proportion of whom had made use of public dental services, recorded higher affordability scores, 3.15 and 3.52 respectively.

Significant differences by language occurred within the insured and the 'All' groups, with persons who spoke a language other than English at home recording lower scores. Overseas-born respondents recorded lower scores than those who were born in Australia, with significant differences occurring in all categories.

No significant differences existed by location, but within State/Territory differences occurred among the uninsured and the 'All' categories [Table 4.1(b)]. Among the uninsured, SA and Qld had the highest scores, with the lowest scores recorded by participants in the Northern Territory and Tasmania.

Significant differences by employment status occurred within all categories, with retired persons recording higher scores in each category. Those who were employed part-time recorded the lowest scores in all categories, with non-employed participants also recording low scores.

The mean cost-satisfaction score recorded by uninsured persons differed significantly within income group and education level. In the case of income, disadvantaged groups were among those with the higher cost-satisfaction scores, while those within the highest income and recorded low scores. There were no clear trends among education groups.

There was little difference by health care card in the cost mean score overall, but among the uninsured, cardholders had higher scores than non-cardholders, indicating that the recipients of publicly-funded care (35.4% of cardholders) experienced higher levels of satisfaction with the affordability of dental care.

Table 4.1(b): Mean scores on cost-satisfaction scales – sociodemographic characteristics by dental insurance
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Insured		Uninsured		*	All	
	Mean	(sd)	Mean	(sd)		Mean	(sd)
State/Territory							
New South Wales	3.42	(0.98)	2.90	(1.22)	*	3.17	(1.13) *
Victoria	3.41	(1.06)	2.79	(1.12)		3.01	(1.14)
Queensland	3.58	(1.09)	3.13	(1.18)		3.29	(1.17)
South Australia	3.49	(1.02)	3.27	(1.15)		3.38	(1.08)
Western Australia	3.39	(1.01)	2.71	(1.00)		3.10	(1.06)
Tasmania	3.31	(1.01)	2.68	(0.95)		3.05	(1.02)
Australian Capital Territory	3.37	(1.11)	2.99	(1.05)		3.19	(1.08)
Northern Territory	3.33	(1.28)	2.59	(1.20)		3.06	(1.31)
Employed							
Full-time	3.54	(0.96)	2.82	(1.05)	*	3.17	(1.07) *
Part-time	3.20	(1.15)	2.79	(1.18)		2.99	(1.18)
Retired	3.50	(0.99)	3.38	(1.29)		3.44	(1.16)
Not employed	3.39	(1.09)	2.93	(1.29)		3.06	(1.24)
Annual household income							
<\$12,000	3.04	(1.22)	2.99	(1.29)	*	3.00	(1.27)
\$12–20,000	3.62	(1.07)	3.18	(1.28)		3.32	(1.24)
\$20–30,000	3.36	(1.06)	2.88	(1.27)		3.07	(1.21)
\$30–40,000	3.42	(0.85)	2.96	(1.32)		3.17	(1.16)
\$40–50,000	3.55	(1.05)	2.79	(0.94)		3.17	(1.06)
\$50,000+	3.47	(0.98)	2.79	(1.06)		3.14	(1.08)
Education							
Primary	3.26	(1.25)	2.81	(1.46)	*	2.91	(1.41)
Some secondary	3.49	(0.98)	3.16	(1.18)		3.30	(1.11)
Secondary	3.44	(1.09)	2.78	(1.22)		3.13	(1.20)
Some vocational	3.26	(0.95)	2.73	(1.23)		2.90	(1.19)
Vocational	3.38	(1.07)	2.92	(1.13)		3.13	(1.13)
Some tertiary	3.17	(1.14)	3.21	(1.21)		3.14	(1.18)
Tertiary	3.55	(0.95)	2.82	(1.08)		3.20	(1.08)
Other	3.22	(0.94)	2.91	(1.17)		3.03	(1.10)
Health cardholder							
Yes	3.32	(1.11)	3.13	(1.29)	*	3.18	(1.24)
No	3.45	(1.01)	2.87	(1.12)		3.15	(1.11)
Total	3.44	(1.02)	2.93	(1.17)		3.16	(1.13)

* Significance p<0.05 ANOVA

4.2 COST-SATISFACTION SCORES – FINANCIAL CONSTRAINT

The mean scores for insured and uninsured persons by the financial constraint variables are presented in Table 4.2. Where respondents had experienced financial disadvantage, significantly lower mean scores on the cost or affordability scale were reported in all categories – insured, uninsured and overall.

Table 4.2: Mean scores on cost-satisfaction scales – financial constraint by dental insurance – dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Insured		*	Uninsured		*	All	
	Mean	(sd)		Mean	(sd)		Mean	(sd)
Avoided visit because of cost								
Yes	2.60	(0.93)	*	2.27	(1.10)	*	2.35	(1.07) *
No	3.55	(0.99)		3.18	(1.09)		3.36	(1.06)
Cost prevented treatment								
Yes	2.54	(1.01)	*	2.26	(1.18)	*	2.33	(1.14) *
No	3.54	(0.97)		3.11	(1.09)		3.33	(1.05)
Financial burden[†]								
Yes	2.60	(0.94)	*	1.88	(0.96)	*	2.13	(1.01) *
No	3.53	(0.99)		3.10	(1.10)		3.30	(1.07)
Difficulty in paying \$100 dental bill[†]								
Yes	2.40	(1.07)	*	2.64	(1.35)	*	2.58	(1.28) *
No	3.48	(1.00)		2.96	(1.13)		3.21	(1.10)
Place of last visit								
Public funded	3.68	(1.44)		3.79	(1.01)	*	3.75	(1.04) *
Private – own expense	3.43	(1.03)		2.76	(1.12)		3.10	(1.13)
Total	3.44	(1.02)		2.93	(1.17)		3.16	(1.13)

[†] Yes ≡ A lot

No ≡ None, hardly any, a little

* Significance p<0.05 ANOVA

Financial constraint variables tested were:

- having avoided or delayed a dental visit within the previous 12 months because of the cost;
- having been prevented from having recommended treatment in the previous 12 months because of the cost;
- having had a large financial burden due to dental visits in the previous 12 months; and
- paying a \$100 bill would cause a lot of difficulty at most times of the year.

Overt dissatisfaction was evident in mean scores below the neutral point, 3.00, recorded by both insured and uninsured persons who reported financial constraints.

The lowest cost-satisfaction score was 1.88, recorded by uninsured respondents who reported that their dental care had been a large financial burden.

