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Factors associated with satisfaction with dental services among the elderly

ABSTRACT

OBJECTIVE: To analyze the prevalence of elderly users' satisfaction with dental care and associated factors.

METHODS: Cross-sectional study conducted with 495 elderly individuals aged 65-74 years, without cognitive impairment according to the Mini-Mental State Examination, who used dental services of the municipality of Montes Claros (Southeastern Brazil) from 2008 to 2009. A two-stage cluster, complex probability sample was used. Trained/ calibrated professionals and students conducted tests and household interviews using handheld computers with software developed for this purpose. In the statistical analysis, with correction by design effect, PASW® Statistics 18.0 was utilized. To identify associations between satisfaction and the factors of interest, Poisson regression was conducted, estimating the prevalence ratio and the 95% confidence interval (PR / 95%CI).

RESULTS: Overall, 91.4% of the elderly were satisfied. Greater satisfaction was found among users of services of the *Sistema Único de Saúde* (SUS – Brazil's National Health Service) (PR = 1.07; 95%CI 1.01;1.12); those who had access to information on how to avoid oral problems (PR = 1.09; 95%CI 1.02;1.16); those who did not use medicines (PR = 1.05; 95%CI 1.00;1.10); and those who rated the appearance of their teeth and gums as excellent or good (PR = 1.13; 95%CI 1.00;1.28).

CONCLUSIONS: The elderly who access the service offered by SUS have greater satisfaction with dental treatment, as well as those who do not use medicines, those with better self-perception of the aesthetics of teeth and gums and those who have more access to information about how to prevent oral problems. Therefore, health care policies in the SUS have been presenting positive results.

DESCRIPTORS: Aged. Consumer Satisfaction. Dental Care for Aged. Dental Health Services. Cross-Sectional Studies.

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INTRODUCTION

Evaluating the quality of healthcare is an important tool in the planning and management of health services and systems.²³ Analysing satisfaction with health services from the service users' perspective allows healthcare to be better adapted and promoted towards their real needs. Technical evaluations should be complemented by the perceptions of satisfaction of the individuals who receive care with the services provided.^{5,16} There has been little investigation into subjective aspects of the quality of the programmes and services, including evaluating consumer satisfaction, and this area includes issues that need to be discussed which may be peculiar to each place and setting.²¹

Interest is increasing in knowing the population's expectations with regards to the services offered in the development of dental care programmes and strategies. The technical characteristics regarding care itself are used to measure results. Service user satisfaction with their relationship with health service providers should be considered.²⁴ Donabedian³ (1988) proposes that health services be evaluated according to structure, the work process, results and user satisfaction. The determinants of user satisfaction with dental services, according to the theoretical model by Andersen & Davidson¹ (1997), may influence the user's perception of health services. One of the outcomes for oral health in this model is consumer satisfaction with access, communication and quality of services. Andersen & Davidson¹ (1997) divide them into a) exogenous variables (immutable characteristics), belonging to a particular ethnic group or age group; b) primary determinants of oral health the external environment, the system of oral health care and personal characteristics; c) oral health habits, personal habits and use of official dental services and d) oral health outcomes, normative and subjective oral health conditions, in addition to the consumer's own satisfaction.^{1,11}

Faced with the aspects which make up the evaluation of dental care from the users' point of view, possibilities of transforming dental health care based on reorganising the work process appear. This includes soft technologies to mediate encounters of health professionals among themselves and with the population using these services.

Historically, dental care in Brazil has focussed on treatment, on compartmentalised and fragmented knowledge of the act of healing¹⁷ without considering the service users' point of view in evaluating the service. The dramatic aging process experienced by the Brazilian population and the National Policy for the Elderly highlight the need for expanding the debate on health care for this age group.¹³ The Statute for the Elderly emphasizes the need for comprehensive health

care for the elderly through the Unified Brazilian Health System (SUS), guaranteeing universal and equal access in integrated and continuous actions and services for the prevention, promotion, protection and recovery of health.^a

Dental care for the elderly in Brazil is not impressive, with individuals with precarious oral health conditions, high levels of tooth loss and increasing demand for dentures, which compromises this age group's quality of life.¹¹ Evaluating dental care from the perspective of the elderly may contribute to improvements in the availability of such services and in the quality of life of the service users. Therefore, this study aims to identify the prevalence and the factors associated with the elderly's satisfaction with their dental care.

