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Use of care and the oral health status of people aged 60 years and older in France: results from the National Health and Disability Survey

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Objective: We aimed to analyze, from the data in a national survey, the use of oral care and the oral health status of patients living at home or in an institution.

Background: Patients aged 60 years and older have important oral health needs, but their oral management may differ according to their immediate environment. The fact of living at home or in an institution can influence the use of care and alter the patients' perception of their oral health status.

Methods: The data analyzed were taken from a survey on disability and health carried out in 2008–2009, which is representative of the population living in France. It consists of two sections, one centered on disability and health among home-dwellers and the other on patients living in an institution. In each of these two populations, we carried out descriptive analysis of three themes: use of care, forgoing of care, and oral health.

Results: Although visits to physicians and specialists were frequent, visits to dentists were lower in both populations. While a minority of patients forwent care, it was dental care that was mainly forgone by both home-dwellers and institutionalized patients. The cost factor remained the principal reason, but other factors such as fear or accessibility problems were cited. Use of a dental appliance was considerably more frequent among institutionalized patients than among home-dwellers, with just over half the institutionalized population wearing a dental appliance. Perceived state of oral health remained difficult to interpret.

Conclusion: To improve access to oral care for the elderly, the patients, their entourage and health providers need increased awareness and information on the importance of good oral health. Better information must be associated with regular clinical examination.

Keywords: dental care, health care access, elderly, home-dwellers, community-dwellers, institution, national Disability and Health Survey, France

Background

The oral health of the elderly is a major public health challenge. The aging population continues to grow under the double effect of increased life expectancy and the advance of the baby boom generation. Patients aged 60 years and older represent ~17% of the French population, and by 2050, in Europe, this proportion is projected to reach 25%–33% of the total population.¹

With regard to oral health, the treatment of many dental disorders^{2–4} (caries, periodontal diseases, and missing teeth) is influenced by the patient's ability to cooperate.^{5,6} These disorders can have a considerable effect on health:^{7–9} poor oral health directly affects nutrition, because of pain, missing teeth, periodontitis, dry mouth, or dysphagia. Pathological microorganisms present in saliva, tartar, caries, deposits on the mucosa,

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and on dentures may be inhaled and cause pneumonia. Microorganisms of oral origin are compounding factors and morbidity cofactors in the elderly. Poor oral health also influences quality of life^{10,11} by causing impairment of self-image and of relationships with others. Age-related disorders and dependence affect oral status either directly^{12,13} or indirectly, as loss of cognitive, motor, and sensory faculties prevents maintenance of good oral hygiene.^{5,6,14} In spite of this objective need of oral management, the dental care consumption of this population is very low and a number of barriers have been identified, which may be either patient- or practitioner-related ones.^{15,16} These patients' immediate environment and their residential arrangements appear to play a capital role in improving the follow-up of their oral health, and important questions are raised in all developed countries on the quality of care provided by institutions caring for elderly patients, compared in particular with management at home.^{17,18}

In France, epidemiological and public health surveys have been carried out most recently in the general population. In the adult population, the rate of use of dental surgeons is ~40%.¹⁹ However, given the usual public health indicators, there is lack of data on adults' oral health practices, particularly among the elderly. The recent studies are only based on socioeconomic and cultural considerations, as well as the supply of oral health care.²⁰ This work analyzes practices among patients aged 60 years and older using an anthropological approach. The distinctive feature of this field study is that it aims to consider each individual in his or her immediate environment. Thus, the principal objective of this study is to analyze the use of oral care and the oral health status of home-dwelling and institutionalized patients aged 60 years and older, based on data from a national survey.

Methods

Sources

The source of the data used in this study was the Disability and Health Survey – Ordinary Household Section and Institutions Section, which was performed in 2008 and 2009 by the French National Institute of Statistics and Economic Studies (INSEE) and the French Head Office of Research, Studies, Evaluation and Statistics of the Social Affairs Ministry (DREES).