4.3 COST-SATISFACTION SCORES – DENTAL VISITING AND PERCEIVED NEED

Associations between the satisfaction scores of insured and uninsured respondents and variables concerned with dental visits and perceived need of a dental visit are shown in Table 4.3.

Table 4.3: Mean scores on cost-satisfaction scales – dental visiting and perceived need by dental insurance – dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Insured		Uninsured		All	
	Mean	(sd)	Mean	(sd)	Mean	(sd)
Usual number of visits						
>=2 per year	3.49	(1.03)	3.05	(1.19)	3.29	(1.13) *
1 per year	3.40	(1.02)	2.92	(1.13)	3.13	(1.11)
1 per 2 years	3.48	(1.01)	2.74	(1.20)	3.04	(1.18)
<1 per 2 years	3.29	(1.03)	2.82	(1.16)	2.94	(1.14)
Need a dental visit						
Yes	3.42	(1.04)	2.66	(1.15)	2.99	(1.17) *
No	3.44	(1.01)	3.11	(1.14)	3.26	(1.10)
Type of visit[†]						
Check-up	3.64	(0.96) *	2.82	(1.08) *	3.19	(1.11) *
Treatment	3.06	(1.06)	2.59	(1.22)	2.77	(1.18)
Both	3.58	(1.06)	2.19	(0.97)	2.92	(1.23)
Place of last visit and health card status						
Card public	3.68	(1.44)	3.79	(1.01) *	3.75	(1.04) *
Card private	3.28	(1.11)	2.66	(1.31)	2.93	(1.26)
No card private	3.45	(1.02)	2.77	(1.09)	3.12	(1.11)
Total	3.44	(1.02)	2.93	(1.17)	3.16	(1.13)

† Sub-set of (Need a dental visit = Yes)

* Significance p<0.05 ANOVA

Significant differences existed across usual frequency of dental visits among the uninsured and the 'All' categories. Respondents who usually make two or more dental visits per year were more satisfied with the affordability of their dental care, with a gradient of decreasing scores across those who visit less often.

Persons who reported that they needed a dental visit had significantly lower cost-satisfaction scores in the uninsured and the 'All' categories than those who did not perceive the need for a visit. Among those who reported that they needed a dental visit, significant differences by type of dental visit existed in all categories, with those who perceived the need of treatment recording lower scores than those who reported that they needed a check-up only.

The relationship of cost or affordability satisfaction with place of last visit was significant in the uninsured and the 'All' categories. Cardholders who made their last dental visit at a public clinic were more satisfied with the affordability of their dental care, while cardholders who last visited a private practice recorded the lowest scores. Values among uninsured cardholders ranged from 2.66 for those who received private care to 3.79 for those who last attended a public clinic.

4.4 MULTIVARIATE ANALYSIS

Eighteen of the nineteen variables investigated in section 4.1 to section 4.3 had significant bivariate associations with the cost-satisfaction score. To determine the strengths of the independent association of these variables, each variable was entered into a multiple analysis of variance.

Sequential elimination of non-significant variables resulted in the model shown in Table 4.4. These seven variables accounted for 29.4 per cent of the variance in the cost-satisfaction score.

**Table 4.4: Coefficients of the variables significant in multiple analysis of variance
- dentate persons aged 18+ whose last dental visit was within the previous 12 months**

	Coefficient Beta	Std. Err. Beta	Sig. t
Age group			
[65+ years]	[Reference group]		
18–24 years*	-0.141	0.052	0.006
25–44 years*	-0.110	0.035	0.002
45–64 years	-0.038	0.037	0.310
Country of birth			
[Australian born]	[Reference group]		
Overseas born*	-0.060	0.027	0.024
Dental insurance			
[Insured]	[Reference group]		
Uninsured*	-0.236	0.023	0.000
Place of last visit			
[Non-cardholder – private]	[Reference group]		
Cardholder – public*	0.683	0.066	0.000
Cardholders – private*	-0.401	0.054	0.000
Avoided visit because of cost			
[No]	[Reference group]		
Yes*	-0.220	0.033	0.000
Cost prevented treatment			
[No]	[Reference group]		
Yes*	-0.246	0.034	0.000
Financial burden			
[None/Hardly any/A little]	[Reference group]		
Large*	-0.347	0.035	0.000
R ²	0.294		

* Significance p<0.05 MANOVA

Age group, country of birth, insurance status, place of last visit, and the financial constraints of avoiding a dental visit because of the cost, prevented from having recommended treatment because of the cost, and experiencing a financial burden because of dental expenses had effects on the cost-satisfaction score which were independent of each other.

The strongest associations with the cost score were within cardholder status by place of last visit, with visiting a public clinic having a positive beta co-efficient of 0.68, and cardholders who last made a private dental visit having a negative beta value of -0.40. The strongest predictor of higher cost-satisfaction scores was the last dental visit being

at a public clinic, having a positive beta co-efficient of 0.68. The strongest associations with lower scores were among cardholders who last made a private dental visit (a negative beta value of -0.40), and those who reported a large financial burden caused by dental visits (a negative beta value of -0.35).

Lack of dental insurance, avoiding visits because of the cost, cost preventing recommended dental treatment had independent effects associated with lower cost-satisfaction scores, with strong negative beta co-efficients of -0.236, -0.220 and -0.246 respectively.

Younger age groups and overseas-born respondents also recorded significantly lower cost-satisfaction scores, however the associations were weaker than those relating to financial constraints and place of last visit.

4.5 SATISFACTION WITH FACILITIES AND OVERALL (31-ITEM) SATISFACTION SCORES – SOCIODEMOGRAPHIC CHARACTERISTICS

Tables 4.5(a) and (b) show the differences in mean scores of the facilities sub-scale and the overall (31-item) satisfaction scale by the sociodemographic variables examined.

There were no statistically significant differences between males and females in the mean scores for the facilities sub-scale and the overall (31-item) scale.

Significant differences existed in the mean satisfaction scores for the facilities sub-scale and the overall (31-item) scale by age-group, with scores increasing across age group.

The greatest range of mean scores for the facilities sub-scale occurred by language, with those who spoke a language other than English at home less satisfied than those who spoke English as their home language (mean score 3.77 compared with 4.11). Large differences by language also existed in the overall (31-item) satisfaction score. Overseas-born persons had significantly lower mean scores than Australian-born individuals on both scales.