METHODS

This is a cross-sectional study of 495 elderly people aged between 65 and 74 years old, in the municipality of Montes Claros, MG, between 2008 and 2009. The study was carried out as part of a survey of the population's oral health from 2008 to 2009 ("SBMOC Project"), with a two-stage cluster complex probability sample. The methodology suggested by the World Health Organisation (WHO) was used, with the alterations proposed in the epidemiological survey of the Brazilian population's oral health.¹¹

We deemed the estimate for incidence of events of illness to be 50% of the population, error of 5.5%, no-response rate to be 2.0, ensuring proportionality by sex and *deff* (design effect) to be 2.0.¹¹ The clusters were randomly selected. We estimated a sample of 740 elderly people. Of those who agreed to take part, the study was composed of those who reported using dental care and who showed no deficiency in cognitive capacity, tested using the Mini Mental test version validated for Brazil, with total scores adjusted for the level of Education of the testee.⁸

The household interviews and examinations were conducted by trained interviewers and examiners. The data collection was carried out by 24 dental-surgeons who participated in special training (Kappa inter/intra examiners and intra-class correlation coefficient ≥ 0.60). This step involved the use of handheld computers with a program designed to collect data and simultaneously construct the database, called the Program in Health Data Collector (PHDC).¹² The examinations took place in a spacious, well-illuminated environment, using sterile mouth mirrors and probes approved by the Community Periodontal Index (CPI).²⁵

^a Ministério da Saúde (BR). Statute for the Elderly. Brasília (DF); 2003.

The dependent variable (evaluation of dental services) was obtained through the questions: Have you ever visited the dentist? How long ago? Where? Why did you go to the dentist? How would you rate the care? The variable was dichotomized based on the responses to this last question: dissatisfied (bad, poor or regular) or satisfied (good or excellent).

The main covariate considered was the type of service (SUS and other services – private / covered by health agreement / charity). The other independent variables were placed into three groups, with their respective sub-categories, defined in the theoretical model previously mentioned: primary determinants of oral health (external environment, oral health systems, personal characteristics), oral health habits (personal habits and use of official dental services and oral health outcomes (normative and subjective oral health conditions).^{1,11}

The exogenous variables in the Andersen & Davidson¹ (1997) theoretical model, which concern the age group and the ethnic group to which interviewees stated they belonged (self-reported race), were considered as personal characteristics in the primary determinants of oral health group.

In the external environment area, reported general state of health (reported chronic illness or being on medication), the influence of general health on quality of life – using the 12-Item Short – Form Health Survey (SF12) version validated for Brazil, with weighted scores for physical and mental health – and satisfaction with life. Individuals with SF12 higher than 50 and 42 respectively in the physical and mental areas were considered, according to this instrument, to have satisfactory quality of life.^b

We analysed the type of dental service used in the system of oral health care and statements of the household being included in the Family Health Strategy (FHS).

We deemed personal characteristics to be: age (dichotomised based on the median – 68 years old), self-reported race, sex, marital status, level of education (number of years of studies, categorised according to the education system at the time of the study), *per capita* income and reason for needing dental care.

Personal habits included information on oral hygiene (frequency and method used), oral self-examination and current and past tobacco and alcohol consumption.

The analysis of the use of official dental services covered access to information about preventing dental problems and frequency of visits to the dentist. The covariates of the normative condition of oral health included changes in oral soft tissues (mucous membrane), edentulism, using dentures, The DMFT

(decayed, missing and filled teeth) index and normative need for dental treatment, created from the variables: need for dental treatment (restoration of a tooth surface, restoring two or more tooth surfaces, crown for any reason, veneers, pulp treatment and restoration, extraction, remineralisation of white spot lesions and dental sealant); need for periodontal treatment, defined based on the Community Periodontal Index (CPI) ≥ 1 (bleeding on probing) and Periodontal Attachment Loss Index (PALI) ≥ 1 (4 to 5 mm); and the need for dentures (fixed or removable, partial or total). Those elderly people suffering from one or more of the above were considered to have a normative need for dental treatment.²⁴

The subjective condition of oral health were evaluated by self-perceived oral health, mastication, the appearance of the teeth and gums, speech as affected by the teeth and gums and the need for dental treatment, reporting having felt pain in the teeth and gums in the previous six months and the perceived impact of oral health on the physical and psychosocial dimensions, using the Oral Health Impact Profile (OHIP-14) validated for use in Brazil, categorised by absence or not of impact. Those individuals who responded in the affirmative (rarely / sometimes / often / always) to one or more of the 14 questions were classed as experiencing physical or psychosocial impact of oral health.