The authors confirm that all data underlying the findings are fully available without restriction.²¹ These data yielded information on the patients questioned (age, gender, educational level, and level of income), their health status (diseases, use of health care, and prevention), identification of disability (deficits, functional limitations, and restrictions of activity), and lastly, items relating to their social participation

and their environment (family environment, presence of family and/or professional caregivers, type of accommodation, accessibility, education, employment, income and benefits, leisure occupations, and perceived discrimination).

The Household Section concerned 29,931 patients who were living at home, representative of the home-dwelling population of metropolitan France and its overseas departments and territories (62,457,451), while the Institutions section included 9,104 institutionalized patients, representative of the institutionalized population of the same areas (636,309), distributed among 1,519 facilities (institutions for adults with disabilities, residential facilities for the dependent elderly, and retirement homes).

The two sections of the survey were explored conjointly to analyze the question of use of care and oral health status through responses to identical questions.

Ethics

This study was planned as a research project. All precautions were taken by the INSEE to ensure anonymity of the data. This study was declared of public interest by the National Council of Statistical Information and was approved by the French Data Protection Authority (CNIL, French law number 78-17). According to the French law, written informed consent was not required for this type of study.

Sample and study population

Our study concerned patients aged 60 years and older. Those who were unable to answer all the questions were withdrawn from the study because of too many missing values. We included 9,962 home-dwellers (mean age: 71.77 years, SD: 8.48 years; men: 43.57%) and 4,167 institutionalized patients (mean age: 84.21 years, SD: 8.85 years, men 26.73%). Three levels of education were stated, distributed as follows: no diploma (26.08%), non-high school graduate (56.32%), and high school graduate (17.60%) for home-dwellers; and no diploma (44.36%), non-high school graduate (46.88%), and high school graduate (8.76%) for institutionalized patients.

Questions of interest

In each of the two populations, we carried out descriptive analysis according to three themes. Several closed questions were put forward on each theme (Tables 1–3).

Use of care

In the survey questionnaire, use of care was analyzed by three questions, concerning visits to a general practitioner, visits to a specialist, and visits to a dentist.

Table 1 Use of care

Health care availed	Home-dwellers (n=9,962), n (%)	Institutionalized patients (n=4,167), n (%)
During the past 12 months, have you personally consulted a general practitioner at least once?		
Yes	9,547 (94.26)	3,959 (97.38)
No	414 (5.74)	194 (2.62)
During the past 12 months, have you personally consulted a specialist at least once?		
Yes	7,088 (66.76)	2,268 (50.52)
No	2,866 (33.24)	1,812 (49.48)
During the past 12 months, have you personally consulted a dentist?		
Yes	3,875 (46.24)	818 (18.49)
No	6,074 (53.76)	3,225 (81.51)

Table 2 Forgoing of care

Factors	Home-dwellers, n (%)	Institutionalized patients, n (%)
During the past 12 months, have you had to forgo medical, surgical, or dental care even though you really needed it? (HP: n=9,320; IP: n=3,768)		
Yes, several times	712 (5.65)	141 (3.5)
Yes, once	673 (6.13)	179 (5.33)
No, never	7,935 (88.22)	3,448 (91.17)
Regarding the last time you forwent care, did this relate to (HP: n=1,382; IP: n=317)		
Hospitalization (including day hospital or hospital at home)	107 (5.24)	22 (7.16)
Dental or orthodontic care	911 (71.08)	227 (68.86)
Visit to a general practitioner	77 (4.91)	18 (5.28)
Visit to a specialist	287 (18.77)	50 (18.70)
If the last time you forwent care related to dental or orthodontic care, what was the main reason? (HP: n=911; IP: n=227)		
I couldn't afford it (too expensive, or poorly reimbursed by my health insurance)	564 (66.30)	72 (31.30)
The wait to get an appointment was too long	19 (2.77)	3 (1.07)
I didn't have a referral letter	1 (0.01)	0 (0)
I didn't have time	19 (2.26)	1 (0.11)
I live too far away/there isn't enough transport/it's too complicated to get there	49 (3.05)	28 (12.88)
I'm afraid of the dentist and/or dental treatment	67 (6.68)	35 (17.80)
I thought I'd wait to see if it got better on its own	29 (4.12)	5 (1.17)
I didn't know a good dentist	6 (0.36)	2 (0.33)
Other reasons	157 (14.45)	80 (35.34)
Did the treatment you forwent relate to (HP: n=909; IP: n=225)		
Placing or maintenance of a dental prosthesis (bridge, crown), dentures, or an orthodontic appliance	624 (72.48)	132 (58.78)
Treating a cavity	141 (12.93)	34 (11.84)
Routine visit to the dentist or general checkup	144 (14.59)	59 (29.38)