Table 4.5(a): Mean scores on facilities satisfaction scale – sociodemographic characteristics
– dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Facilities		Overall [†] (31-item)	
	Mean	(sd)	Mean	(sd)
Sex				
Male	4.07	(0.72)	4.02	(0.51)
Female	4.09	(0.73)	4.03	(0.52)
Age group				
18–24 years	3.96	(0.75) *	3.88	(0.50) *
25–44 years	3.98	(0.74)	3.98	(0.52)
45–64 years	4.17	(0.70)	4.09	(0.50)
65+ years	4.31	(0.64)	4.15	(0.49)
Language spoken at home				
English	4.11	(0.71) *	4.04	(0.50) *
Other	3.77	(0.81)	3.82	(0.57)
Country of birth				
Australia	4.11	(0.72) *	4.04	(0.51) *
Other	3.99	(0.74)	3.96	(0.53)
Location				
Capital City	4.10	(0.73) *	4.05	(0.50) *
Other Major Urban	4.01	(0.69)	3.95	(0.54)
Rural Major	4.00	(0.77)	3.93	(0.51)
Rural Other	4.18	(0.71)	4.00	(0.56)
Remote	3.86	(0.73)	3.82	(0.51)
Total	4.08	(0.73)	4.02	(0.51)

[†] 31-item scale as per 1995

* Significance p<0.05 ANOVA

Residential location was associated with statistically significant differences in both the facilities sub-scale and the overall (31-item) scale. Residents of remote areas recorded the lowest scores on both scales, while those living in 'rural other' areas showed the highest level of satisfaction with facilities. Respondents who lived in capital cities recorded the highest scores on the overall (31-item) scale, 4.05 compared with remote dwellers 3.82.

Table 4.5(b): Mean scores on facilities satisfaction scale – sociodemographic characteristics
 – dentate persons aged 18+ whose last dental visit was within the previous 12 months

	Facilities			Overall† (31-item)	
	Mean	(sd)		Mean	(sd)
State/Territory					
NSW	4.07	(0.75)		4.02	(0.51)
Vic	4.09	(0.73)		4.03	(0.51)
Qld	4.09	(0.73)		3.99	(0.54)
SA	4.15	(0.75)		4.13	(0.53)
WA	4.05	(0.64)		4.02	(0.46)
Tas	3.94	(0.77)		3.88	(0.50)
ACT	4.20	(0.68)		4.09	(0.54)
NT	3.90	(0.74)		3.95	(0.59)
Employed					
Full-time	4.10	(0.70)	*	4.07	(0.48) *
Part-time	4.07	(0.71)		3.95	(0.52)
Retired	4.30	(0.66)		4.12	(0.48)
Not employed	3.93	(0.82)		3.93	(0.55)
Annual household income					
<\$12,000	4.02	(0.81)		3.78	(0.63) *
\$12–20,000	4.20	(0.76)		4.00	(0.61)
\$20–30,000	4.04	(0.74)		3.99	(0.50)
\$30–40,000	4.08	(0.77)		4.01	(0.52)
\$40–50,000	4.07	(0.69)		4.04	(0.55)
\$50,000+	4.08	(0.69)		4.06	(0.46)
Education					
Some secondary	4.24	(0.69)	*	4.10	(0.50) *
Complete secondary	4.08	(0.70)		3.96	(0.56)
Some vocational	3.87	(0.75)		3.89	(0.54)
Complete vocational	4.02	(0.72)		4.03	(0.49)
Some tertiary	4.00	(0.81)		3.91	(0.50)
Complete tertiary	4.12	(0.72)		4.06	(0.51)
Health cardholder					
Yes	4.01	(0.82)	*	3.86	(0.57) *
No	4.10	(0.71)		4.05	(0.50)
Have private dental insurance					
Yes	4.16	(0.68)	*	4.11	(0.47) *
No	4.01	(0.77)		3.95	(0.54)
Place of last visit					
Public funded	3.84	(0.83)	*	3.71	(0.58) *
Private – own expense	4.12	(0.71)		4.05	(0.51)
Total	4.08	(0.73)		4.02	(0.51)

† 31-item scale as per 1995

* Significance $p < 0.05$ ANOVA

No significant differences in the mean scores for the facilities scale and the overall (31-item) scale occurred by State/Territory [Table 4.5(b)].

Significant differences in mean scores for the facilities scale and the overall (31-item) scale occurred by employment status. Non-employed persons and those who work part-time were less satisfied than those in full-time employment, while retirees recorded the highest scores.

Overall (31-item) satisfaction varied significantly across income groups, with the lowest score, 3.78, recorded by the lowest income group and the highest, 4.06, by the highest income group.

Statistically significant differences in satisfaction scores for both the facilities scale and the overall (31-item) scale occurred by education, government health card status, dental insurance, and the place of last visit.

Considerable variation occurred across education groups. Respondents in the lowest education groups recorded the highest satisfaction scores for both the facilities and the overall (31-item) scales – this may be caused by the high proportion of older persons in these groups (higher satisfaction scores associated with age). High scores were also recorded by the highest education group, completed tertiary. Incomplete post-secondary education (predominantly younger persons) appeared to be associated with low mean scores.

Government concession cardholders recorded lower scores than non-cardholders, and respondents who did not have private dental insurance were less satisfied than insured individuals.

The greatest difference in mean scores occurred by place of last visit. Cardholders who last received public-funded dental care rated their satisfaction on the facilities scale (3.84 cf. 4.12) and the overall (31-item) scale (3.71 cf. 4.05) lower than cardholders and non-cardholders who last attended a private practice.

The sub-set of items regarding satisfaction with facilities conceptually belongs with the context sub-scale, which consists of appointment-related items. These items loaded with waiting time and friendliness of staff on the factor analysis, and the trends shown by sociodemographic characteristics investigated correspond closely with the results for the context scale presented in section 3.1. The facility items were kept separate in an additional sub-scale to allow for direct comparisons of the context scores in 1999 with the context scores from the 1994, 1995 and 1996 Dental Satisfaction Surveys.

4.6 SUMMARY

- Cardholders who last attended a public clinic had the highest mean satisfaction score on the cost scale.
- Multivariate analysis revealed that a number of factors were independently associated with cost-satisfaction.
- The strongest predictors of higher cost-satisfaction scores were age and the last dental visit being at a public clinic rather than a private practice.
- The strongest associations with lower cost scores were among cardholders who last made a private dental visit, and respondents who reported a large financial burden caused by dental visits.
- Lower levels of satisfaction with the affordability of dental care were associated with younger age groups, being born overseas, lack of dental insurance, and the financial constraints of avoiding visits because of the cost, and cost preventing recommended dental treatment.
- The greatest variation in satisfaction with facilities occurred by language spoken at home and place of last visit.
- The lowest overall (31-item) satisfaction scores were recorded by those whose last dental visit was public-funded and those who spoke a language other than English at home.