We used PASW[®] Statistics 18.0 software to analyse the data. As the study involved complex cluster sampling we adjusted it through the design effect by weighting. The descriptive analysis included absolute (n) and relative (%) frequency and relative frequency adjusted for design effect (%*) for categorical variables, mean and standard error (SE), adjusted for design effect for the quantitative variables. We used Poisson regression and adjustment for the study's design effect to estimate the adjusted and unadjusted ratio of prevalence in the bivariate and multivariate analysis of the correlation of the dependent variable and the 95% confidence intervals (95%CI) adjusted for design effect.

The study adhered to the National Health Council (NHC) ethical principles resolution (n° 196/96) and was approved by the Research Ethics Committee of the Universidade Estadual de Montes Claros (n° 318/06).

RESULTS

The invitation to participate in this study was made to 800 elderly people living in randomly selected clusters, of which 92% accepted and were evaluated. Of these, 735 responded to the question on using dental services and 1.6% were not included as they reported never having made use of this service. The cognitive capacity

^b Ware JE, Kosinski M, Keller SK. SF-36 physical and mental health summary scales: a user's manual. Boston: The Health Institute; 1994.

Table 1. Distribution of the elderly population according to the dependent variable and the primary determiners of oral health. Montes Claros, Southeastern Brazil, 2008/2009. (n = 495)

Variables	n	%	%*
Dependent variable			
Satisfaction with dental care ^a			
Satisfied	440	90.5	91.4
Dissatisfied	46	9.5	8.6
Primary determiners of oral health			
External environment			
Reported general health			
Chronic illness			
Yes	408	82.4	80.0
No	87	17.6	20.0
On medication ^a			
Yes	346	70.0	69.1
No	148	30.0	30.9
SF12 physical domain			
Unsatisfactory	271	54.7	55.4
Satisfactory	224	45.3	44.6
SF12 mental domain			
Unsatisfactory	81	16.4	17.0
Satisfactory	414	83.6	83.0
Satisfaction with life			
Dissatisfied or very dissatisfied	11	2.2	2.2
Neither Satisfied nor dissatisfied	54	10.9	10.8
Satisfied or very Satisfied	430	86.9	87.0
Oral health care system			
Service used ^a			
Other	365	74.2	72.9
SUS	127	25.8	27.1
Household part of the FHS ^a			
No	243	49.9	44.3
Yes	244	50.1	55.7
Personal characteristics			
Predisposition			
Age group (years)			
69 to 74	211	42.6	42.2
65 to 68	284	57.4	57.8
Self-reported race ^a			
Black/mixed/indigenous/yellow	311	63.0	63.3
White	183	37.0	36.7
Sex			
Male	232	46.9	47.7
Female	263	53.1	52.3
Marital status			
Single/widowed/divorced	171	34.5	30.5
married/civil partnership	324	65.5	69.5

Continue

Table 1. Continuation

Education (years)			
None	49	9.9	11.0
1 to 4 years	239	48.3	48.7
5 years or more	207	41.8	40.3
Availability of resources			
<i>Per capita</i> income in minimum wages ^{a,b}			
Lower than 0.5	140	29.2	31.9
From 0.5 to 1	173	36.1	35.3
From 1 to 1.5	94	19.6	19.5
Above 1.5	72	15.1	13.3
Need for dental services			
Reason of dental service use ^a			
For treatment	298	60.6	63.4
For scheduled check-up	194	39.4	36.6

* Estimated values with correction for design effect

^a Variation in n = 495 due to loss of information^b Based on minimum wage in 2008 (R\$ 415.00)

SF12: 12-Item Short-Form Health Survey version validated for Brazil

FHS: Family health strategy

questionnaire was completed by 632 elderly people and 20.7% were not included as they demonstrated cognitive problems. The study included 67.25% of those elderly people invited to take part who responded and met the two criteria for inclusion.