Abbreviations: HP, home-dwelling patients; IP, institutionalized patients.

Table 3 Perceived and objective oral health

Elements of oral health	Home-dwellers, n (%)	Institutionalized patients, n (%)
Would you say that the state of your teeth is (HP: n=9,931; IP: n=4,042)		
Very good	723 (8.74)	132 (3.55)
Good	3,221 (39.04)	1,026 (27.23)
Moderately good	3,265 (31.23)	1,401 (35.35)
Poor	1,795 (14.20)	940 (20.85)
Very poor	927 (6.79)	543 (13.02)
Have you (HP: n=9,959; IP: n=4,026)		
All of your own teeth	265 (3.17)	72 (1.34)
All of your teeth, some of which have been treated or replaced	3,020 (38.64)	648 (14.32)
Lost some of your teeth	2,907 (29.35)	1,234 (30.38)
Lost all or nearly all of your teeth	3,767 (28.84)	2,072 (53.96)
If you have not lost all your teeth (HP: n=6,177; IP: n=1,916)		
Do you have any of the following tooth problems?		
Untreated cavities	492 (4.86)	189 (8.19)
Loose teeth or receding gums	974 (13.96)	318 (12.72)
Frequent dental abscesses	122 (1.57)	30 (1.4)
None of the above	4,786 (81.70)	1,464 (81.19)
Do you wear dentures? (HP: n=9,962; IP: n=3,992)		
Yes	5,150 (45.15)	1,847 (51.5)
No	4,812 (54.85)	2,145 (48.5)
Can you bite and chew hard food such as a crisp apple (with your dentures if worn)? (HP: n=9,961; IP: n=4,037)		
Yes, easily	5,497 (66.85)	1,159 (27.71)
Yes, with some difficulty	1,860 (15.77)	725 (18.68)
Yes, with much difficulty	952 (6.51)	457 (12.03)
No, I can't	1,652 (10.87)	1,696 (41.58)

Note: Because of several possible responses to the question "Do you have any of the following tooth problems", the sum of the percentages is >100.

Abbreviations: HP, home-dwelling patients; IP, institutionalized patients.

Forgoing of care

In the questionnaire, four questions addressed forgoing of care in general and more specifically forgoing of oral care.

Patients who had responded "Yes, several times" or "Yes, once" to the first question "During the past 12 months, have you had to forgo medical, surgical, or dental care even though you really needed it?" went on to the second question. This related to the type of care that had been forgone. For patients who had last forgone dental or orthodontic care, the third question examined the reasons for forgoing care and the fourth questioned the type of dental care that had been forgone.

Perceived and objective oral health

Five questions assessed perceived oral health, state of dentition, dental problems, denture wearing, and ability to bite and chew. It should be noted that the set of responses related to

objective oral health is based on the survey responses and not on clinical examination.

Results

The results are shown in Tables 1–3. “Don’t know” responses and refusals to answer any question were not entered in the analyses because of their small number. The percentages given in the tables are weighted percentages.

Use of care

Visits to a general practitioner during the previous 12 months were very frequent in both populations, at 94.26% for home-dwellers and slightly higher (97.38%) for patients living in an institution.

Visits to a specialist were frequent in both populations, but more frequent for home-dwellers (66.76%) than for institutionalized patients (50.52%).

Visits to dental surgeons were much less frequent in both populations. During the previous 12 months, 46.24% of home-dwellers had seen a dentist, while this figure fell markedly to 18.49% for institutionalized patients.