5 REFERENCES

1. Allister JH, Stewart JF and Spencer, AJ. Dental Satisfaction Survey 1994.
2. Stewart JF and Spencer, AJ. Dental Satisfaction Survey 1995.
3. Wilkin D, Hallam L, Doggett M. *Measures of need and outcome for primary health care*. 1993; Oxford University Press. New York.
4. Hulka BS, Zyzanski SJ, Cassel JC, Thompson SJ. Scale for the measurement of attitudes towards physicians and primary medical care. *Medical Care* 1971;13: 429-35.
5. Ware JE, Snyder MK, Wright WR. *Development and validation of scales to measure patient satisfaction with medical services. Part A: review of literature, overview of methods and results regarding constructions of scales*. National Technical Information Service, Springfield Virginia. 1976;1A:288-329.
6. Zyzanski SJ, Hulka BS, Cassel JC. Scale for the measurement of 'satisfaction' with medical care: modifications in content and scoring. *Medical Care* 1974;12:611-20.
7. Nguyen TD, Attkinsson CC, Stegner BL. Assessment of patient satisfaction; development and refinement of a service evaluation questionnaire. *Evaluation and Program Planning* 1983;6:299-314.
8. Davies AR and Ware JE. Measuring patient satisfaction with dental care. *Soc Sci & Med* 1981;15A:751-60.
9. Pasco GC. Patient satisfaction in primary health care. *Evaluation and Program Planning* 1983;6:185-210.
10. Pasco GC, Attkinsson CC. The Evaluation Ranking Scale: a new methodology for assessing satisfaction. *Evaluation and Program Planning* 1983;6:335-347.
11. Locker D and Slade G, Oral health and the quality of life among older adults: the oral health impact profile. *J Can Dent Assoc*. 1993 Oct; 59(10): 830-3, 837-8, 844.

Appendix A 1999 Questionnaire

The first statements deal with different aspects of satisfaction with the service provided at your **last dental visit** or **series of dental visits**.

If you saw more than one dental professional, please respond in terms of the dental professional with whom you spent most time.

Note: The term *dental clinic* includes government public clinics and private practice surgeries.

		Strongly Disagree				Strongly Agree
A1	The distance to the dental clinic made it difficult to attend my last visit.	1	2	3	4	5
A2	Travel to the dental clinic I visited was convenient for me.	1	2	3	4	5
A3	I found it difficult to arrange with the dental clinic a date and time for my dental visit.	1	2	3	4	5
A4	I was able to make the dental visit as promptly as I felt was necessary.	1	2	3	4	5
A5	The dental clinic waiting room was attractive.	1	2	3	4	5
A6	I was not kept waiting long when I was at the dental clinic.	1	2	3	4	5
A7	The dental surgery had everything needed to provide my dental care.	1	2	3	4	5
A8	The dental surgery was modern.	1	2	3	4	5
A9	The dental clinic staff were friendly to me.	1	2	3	4	5
A10	The dental professional I saw was impersonal or indifferent towards me.	1	2	3	4	5
A11	I saw the dental professional I wanted to see.	1	2	3	4	5
A12	I saw the same dental professional each time I visited.	1	2	3	4	5
A13	The dental professional I saw explained well what treatment was needed.	1	2	3	4	5
A14	The dental professional explained whether there were any patient costs and how much before beginning treatment.	1	2	3	4	5
		Strongly Disagree				Strongly Agree

							Strongly Disagree				Strongly Agree
A15	The dental professional I saw could have been more thorough in examining me.	1	2	3	4	5					
A16	The dental professional I saw answered my questions.	1	2	3	4	5					
A17	I would like to have had more explanation of my dental treatment options.	1	2	3	4	5					
A18	The dental professional I visited avoided expensive treatment options.	1	2	3	4	5					
A19	I was satisfied with the dental care I received.	1	2	3	4	5					
A20	I received more dental care than I was convinced I needed.	1	2	3	4	5					
A21	There were other dental problems I had that were not treated.	1	2	3	4	5					
A22	The dental care I received was more painful than I had expected.	1	2	3	4	5					
A23	The dental professional explained what was being done during the treatment.	1	2	3	4	5					
A24	The dental care I received fixed my dental problems.	1	2	3	4	5					
A25	The dental care I received did not improve my dental health.	1	2	3	4	5					
A26	It took longer than I expected before my dental problems showed improvement.	1	2	3	4	5					
A27	My dental care cost me more than I could reasonably afford.	1	2	3	4	5					
A28	I am confident that I received good dental care at my last visit.	1	2	3	4	5					
A29	There are things about the dental care I received that could have been better.	1	2	3	4	5					
A30	My dental professional gave me good advice about how to look after my teeth and gums.	1	2	3	4	5					
A31	I feel protected financially against possible dental expenses.	1	2	3	4	5					
							Strongly Disagree				Strongly Agree

Appendix B Supplementary Tables (last visit 1+ years ago)

The 1999 Dental Satisfaction Survey resulted in a total of 3,969 questionnaires received from the 6093 mailed to dentate and edentulous adult respondents to the 1999 National Dental Telephone Interview Survey, a response rate of 65.1%.

Results for dentate adult respondents to the 1999 National Dental Telephone Interview Survey who had last made a dental visit one or more years ago, included in the mailing for the first time, are presented in this Appendix. Completed surveys were returned from 1,424 of the 2,269 mailed, giving a response of 62.8% (after adjusting for 50 undeliverable questionnaires.)

The response rate from this group was lower than that of participants who had visited within the previous 12 months, 62.8% compared to 69.0%.