Taking into account adjustment for design effect, 91.4% of the elderly people questioned stated they were satisfied with dental care: 0.7% judged it to be very bad; 1.2% to be bad, 6.8% as regular, 67.1% as good and 29.7 as excellent. The majority of the elderly people did not use services offered by the SUS and reported living in a household included in the FHS. Mean age was 68.4 years old (SE = 0.15), the greater part were female, self-reported black, mixed, indigenous or yellow, stating *per capita* income of minimum wage or below (67.2%) and with access to information on avoiding oral health problems. Mean *DMFT* was 28.4 (SE = 0.41) (Tables 1 and 2).

In the bivariate analysis ($p \leq 0.05$), satisfaction with dental care was statistically associated with the following variables: chronic illness; being on medication; type of service and access to information on avoiding oral health problems. In the multivariate analysis, the prevalence of satisfaction with the dental care, independent of the other variables, was greater among those elderly people who used the SUS services, who had access to information on avoiding oral health problems, who reported they were not on medication and who classified the appearance of their teeth and gums as excellent or good (Tables 3 and 4).

Table 2. Distribution of the elderly population according to oral health habits and outcomes. Montes Claros, Southeastern Brazil, 2008/2009. (n = 495)

Variables	n	%	%*
Oral health habits			
Personal habits - Oral hygiene			
Daily oral hygiene frequency ^a			
None	11	2.2	2.4
Once or twice	242	49.2	50.8
More than twice	239	48.6	46.8
Means of oral hygiene ^a			
Only mouthwash or none at all	28	5.8	5.0
Only brushing	232	47.1	46.6
Brushing and tongue brushing and/or flossing and/or mouthwash	232	47.1	48.4
Others			
Self-examining			
No	394	79.6	78.0
Yes	101	20.4	22.0
Current and past tobacco consumption			
Yes	175	35.4	35.9
No	320	64.6	64.1
Current and past alcohol consumption			
Yes	189	38.2	39.9
No	306	61.8	60.1
Formal use of dental services			
Access to information on avoiding oral health problems ^a			
No	230	46.7	46.8
Yes	262	53.3	53.2
Frequency of visits to the dentist (years) ^a			
Three or more years	277	56.2	57.2
One to two years	84	17.0	15.9
Less than a year	132	26.8	26.9
Oral health outcomes			
Normative conditions of oral health			
Alterations in the mucous membrane ^a			
Yes	82	17.2	17.1
No	394	82.8	82.9
Edentulism			
Yes	270	54.5	55.5
No	225	45.5	44.5
Denture use ^a			
No	78	15.9	14.5
Yes	414	84.1	85.5
DMFT			
32	286	57.8	59.0
27 to 31	68	13.7	12.6
23 to 26	70	14.1	15.1
0 to 22	71	14.4	13.3

Continue

Tabela 2. Continuation

Normative need for dental treatment			
Yes	350	70.7	70.2
No	145	29.3	29.8
Subjective conditions of oral health			
Self-perception of oral health			
Bad or very bad	26	5.2	5.3
Regular	137	27.7	28.2
Good or excellent	332	67.1	66.5
Self-perception of mastication			
Bad or very bad	71	14.3	14.4
Regular	133	26.9	27.5
Good or excellent	291	58.8	58.1
Self-perception of appearance of teeth and gums			
Bad or very bad	67	13.5	13.2
Regular	135	27.3	27.3
Good or excellent	293	59.2	59.5
Self-perception of speech as affected by teeth and gums			
Bad or very bad	29	5.8	5.1
Regular	80	16.2	16.6
Good or excellent	386	78.0	78.3
Self-perception of relationships as affected by oral health			
Affected	140	28.3	30.9
Not affected	355	71.7	69.1
Self-perception of the need for dental treatment ^a			
No	213	43.2	39.9
Yes	280	56.8	60.1
Pain in the teeth or gums in the last 6 months ^a			
Yes	126	25.6	25.0
No	366	74.4	75.0
OHIP ^a			
Impact	314	63.6	64.0
No impact	180	36.4	36.0

* Estimated values with correction for design effect

^a Variation in n = 495 due to loss of information

DISCUSSION

The analysis of the elderly people's satisfaction with their dental care is a sensitive indicator of the quality of service provided, able to support the planning of programs and policies for health and in greater use of services, because it is a measure established by the user. The effectiveness of the health care is determined, up to a point, by the service user's satisfaction with the service provided, and a satisfied consumer is more likely to make use of the health service, follow the recommended treatment and stay in contact with the care provider.^{20,23} Consumers' satisfaction with the care received is considered to be a parameter for analysing health service outcomes.⁵

Table 3. Result of the bivariate and multivariate analyses of the evaluation of dental care among the elderly according to the primary determiners of oral health. Montes Claros, Southeastern Brazil, 2008/2009.