Forgoing of care

Forgoing of care, for all types of care, concerned only a minority of the two study populations (<12% of home-dwellers and <9% of institutionalized patients).

When care was forgone, in the majority of cases, this was dental care (71.08% of home-dwellers and 68.86% of institutionalized patients).

When dental care was forgone, home-dwellers explicitly cited three main reasons: cost (66.3%), nervousness and fear (6.68%), and postponement (4.12%).

Patients living in an institution also cited the economic factor in the first position, but the proportion was lower (only 31.3%). Fear of the dentist and of dental treatment came second (17.80%). Problems of accessibility were cited in the third position (12.88%).

The type of care that the patients needed and that they had decided to forgo was mainly the placement and/or maintenance of dental appliances (72.48% of home-dwellers, 58.78% of institutionalized patients). This was followed by checkup visits for 14.59% of home-dwellers and 29.38% of institutionalized patients. Forgoing of treatment for caries came third, at ~12% in both populations.

Perceived and objective oral health

Nearly 48% of home-dwellers considered that their oral health was “good” or “very good”, compared with 31% of

institutionalized patients. Among home-dwellers, 31.23% perceived their oral health as “moderately good”, compared with 35.3% of institutionalized patients. Oral health was perceived as “poor” or “very poor” by 21% of home-dwellers but by nearly 34% of institutionalized patients.

The proportion of patients who stated that they had “lost all or nearly all their teeth” was 28.84% among home-dwellers and 53.96% among institutionalized patients. Among home-dwellers, 3.17% stated that they had all their teeth, compared with 1.34% of institutionalized patients. About 30% in both populations stated that they had “lost some of their teeth, but had enough to be able to chew without dentures”. Lastly, 38.64% of home-dwellers stated that they had “all their teeth, of which some had been treated or replaced”, compared with 14.32% of institutionalized patients.

The most common dental problems in both populations were loosened teeth (13.96% of home-dwellers, 12.71% of institutionalized patients), followed by untreated caries (4.86% of patients living at home, 8.19% of institutionalized patients) and frequent dental abscesses in ~1.5% in both populations. The majority of patients, >81%, stated that they had none of these dental problems.

While 45.15% of home-dwellers stated that they wore dentures, the proportion rose to 51.5% in institutionalized patients.

Nearly 67% of home-dwellers stated that they could “bite and chew hard foods such as a crisp apple”, whereas this was true of only 27.71% of institutionalized patients. More than 22% of home-dwellers and >30% of institutionalized patients experienced difficulties with the same. Lastly, 10.87% of home-dwellers and 41.58% of institutionalized patients declared that they were not able to bite and chew hard foods.

Discussion

The first part of our study concerned use of care. In both populations, visits to a general practitioner were frequent. This may be explained by the organization of the health system: whereas patients living at home benefit from the network of general practitioners in private practice, in institutions, coordinating physicians are in charge of following up patients and general practitioners visit the patients quite regularly. This health coverage allows efficient referral to specialists, who were visited by >50% of both populations. Looking at the use of oral care in patients aged 60 years and older, we observed a distinct decrease, particularly in institutions. Clerc-Urmès et al²² showed that functional limitations and cognitive impairment were barriers to the use of

dental care in elderly home-dwelling patients. The presence of carers and their awareness with regard to oral health led to improved use of care, enabling the older patient to visit practitioners. For this same population living at home, we suggest that social inequalities and the insufficient density of dental surgeons are major obstacles. The questions of financial resources, health coverage, and the supply of care are thus major issues in access to dental care.²³ In their study in 2013, Thiébaud et al²⁴ showed that life in an institution could be a barrier to seeking care from a dental surgeon. Considering the results from various previous studies, several reasons could explain the infrequent use of oral care by residents in retirement homes. The management of elderly patients requires an important technical platform and few institutions possess a dental chair in their facility, hindering the provision of oral care.^{25,26} Patients therefore have to travel to a private dental practice and do not always have anyone available to accompany them. Certain fatalism may also be observed in patients who view the deterioration of their oral health as “normal” and age-related and thus consider it as less important than their general health. In addition, the onset of cognitive disorders helps to make these patients less aware of their problems and so to be less demanding of care.^{27,28} Lastly, the nursing staff are not always mindful of the importance of oral health²⁹ and are often reticent toward oral care, perceived as unrewarding.^{30,31}