Table S3.1(a): Mean scores on satisfaction scales – sociodemographic characteristics – dentate persons aged 18+ whose last dental visit was 1+ years ago

	Context		Content		Outcome		Satisfaction	
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)
Sex								
Male	3.95	(0.65)	3.83	(0.74)	3.87	(0.77)	3.88	(0.59)
Female	3.89	(0.65)	3.82	(0.74)	3.92	(0.78)	3.87	(0.58)
Age group								
18–24 years	3.75	(0.61) *	3.57	(0.68) *	3.85	(0.68)	3.70	(0.50) *
25–44 years	3.96	(0.65)	3.85	(0.76)	3.89	(0.80)	3.90	(0.61)
45–64 years	3.98	(0.65)	3.91	(0.71)	3.94	(0.75)	3.94	(0.57)
65+ years	3.91	(0.67)	3.91	(0.74)	3.86	(0.82)	3.90	(0.60)
Language spoken at home								
English	3.96	(0.65) *	3.84	(0.74)	3.91	(0.79)	3.90	(0.59) *
Other	3.70	(0.59)	3.75	(0.76)	3.80	(0.66)	3.71	(0.54)
Country of birth								
Australia	3.96	(0.62) *	3.84	(0.74)	3.91	(0.78)	3.90	(0.58) *
Other	3.77	(0.73)	3.78	(0.75)	3.83	(0.76)	3.79	(0.58)
Location								
Capital city	3.94	(0.62)	3.84	(0.72) *	3.91	(0.75)	3.89	(0.56)
Other major urban	3.98	(0.68)	3.94	(0.70)	3.86	(0.75)	3.93	(0.61)
Rural major	3.87	(0.69)	3.69	(0.85)	3.90	(0.88)	3.82	(0.67)
Rural other	3.87	(0.69)	3.82	(0.76)	3.85	(0.83)	3.86	(0.61)
Remote	3.69	(0.75)	3.73	(0.73)	3.80	(0.75)	3.74	(0.60)
Total	3.92	(0.65)	3.82	(0.74)	3.89	(0.77)	3.88	(0.58)

* Significance $p < 0(0.05)$ ANOVA

Table S3.1(b): Mean scores on satisfaction scales – sociodemographic characteristics
 – dentate persons aged 18+ whose last dental visit was 1+ years ago

	Context		Content		Outcome		Satisfaction					
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)				
State/Territory												
New South Wales	3.93	(0.65)	3.94	(0.68)	*	3.97	(0.75)	3.93	(0.55)			
Victoria	3.95	(0.63)	3.72	(0.82)		3.85	(0.77)	3.84	(0.61)			
Queensland	3.96	(0.66)	3.84	(0.74)		3.88	(0.80)	3.89	(0.61)			
South Australia	3.87	(0.62)	3.75	(0.67)		3.81	(0.76)	3.80	(0.55)			
Western Australia	3.89	(0.67)	3.77	(0.67)		3.86	(0.79)	3.84	(0.57)			
Tasmania	3.82	(0.77)	3.75	(0.85)		3.86	(0.89)	3.82	(0.65)			
Australian Capital Territory	3.78	(0.68)	3.78	(0.74)		3.70	(0.89)	3.76	(0.66)			
Northern Territory	3.74	(0.63)	3.80	(0.81)		3.89	(0.70)	3.83	(0.58)			
Employed												
Full-time	4.00	(0.63)	*	3.89	(0.68)	*	3.95	(0.74)	*	3.93	(0.57)	*
Part-time	3.83	(0.70)		3.69	(0.79)		3.87	(0.79)		3.79	(0.60)	
Retired	3.93	(0.68)		3.92	(0.72)		3.94	(0.79)		3.94	(0.59)	
Not employed	3.78	(0.62)		3.76	(0.83)		3.78	(0.80)		3.77	(0.60)	
Annual household income												
<\$12,000	3.83	(0.65)	*	3.91	(0.77)		3.85	(0.84)	*	3.88	(0.64)	*
\$13–20,000	3.79	(0.74)		3.70	(0.79)		3.78	(0.80)		3.78	(0.62)	
\$21–30,000	3.82	(0.65)		3.73	(0.83)		3.78	(0.90)		3.79	(0.66)	
\$31–40,000	3.91	(0.61)		3.80	(0.72)		3.84	(0.69)		3.83	(0.54)	
\$41–50,000	3.97	(0.65)		3.82	(0.67)		3.84	(0.75)		3.86	(0.51)	
\$50,000+	4.02	(0.60)		3.86	(0.72)		3.98	(0.75)		3.94	(0.57)	
Education												
Primary	3.90	(0.55)	*	3.93	(0.67)	*	4.07	(0.66)		3.95	(0.50)	*
Some secondary	3.76	(0.71)		3.75	(0.74)		3.90	(0.74)		3.80	(0.58)	
Secondary	3.92	(0.62)		3.79	(0.74)		3.82	(0.77)		3.83	(0.61)	
Some vocational	3.82	(0.67)		3.65	(0.77)		3.93	(0.74)		3.80	(0.55)	
Vocational	4.05	(0.58)		3.94	(0.66)		3.94	(0.72)		3.98	(0.53)	
Some tertiary	3.84	(0.60)		3.82	(0.64)		3.86	(0.65)		3.83	(0.53)	
Tertiary	3.97	(0.67)		3.85	(0.81)		3.90	(0.85)		3.89	(0.64)	
Other	3.96	(0.63)		3.84	(0.68)		3.85	(0.79)		3.89	(0.60)	
Health cardholder												
Yes	3.64	(0.70)	*	3.59	(0.83)	*	3.61	(0.82)	*	3.63	(0.62)	*
No	3.99	(0.61)		3.88	(0.71)		3.96	(0.75)		3.93	(0.56)	
Have private dental insurance												
Yes	4.07	(0.62)	*	3.92	(0.72)	*	4.04	(0.77)	*	4.00	(0.55)	*
No	3.87	(0.65)		3.79	(0.75)		3.84	(0.77)		3.82	(0.59)	
Total	3.92	(0.65)		3.82	(0.74)		3.89	(0.77)		3.88	(0.58)	

* Significance $p < 0.05$ ANOVA

Table S3.2: Mean scores on satisfaction scales – social impact experienced
– dentate persons aged 18+ whose last dental visit was 1+ years ago

	Context		Content		Outcome		Satisfaction					
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)				
Toothache												
Yes	3.73	(0.79)	*	3.57	(0.85)	*	3.53	(0.87)	*	3.62	(0.69)	*
No	3.95	(0.63)		3.85	(0.72)		3.94	(0.75)		3.90	(0.57)	
Uncomfortable with appearance												
Yes	3.86	(0.70)		3.69	(0.75)	*	3.74	(0.80)	*	3.76	(0.57)	*
No	3.93	(0.64)		3.85	(0.73)		3.93	(0.76)		3.90	(0.58)	
Avoid some foods												
Yes	3.86	(0.68)		3.69	(0.84)	*	3.62	(0.88)	*	3.72	(0.67)	*
No	3.93	(0.65)		3.84	(0.72)		3.93	(0.75)		3.89	(0.57)	
Total	3.92	(0.65)		3.82	(0.74)		3.89	(0.77)		3.88	(0.58)	