Condition evaluated	Bivariate analyses				Multivariate analyses	
	Satisfied (%)	RP	95%CI	p	Adjusted model* RP (95%CI)	P
External environment						
Reported general health					-	-
Chronic illness					-	-
Presence of chronic illness						
Yes	90.2	1			-	-
No	95.9	1.06	1.00;1.12	0.023	-	-
On medication						
Yes	89.5	1			1	
No	95.6	1.06	1.01;1.12	0.013	1.05 (1.0;1.10)	0.050
SF12 Physical						
Unsatisfactory	90.1	1			-	-
Satisfactory	93.0	1.03	0.97;1.09	0.284	-	-
SF12 Physical						
Unsatisfactory	89.9	1			-	-
Satisfactory	91.6	1.02	0.93;1.11	0.659	-	-
Satisfaction with life						
Dissatisfied or very dissatisfied	74.0	1			-	-
Neither satisfied nor dissatisfied	87.1	1.17	0.81;1.70	0.393	-	-
Satisfied or very Satisfied	92.3	1.24	0.87;1.78	0.229	-	-
Oral health care system						
Service used						
Other	89.8	1			1	
SUS	95.4	1.06	1.00;1.11	0.024	1.07 (1.01;1.12)	0.013
Household part of the FHS						
No	88.7	1			-	-
Yes	93.9	1.05	0.99;1.12	0.085	-	-
Personal characteristics						
Predisposition						
Age (years) ^a	-	0.99	0.98;1.00	0.280	-	-
Self-reported race						
Black/mixed/indigenous/yellow	91.8	1			-	-
White	90.6	0.98	0.92;1.05	0.713	-	-
Sex						
Masculine	89.9	1			-	-
Feminine	92.7	1.03	0.96;1.09	0.333	-	-
Marital status						
Single/widowed/divorced	89.4	1			-	-
Married/civil partnership	92.2	1.03	0.96;1.10	0.357	-	-
Education (years)						
None	92.7	1			-	-
1 to 4 years	91.4	0.98	0.90;1.06	0.718	-	-
5 years or more	91.0	0.98	0.89;1.07	0.675	-	-

Continue

Table 3. Continuation

Availability of resources						
Per capita income in minimum wages ^b						
Lower than 0.5	89.9	1			-	-
From 0.5 to 1	92.2	1.02	0.94;1.11	0.555	-	-
From 1 to 1.5	93.4	1.03	0.95;1.13	0.388	-	-
Above 1.5	86.9	0.96	0.85;1.09	0.598	-	-
Need for dental services						
Reason of dental service use ^a						
For treatment	92.0	1			-	-
For scheduled check-up	90.2	0.98	0.91;1.05	0.581	-	-

RP: ratio of prevalence; 95%CI: 95% confidence interval

* Estimated percentage values adjusted for design effect

^a Variables deemed to be quantitative in the bivariate analyses

^b Based on minimum wage in 2008 (R\$ 415.00)

SF12: 12-Item Short-Form Health Survey version validated for Brazil; FHS: Family health strategy

The level of satisfaction with dental services among the elderly people we evaluated was high, and higher still with those who accesses services offered by the SUS. A high level of satisfaction has previously been observed in both national and international studies,^{9,14,16,20} independently of the form in which it was conceived and measured, whether from a quantitative or qualitative approach.⁵ In this study, of those assisted by SUS, 95.4% were satisfied, similar to the value recorded among service users (89%) of the SUS in Belo Horizonte, MG, in the study by Lima-Costa & Loyola Filho.⁹ However, in this study, the variable ‘satisfaction with the health service used’ was constructed based on the respondent stating they would recommend this service to others.

The higher levels of satisfaction among users of the SUS contrasted with possible infrastructure deficiencies still present in the health system which could, according to Donabedian³ (1988), negatively influence service users’ evaluation of the services.²² On the other hand, possible improvements in access to services and in their quality, due to the oral health policies implemented over the last few years, may have generated feelings of satisfaction. The apparent improvement in access may trigger satisfaction with the dental care itself. In the studies by Martins et al¹⁰ and Paim et al,¹⁵ 5.8% of the elderly people reported never having used such services; in this investigation, 1.6% said this.