Because of this difference between use of care in general and the use of oral care, we considered it important to examine the forgoing of care and its reasons. The second part of our work shows that while forgoing of medical care is fortunately a minority phenomenon, it primarily concerns dental care among both home-dwellers and institutionalized patients. In both our study populations, the economic factor was the main reason. Numerous studies have examined this factor^{23,32,33} and it remains linked to the more general problem, which affects the whole population, of management of oral health in France: oral care costs amount to €10.6 billion a year, of which 57% consists of fee surcharges or nonreimbursable care. Since 2008, such care is primarily paid for by supplemental insurers, who bear 39% of the cost compared with 33% borne by national health insurance and 25% by the patients themselves. The result is that in 2012, 18% of the French population abstained from going to the dentist for financial reasons, a percentage that is twice as high as the European mean.³⁴

Fear of the dentist or of dental treatments was the second reason for forgoing care, which was cited by both home-dwelling and institutionalized patients. Paradoxically,

although fear of the dentist is frequently mentioned, it is little documented.³⁵ This aspect tends to be analyzed from the angle of life experience and culture: in a study aiming to identify possible means of reducing the barriers to oral care in older people, Borreani et al³⁶ showed that patients who fear visiting the dentist have a long and complex dental history, and that negative experiences, particularly during childhood, strongly influence their present attitude to dentistry and dental staff.

Whereas home-dwellers placed in third position the postponement of treatment while waiting for their problems to improve, institutionalized patients cited problems of physical accessibility. Several studies have, however, shown that the difficulties that may be faced in accessing oral care in institutions are not restricted to the physical barrier alone, even if this plays a preponderant role. Two kinds of problems can be differentiated: on the one hand, patient-related problems³⁷ (difficulties of travel and transport, unavailability of an accompanying patient, and problems of follow-up and screening) and on the other hand, obstacles and barriers related to the health professionals^{16,26,38} (absence of a technical platform, difficulties in management due to poor patient cooperation, and inadequate training of the health care teams).

If we look at the type of care that was required and which the patients had forgone, it is not surprising to see that this was mainly the placement and/or maintenance of dentures. This corresponds to the barrier of cost and the inadequate reimbursement of this type of care by the health coverage system. It affects both populations to varying degrees, which may be related to the patients' socioprofessional category or their standard of living. The type of facility in which they live may also play a role. A recent meta-analysis showed that the legal status of the institution (profit-making or non-profit-making institutions) could affect the quality of the care given.³⁹ On the other hand, forgoing checkup visits or caries treatment cannot be attributed only to the question of cost, as these procedures are normally entirely reimbursed by the health system. The other determinants of forgoing care, already mentioned, then seem to become preponderant.

These first two parts of our study thus lead us to consider that awareness of daily oral hygiene should be considered an important lever for action to promote the health and quality of life of the elderly. Evaluation of oral status and maintenance of good oral hygiene should be an integral part of the medical care given to elderly patients, regardless of their place of residence (their own home, or an institution) and their level of functional autonomy. The health care team, home attendants, caregivers, and the family environment must

be made aware of the importance of oral health in order to counter the various obstacles that make these patients more likely to forgo oral care.