Yes ≡ Very often, often and sometimes
 No ≡ Hardly ever and never

* Significance $p < 0.05$ ANOVA

Table S3.3: Mean scores on satisfaction scales – financial constraints
– dentate persons aged 18+ whose last dental visit was 1+ years ago

	Context		Content		Outcome		Satisfaction					
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)				
Avoided visit because of cost												
Yes	3.90	(0.68)	3.76	(0.75)	*	3.77	(0.79)	*	3.81	(0.59)	*	
No	3.94	(0.63)	3.87	(0.72)		3.97	(0.75)		3.92	(0.57)		
Cost prevented treatment												
Yes	3.82	(0.70)	*	3.69	(0.83)	*	3.63	(0.86)	*	3.73	(0.65)	*
No	3.96	(0.63)		3.87	(0.70)		3.98	(0.73)		3.92	(0.56)	
Difficulty in paying \$100 dental bill[†]												
No	3.66	(0.65)	*	3.69	(0.84)	*	3.75	(0.83)	*	3.72	(0.62)	*
Yes	3.97	(0.64)		3.85	(0.72)		3.92	(0.76)		3.90	(0.57)	
Total	3.92	(0.65)		3.82	(0.74)		3.89	(0.77)		3.88	(0.58)	

[†]Yes ≡ A lot

No ≡ None, hardly any, a little

* Significance p<0(0.05 ANOVA

Table S3.4: Mean scores on satisfaction scales – dental visiting
 – dentate persons aged 18+ whose last dental visit was 1+ years ago

	Context		Content		Outcome		Satisfaction		
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)	
Place of last visit									
Public	3.35	(0.57)	*	3.55	(0.70)	*	3.60	(0.73)	*
Private	3.99	(0.62)		3.86	(0.74)		3.93	(0.78)	
Usual reason for visit									
Problem	3.90	(0.66)		3.80	(0.75)		3.82	(0.78)	*
Check-up	3.96	(0.63)		3.86	(0.72)		4.02	(0.75)	
Usual number of visits									
Two or more per year	3.74	(0.61)	*	3.78	(0.76)	*	3.99	(0.69)	*
One per year	4.02	(0.62)		3.87	(0.75)		3.97	(0.79)	
One per two years	3.99	(0.64)		3.91	(0.70)		3.99	(0.78)	
Less than one per two years	3.87	(0.66)		3.76	(0.75)		3.81	(0.77)	
Total	3.92	(0.65)		3.82	(0.74)		3.89	(0.77)	

* Significance $p < 0(0.05)$ ANOVA

Table S3.5: Mean scores on satisfaction scales – perceived need for dental visit
– dentate persons aged 18+ whose last dental visit was 1+ years ago

	Context		Content		Outcome		Satisfaction		
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)	
Need a dental visit									
Yes	3.89	(0.68)	*	3.77	(0.74)	*	3.83	(0.59)	*
No	4.00	(0.59)		3.91	(0.73)		4.01	(0.71)	
Type of visit†									
Check-up	3.97	(0.64)	*	3.85	(0.71)	*	3.99	(0.74)	*
Treatment	3.74	(0.73)		3.61	(0.77)		3.57	(0.82)	
Both	3.84	(0.66)		3.76	(0.79)		3.68	(0.84)	
Urgency of visit†									
Less than one week	3.95	(0.63)		3.90	(0.76)		3.79	(0.79)	
One week to < one month	3.82	(0.67)		3.77	(0.72)		3.81	(0.77)	
One month to < three months	3.93	(0.69)		3.71	(0.79)		3.85	(0.87)	
Three months or more	3.86	(0.67)		3.74	(0.66)		3.85	(0.74)	
Intend to make a visit†									
Yes	3.99	(0.65)	*	3.91	(0.70)	*	3.95	(0.79)	*
No	3.82	(0.68)		3.65	(0.79)		3.70	(0.80)	
Total	3.92	(0.65)		3.82	(0.74)		3.89	(0.77)	

† Sub-set of (Need a dental visit = Yes)

* Significance $p < 0.05$ ANOVA

Table S3.6: Mean scores on satisfaction scales by place of last visit and health card status – dentate persons aged 18+ whose last dental visit was 1+ years ago

	Context		Content		Outcome		Satisfaction					
	Mean	(sd)	Mean	(sd)	Mean	(sd)	Mean	(sd)				
Place of last visit and health card status												
Card public	3.35	(0.57)	*	3.55	(0.70)	*	3.60	(0.73)	*	3.50	(0.52)	*
Card private	3.84	(0.68)		3.67	(0.90)		3.61	(0.88)		3.72	(0.66)	
No card private	4.02	(0.61)		3.89	(0.70)		3.98	(0.75)		3.95	(0.55)	
Total	3.92	(0.65)		3.82	(0.74)		3.89	(0.77)		3.88	(0.58)	

* Significance $p < 0(0.05)$ ANOVA

**Table S3.7: Mean scores on individual satisfaction items by place of last visit
- dentate persons aged 18+ whose last dental visit was 1+ years ago**

Item	Public		Private		Diff in means	Sig.
	Mean	(sd)	Mean	(sd)		
1 Distance to clinic	3.66	(1.34)	4.25	(1.06)	0.59	*
2 Travel to clinic	3.50	(1.25)	3.96	(1.19)	0.46	*
3 Arrange visit	3.14	(1.25)	3.89	(1.19)	0.75	*
4 Prompt visit	3.05	(1.30)	3.77	(1.21)	0.72	*
5 Attractive waiting room	3.05	(1.11)	3.41	(1.01)	0.36	*
6 Waiting time	3.42	(0.98)	3.61	(1.05)	0.19	
7 Surgery well equipped	3.93	(0.96)	4.25	(0.87)	0.32	*
8 Modern surgery	3.60	(1.05)	3.94	(0.92)	0.34	*
9 Friendly staff	4.21	(0.77)	4.29	(0.79)	0.08	
10 Impersonal professional	3.39	(1.33)	3.99	(1.11)	0.60	*
11 Preferred professional	3.09	(1.19)	4.08	(1.01)	0.99	*
12 Same professional	2.76	(1.34)	4.05	(1.16)	1.29	*
13 Explained need	3.83	(0.95)	4.17	(0.91)	0.34	*
14 Explained cost	3.50	(1.03)	3.08	(1.35)	-0.42	*
15 Thorough examination	3.19	(1.25)	3.88	(1.10)	0.67	*
16 Answered questions	3.89	(0.78)	4.11	(0.86)	0.22	*
17 Explained options	2.91	(1.21)	3.46	(1.22)	0.55	*
18 Avoid unnecessary costs	3.36	(1.05)	3.09	(1.09)	-0.27	*
19 Satisfied with care	4.09	(0.97)	4.03	(0.96)	-0.06	
20 Appropriate care	3.86	(1.00)	3.83	(1.07)	-0.03	
21 No untreated problems	3.36	(1.31)	3.86	(1.21)	0.50	*
22 No unexpected pain	3.84	(1.06)	3.77	(1.16)	-0.07	
23 Explained treatment	3.42	(1.22)	3.75	(1.07)	0.33	*
24 Problems fixed	3.67	(1.10)	3.94	(1.04)	0.27	*
25 Improved dental health	3.71	(1.24)	4.16	(1.00)	0.45	*
26 Expected improvement	3.58	(1.00)	4.00	(1.06)	0.42	*
27 Cost affordable	3.81	(1.11)	3.07	(1.33)	-0.74	*
28 Confident of care	4.08	(0.88)	4.07	(0.93)	-0.01	
29 No better care	3.18	(1.11)	3.54	(1.17)	0.36	*
30 Good advice	3.58	(1.18)	3.61	(1.11)	0.03	
31 Financially protected	2.93	(1.21)	2.49	(1.27)	-0.44	*