It should be highlighted that this work took place in the home, not in the environment in which care is delivered by the dental care provider, which minimises possible feelings of recognition and consequent satisfaction. Some health and professional development policies in the municipality such as investments in professional training and qualifications, primary health care and giving a more human face to care, as well as wide social participation and greater awareness of the right

to health care, may have influenced the evaluation of dental services provided to the elderly by the SUS.^{7,15,22}

The elderly relate higher levels of satisfaction than those of younger service users.^{9,16,23} A population based national survey, incorporating five thousand Brazilian households, with adults over the age of 18, chosen by random sampling, showed that 27% of the individuals were satisfied with the functioning of the country’s health care, without distinguishing the type of service used.¹⁹ Marked socioeconomic inequalities, as well as the influence of social circumstances on the health of Brazilians, might be directly linked to divergent results, mainly due to regional differences in health care policies.⁶

There were higher levels of satisfaction with dental care among those who reported they were not on medication. These results are consistent with those of other studies which reported lower levels of satisfaction with the organisational quality of care among consumers with health problems.^{9,16,23}

According to the adopted theoretical model from Andersen & Davidson¹ (1997), and that proposed by Donabedian³ (1988), we expected correlations between satisfaction with dental care services and level of education, income and skin colour according to user’s self-reported race. However, in this study and in another carried out in Taiwan, the service users’ levels of education did not correlate with satisfaction with care received.²⁰ In South Africa, both socioeconomic status and race were found to be associated with satisfaction.¹⁴ The expected correlations were not confirmed in this research, possibly due to the homogeneity of the population’s income (82.0% earning minimum wage or less per month *per capita*).

Access to information on avoiding oral health problems has been independently associated with satisfaction

Table 4. Result of the bivariate and multivariate analyses of the evaluation of dental care among the elderly according to oral health habits and outcomes. Montes Claros, Southeastern Brazil, 2008/2009.

Condition evaluated	Bivariate analyses				Multivariate analyses	
	Evaluation of dental care*			p	Adjusted model*	p
	Satisfied (%)	RP	95%CI			
Oral Health Habits						
Personal habits - Oral hygiene						
Daily oral hygiene frequency ^a						
None	92.3	1			-	-
Once or twice	88.6	0.96	0.81;1.13	0.640	-	-
More than twice	94.2	1.02	0.86;1.20	0.807	-	-
Means of oral hygiene						
Only mouthwash or none at all	83.2	1			-	-
Only brushing	89.4	1.07	0.90;1.27	0.410	-	-
Brushing and tongue brushing and/or flossing and/or mouthwash	93.9	1.12	0.95;1.33	0.153	-	-
Others						
Self-examining						
No	90.9	1			-	-
Yes	92.9	1.02	0.95;1.09	0.516	-	-
Current and past tobacco consumption						
Yes	89.5	1			-	-
No	92.4	1.03	0.96;1.10	0.392	-	-
Current and past alcohol consumption						
Yes	89.1	1			-	-
No	92.9	1.04	0.97;1.11	0.241	-	-
Formal use of dental services						
Access to information on avoiding oral health problems ^a						
No	86.6	1			1	
Yes	95.4	1.10	1.03;1.17	0.004	1.09 (1.02;1.16)	0.010
Frequency of visits to the dentist (years) ^a						
Three or more years	90.2	1			-	-
One to two years	90.9	1.00	0.93;1.08	0.858	-	-
Less than a year	93.8	1.04	0.96;1.12	0.317	-	-
Oral Health Outcomes						
Normative conditions of oral health						
Alterations in the mucous membrane ^a						
Yes	91.8	1			-	-
No	91.1	0.99	0.92;1.07	0.838	-	-
Edentulism						
Yes	91.9	1			-	-
No	90.7	0.98	0.92;1.05	0.686	-	-
Denture use ^a						
No	86.6	1			-	-
Yes	92.4	1.06	0.96;1.17	0.205	-	-
DMFT ^a	-	1.00	0.99;1.01	0.240		