In the third part of our study, we examined the perceived state of oral health of the patients of both populations. Use of dentures was markedly higher in institutionalized patients than in home-dwellers, with slightly more than half of the patients in institutions wearing them. From the results of the survey, we could not determine whether these were complete or partial dentures, with a view to determining the impact of total edentation on quality of life, although about the same proportion of institutionalized patients stated that they had lost all or nearly all their teeth. Overall, perceived oral health was better in home-dwellers, who more frequently reported “very good” or “good” oral health, than institutionalized patients did, and the former also had better ability to bite and chew without difficulty. The reported number of missing teeth was also higher in institutionalized patients. This may be related to more advanced age on entering an institution, as the health policy aims to keep the elderly in their own homes as long as possible. As institutionalized patients are older, their dental status may be poorer merely because of their greater age. Possibly, a greater degree of autonomy among home-dwellers could contribute to eating habits that could help to some extent to avoid malnutrition⁴⁰ and to improve oral comfort. However, in both populations, >80% of patients stated that they were free from problems of caries, receding gums and tooth loosening, or dental abscesses, whereas the literature shows that this population has an objective and increasing need for care. These patients appear to lack awareness of their oral status. As pain is often associated with dental problems, if the patient does not feel pain, he or she considers that they have no mouth problems. Possibly, elderly people are unaware of their oral problems if they have been in this condition for a long time and have gradually become used to their disorder, which they now think of as normal in view of their age. It is also possible that they voluntarily underestimate their need for care for the following reasons: fear of dental procedures, cost, or simply to avoid disturbing their routine by going to a dental surgery. Psychotropic medications or impaired cognitive status may also alter their perception of their own health. Lastly, we note that perception of oral health was more often positive in patients with a high educational and income level, as well as in patients who still had their teeth, compared with those who had lost them.⁴¹ The number of visits to the dentist was predictive of perceived health status. Patients who have lost all their teeth do not consult a dentist and their need for functional rehabilitation,

although great, is rarely perceived and expressed. In addition, patients’ subjective evaluation of their ability to chew often differs from that of the professionals.⁴²

The last part of our study highlighted the difficulty of analyzing expressed perceptions of health. Analysis must necessarily take into account the respondents’ personal history and must include full intraoral examination. Negative perception of oral health status may correspond to unmet expectations (pain, discomfort, or difficulty in chewing or swallowing) or to a refusal of problems related to the repercussions of normal aging of the mouth (refusal of loss of teeth, of a dental appliance). Conversely, oral health that is perceived as satisfactory may mask an oral situation that requires specialized management. Regular clinical oral examination of institutionalized patients and home-dwellers aged >60 years would certainly ensure early management of and improved oral health.

The data used in our study were taken from the national Disability and Health surveys carried out among patients of all ages living in institutions and in their own homes. These two large structural surveys collected numerous elements relating to functional status (diseases, disabilities, and limitations), restrictions on social participation (access to employment, training and leisure activities, and elements of standard of living), and environmental factors (family, relatives and friends, technical assistance, home alterations, accessibility of public places, and perceived discriminations) reported by individuals in each of the populations. We chose to carry out a descriptive analysis of these results, for patients aged 60 years and older, each in their usual environment, for each of the three themes selected for our study.

Our anthropological approach aimed to consider each individual in his or her immediate environment. The descriptive data demonstrated, in each population, differences in the responses given according to type of residential arrangement. However, it remains indispensable to increase the awareness of health care teams, caregivers, families, and the elderly themselves of the importance of maintaining good oral health if we are to achieve successful aging for all individuals.⁴³ Lastly, we note that perception of oral status may be affected by a multitude of emotional, sociocultural, economic, psychological, or physical factors.

Conclusion

Oral disorders are among the most common chronic conditions worldwide. With advancing age, these disorders become even more significant. Systemic diseases affect oral status, and, conversely, poor oral status adversely affects general

health. The hygiene and care of the mouths of elderly people are often abandoned because of resignation, loss of cognitive and motor faculties, or sensory loss through decline in the five senses. Although, today, we are aware of the negative impact that oral disorders have on systemic disorders when associated with aging, they are still underestimated and disregarded by the public at large. The factors that restrict the access of elderly patients to oral care appear to be numerous and often interdependent. They are related to insufficient awareness among the elderly themselves and among professionals, as well as institutional causes. It is currently urgent, with a view to prevention, that caregivers, care providers, and the patients themselves should be informed of the benefits to their health of having a healthy mouth. The information given must be accompanied by regular clinical examinations, regardless of the patient's type of residential arrangement.

Disclosure

The authors report no conflicts of interest in this work.

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