* Significance p<0(0.05 ANOVA

Table S4.1(a): Mean scores on cost-satisfaction scales – sociodemographic characteristics by dental insurance
– dentate persons aged 18+ whose last dental visit was 1+ years ago

	Insured		Uninsured		All	
	Mean	(sd)	Mean	(sd)	Mean	(sd)
Sex						
Male	3.16	(0.99)	2.73	(1.08)	2.86	(1.07)
Female	3.24	(1.03)	2.61	(1.07)	2.78	(1.10)
Age group						
18–24 years	3.00	(0.96)	2.87	(1.00) *	2.91	(0.98) *
25–44 years	3.26	(0.99)	2.54	(1.02)	2.72	(1.06)
45–64 years	3.15	(1.01)	2.57	(1.05)	2.79	(1.07)
65+ years	3.40	(1.12)	3.22	(1.25)	3.25	(1.22)
Language spoken at home						
English	3.18	(1.01)	2.64	(1.04) *	2.80	(1.06)
Other	3.34	(0.93)	2.89	(1.22)	2.96	(1.19)
Country of birth						
Australia	3.23	(1.00)	2.68	(1.07)	2.84	(1.08)
Other	3.03	(1.04)	2.66	(1.08)	2.76	(1.08)
Location						
Capital City	3.12	(1.03)	2.61	(1.08) *	2.75	(1.09) *
Other major urban	3.48	(0.94)	2.94	(1.04)	3.14	(1.03)
Rural Major	3.17	(0.87)	2.80	(1.02)	2.88	(1.00)
Rural Other	3.27	(1.09)	2.68	(1.09)	2.82	(1.10)
Remote	3.15	(0.93)	2.82	(1.14)	2.96	(1.06)
Total	3.19	(1.01)	2.68	(1.07)	2.82	(1.08)

* Significance $p < 0.05$ ANOVA

Table S4.1(b): Mean scores on cost-satisfaction scales – sociodemographic characteristics by dental insurance
– dentate persons aged 18+ whose last dental visit was 1+ years ago

	Insured		Uninsured		All	
	Mean	(sd)	Mean	(sd)	Mean	(sd)
State/Territory						
New South Wales	3.26	(0.98)	2.70	(1.12)	2.86	(1.11)
Victoria	3.05	(1.06)	2.63	(1.02)	2.71	(1.03)
Queensland	3.34	(1.02)	2.75	(1.09)	2.93	(1.11)
South Australia	3.06	(1.01)	2.69	(1.06)	2.84	(1.05)
Western Australia	3.04	(0.96)	2.60	(1.04)	2.79	(1.04)
Tasmania	3.27	(1.16)	2.44	(1.07)	2.72	(1.13)
Australian Capital Territory	2.98	(0.96)	2.72	(1.05)	2.80	(1.01)
Northern Territory	3.42	(1.14)	2.88	(1.26)	3.07	(1.21)
Employed						
Full-time	3.25	(0.99)	2.65	(1.04) *	2.84	(1.06) *
Part-time	3.04	(1.10)	2.56	(0.91)	2.71	(0.99)
Retired	3.14	(0.91)	3.00	(1.18)	3.04	(1.11)
Not employed	3.20	(0.97)	2.59	(1.08)	2.68	(1.09)
Annual household income						
<\$12,000	2.61	(1.00) *	2.93	(1.07) *	2.91	(1.06) *
\$13–20,000	3.61	(1.03)	2.82	(1.22)	2.96	(1.22)
\$21–30,000	3.06	(1.16)	2.61	(1.11)	2.72	(1.13)
\$31–40,000	2.98	(1.09)	2.30	(0.98)	2.44	(1.03)
\$41–50,000	2.98	(0.87)	2.52	(0.82)	2.65	(0.85)
\$50,000+	3.29	(0.99)	2.72	(1.07)	2.94	(1.08)
Education						
Primary	3.34	(0.64)	3.53	(0.84) *	3.51	(0.80) *
Some secondary	3.07	(1.10)	2.74	(1.23)	2.82	(1.20)
Secondary	3.07	(0.96)	2.52	(1.26)	2.71	(1.20)
Some vocational	3.19	(1.04)	2.62	(0.85)	2.86	(0.96)
Vocational	3.43	(0.94)	2.72	(0.87)	2.93	(0.94)
Some tertiary	3.33	(1.32)	2.84	(0.97)	2.95	(1.06)
Tertiary	3.09	(0.99)	2.60	(1.08)	2.71	(1.08)
Other	3.21	(1.10)	2.74	(1.30)	2.91	(1.24)
Health cardholder						
Yes	3.14	(0.99)	2.88	(1.17) *	2.92	(1.15)
No	3.20	(1.01)	2.61	(1.04)	2.80	(1.06)
Total	3.19	(1.01)	2.68	(1.07)	2.82	(1.08)

* Significance $p < 0.05$ ANOVA

Table S4.2: Mean scores on cost-satisfaction scales – financial constraints by dental insurance
– dentate persons aged 18+ whose last dental visit was 1+ years ago