Continue

Table 4. Continuation

Normative need for dental treatment						
Yes	91.4	1			-	-
No	91.2	0.99	0.93;1.06	0.930	-	-
Subjective conditions of oral health						
Self-perception of oral health						
Bad or very bad	88.0	1			-	-
Regular	86.9	0.98	0.84;1.15	0.875	-	-
Good or excellent	93.4	1.06	0.92;1.22	0.406	-	-
Self-perception of mastication						
Bad or very bad	87.0	1			-	-
Regular	91.6	1.05	0.94;1.18	0.371	-	-
Good or excellent	92.2	1.06	0.96;1.16	0.245	-	-
Self-perception of appearance of teeth and gums						
Bad or very bad	83.5	1			1	
Regular	90.8	1.08	0.95;1.24	0.213	1.08 (0.94;1.24)	
Good or excellent	93.3	1.11	0.99;1.25	0.062	1.13 (1.00;1.28)	0.043
Self-perception of speech as affected by teeth and gums						
Bad or very bad	85.3	1			-	-
Regular	93.3	1.09	0.93;1.28	0.265	-	-
Good or excellent	91.3	1.07	0.91;1.24	0.384	-	-
Self-perception of relationships as affected by oral health						
Affected	91.7	1			-	-
Not affected	91.2	0.99	0.93;1.05	0.864	-	-
Self-perception of the need for dental treatment ^a						
No	88.3	1			-	-
Yes	93.2	1.05	0.99;1.12	0.095	-	-
Pain in the teeth or gums in the last 6 months ^a						
Yes	89.4	1			-	-
No	92.1	1.03	0.96;1.10	0.411	-	-
OHIP						
Impact	90.3	1			-	-
No impact	93.2	1.03	0.97;1.09	0.300	-	-

RP: ratio of prevalence; 95%CI: 95% confidence interval

* Estimated percentage values adjusted for design effect

^a Variables deemed to be quantitative in the bivariate analyses

with dental care services. Tung & Chang²⁰ reported that satisfaction with health services was associated with educational campaigns on preventing and controlling disease. Donabedian³ (1988) states that the process, i.e. the interpersonal patient-professional relationship, affects evaluations of health services. Haddad⁷ and Motta & Aguiar¹³ highlight that the implementation of new curricular guidelines in graduate and post-graduate courses as enabling conceptual changes in the profile of professionals, focussing on comprehensive care of individuals, families, social groups and communities, in addition to continuing education in preparing human resources for primary health care. It is possible that

professionals at higher levels who work in the Family Health Teams of the municipality of Montes Claros had specialised training, mainly in family and community medicine or with multi-professional residency in family health.¹⁸ This could be explained in future research. It is possible that the differentiated training of these professionals has brought about more humanised health care and affected the way users are received, benefitting the patient-professional-service interaction.

We expected lower levels of satisfaction with dental care among those who experienced the negative impact of oral health problems on their quality of life, as this

satisfaction could be influenced by health outcomes.³ However, the normative situation of oral health we found may reflect factors related to the conditions of self-care and lifelong dental care. Consequently, it may not imply satisfaction with recently received dental care.

The higher level of satisfaction found among the elderly who had a positive perception of the appearance of their teeth and gums indicated the importance of this parameter for users' perception of their own health in relation to services received.^{1,11}

There was independent correlation with access to information on avoiding oral health care problems. SUS service users and those who have a positive perception of their own appearance showed higher levels of satisfaction. In the model proposed by Andersen & Davidson¹ correlation was found between variables from the four sub groups. This theoretical model¹ and that proposed by Donabedian³ (1988) were both confirmed in this research.

The elderly who used SUS dental services were more satisfied with the care, as were those who were not on medication, those who perceived their own teeth and gums in a positive way and those who reported having

more access to information on avoiding oral health problems. We concluded, therefore, that the SUS health policies implemented in the municipality have started to yield the hoped for positive results.

The limitations of this study lie in the construction of the dependent variable and the lack of assessment of the resolution and the structure of health services. We would also like to point out that the process of evaluating dental services and the variables investigated is dynamic. Therefore, cause and effect will certainly vary with the passage of time and, as this is a cross-sectional study, it is not possible to establish a temporal relationship between the associations observed. On the other hand, it is noteworthy that the results are reliable; being a result of random sampling of clusters representative of the elderly of the municipality, and the data analysis was carried out with adjustments for design effect.

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