	Insured		Uninsured		All	
	Mean	(sd)	Mean	(sd)	Mean	(sd)
Avoided visit because of cost						
Yes	2.62	(1.07) *	2.21	(0.97) *	2.28	(1.00) *
No	3.36	(0.93)	3.03	(1.00)	3.14	(0.99)
Cost prevented treatment						
Yes	2.55	(1.16) *	2.20	(1.00) *	2.25	(1.03) *
No	3.29	(0.95)	2.87	(1.05)	3.01	(1.03)
Difficulty in paying \$100 dental bill†						
No	2.38	(1.13) *	2.39	(1.04) *	2.40	(1.05) *
Yes	3.22	(0.99)	2.73	(1.07)	2.89	(1.07)
Place of last visit						
Public funded	3.23	(0.82)	3.38	(0.91) *	3.37	(0.90) *
Private – own expense	3.24	(0.99)	2.58	(1.08)	2.78	(1.09)
Total	3.19	(1.01)	2.68	(1.07)	2.82	(1.08)

†Yes = A lot

No = None, hardly any, a little

* Significance $p < 0(0.05)$ ANOVA

Table S4.3: Mean scores on cost-satisfaction scales – dental visiting and perceived need by dental insurance
– dentate persons aged 18+ whose last dental visit was 1+ years ago

	Insured		Uninsured		All	
	Mean	(sd)	Mean	(sd)	Mean	(sd)
Usual number of visits						
>=2 per year	2.85	(1.22)	2.27	(1.02) *	2.44	(1.11) *
1 per year	3.27	(0.96)	2.45	(1.19)	2.78	(1.17)
1 per 2 years	3.16	(1.07)	2.73	(1.02)	2.85	(1.04)
<1 per 2 years	3.22	(0.95)	2.75	(1.07)	2.86	(1.06)
Need a dental visit						
Yes	3.19	(1.03)	2.62	(1.02) *	2.79	(1.05)
No	3.19	(0.94)	2.77	(1.17)	2.87	(1.13)
Type of visit†						
Check-up	3.35	(1.06) *	2.66	(1.04)	2.89	(1.09) *
Treatment	2.84	(0.82)	2.61	(1.03)	2.67	(0.99)
Both	3.07	(1.06)	2.49	(0.89)	2.65	(0.97)
Place of last visit and health card status						
Card public	3.23	(0.82)	3.38	(0.91) *	3.37	(0.90) *
Card private	3.18	(1.05)	2.55	(1.26)	2.67	(1.25)
No card private	3.24	(0.99)	2.59	(1.04)	2.80	(1.07)
Total	3.19	(1.01)	2.68	(1.07)	2.82	(1.08)

† Sub-set of (Need a dental visit = Yes) †

* Significance $p < 0(0.05)$ ANOVA

Table S4.5(a): Mean scores on facilities satisfaction scale – sociodemographic characteristics
 – dentate persons aged 18+ whose last dental visit was 1+ years ago

	Facilities		Overall† (31-item)	
	Mean	(sd)	Mean	(sd)
Sex				
Male	3.84	(0.69)	3.76	(0.54)
Female	3.83	(0.81)	3.75	(0.55)
Age group				
18–24 years	3.77	(0.66)	3.60	(0.46)*
25–44 years	3.82	(0.75)	3.77	(0.56)
45–64 years	3.86	(0.75)	3.81	(0.54)
65+ years	3.93	(0.87)	3.82	(0.57)
Language spoken at home				
English	3.85	(0.76)	3.77	(0.55)*
Other	3.75	(0.67)	3.64	(0.51)
Country of birth				
Australia	3.86	(0.73) *	3.77	(0.54)*
Other	3.73	(0.83)	3.68	(0.55)
Location				
Capital City	3.82	(0.74) *	3.76	(0.53)
Other Major Urban	4.00	(0.77)	3.83	(0.56)
Rural Major	3.80	(0.86)	3.71	(0.61)
Rural Other	3.87	(0.69)	3.75	(0.56)
Remote	3.62	(0.70)	3.62	(0.55)
Total	3.84	(0.75)	3.75	(0.54)

†31-item scale as per 1995

* Significance $p < 0(0.05)$ ANOVA

Table S4.5(b): Mean scores on facilities satisfaction scale – sociodemographic characteristics
– dentate persons aged 18+ whose last dental visit was 1+ years ago

	Facilities		Overall† (31-item)	
	Mean	(sd)	Mean	(sd)
State/Territory				
New South Wales	3.88	(0.74)	3.82	(0.52)*
Victoria	3.78	(0.77)	3.70	(0.55)
Queensland	3.83	(0.78)	3.77	(0.58)
South Australia	3.78	(0.72)	3.68	(0.50)
Western Australia	3.89	(0.70)	3.72	(0.53)
Tasmania	3.90	(0.80)	3.71	(0.60)
Australian Capital Territory	3.78	(0.74)	3.64	(0.61)
Northern Territory	3.70	(0.73)	3.72	(0.54)
Employed				
Full-time	3.87	(0.72)	3.80	(0.53)*
Part-time	3.80	(0.78)	3.68	(0.55)
Retired	3.87	(0.86)	3.83	(0.57)
Not employed	3.74	(0.74)	3.65	(0.53)
Annual household income				
<\$12,000	3.92	(0.80) *	3.81	(0.60)*
\$13–20,000	3.79	(0.73)	3.68	(0.56)
\$21–30,000	3.75	(0.76)	3.68	(0.60)
\$31–40,000	3.95	(0.73)	3.70	(0.52)
\$41–50,000	3.93	(0.76)	3.73	(0.48)
\$50,000+	3.79	(0.75)	3.80	(0.54)
Education				
Some secondary	3.77	(0.77)	3.72	(0.55)*
Complete secondary	3.82	(0.66)	3.70	(0.57)
Some vocational	3.76	(0.62)	3.71	(0.49)
Complete vocational	3.82	(0.81)	3.76	(0.58)
Some tertiary	3.95	(0.61)	3.70	(0.51)
Complete tertiary	3.85	(0.80)	3.84	(0.49)
Health cardholder				
Yes	3.72	(0.78) *	3.57	(0.57)*
No	3.86	(0.74)	3.80	(0.53)
Have private dental insurance				
Yes	3.98	(0.73) *	3.88	(0.52)*
No	3.78	(0.75)	3.70	(0.55)
Place of last visit				
Public funded	3.52	(0.85) *	3.49	(0.48)
Private – own expense	3.87	(0.73)	3.79	(0.54)
Total	3.84	(0.75)	3.75	(0.54)

†31-item scale as per 1995

* Significance $p < 0.05$ ANOVA

