

Reasons for attending dental-care services in Ouagadougou, Burkina Faso

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Objective To determine why patients attend dental-care facilities in Ouagadougou, Burkina Faso and to improve understanding of the capacity of oral health-care services in urban west Africa.

Methods We studied a randomly selected sample of patients attending 15 dental-care facilities in Ouagadougou over a 1-year period in 2004. Data were collected using a simple daily record form.

Findings From a total of 44 975 patients, the final sample was established at 14 591 patients, of whom 55.4% were new patients and 44.6% were "booking patients". Most patients seeking care (71.9%) were aged 15–44 years. Nongovernmental not-for-profit dental services were used by 41.5% of all patients, 36% attended private dental-care services, and 22.5% of patients visited public services. The most common complaint causing the patient to seek dental-care services was caries with pulpal involvement (52.4%), and 60% of all complaints were associated with pain. The patients' dental-care requirements were found to differ significantly according to sex, health insurance coverage and occupation.

Conclusion Urban district health authorities should ensure provision of primary health-care services, at the patients' first point of contact, which are directed towards the relief of pain. In addition to the strengthening of outreach emergency care, health centres should also contribute to the implementation of community-based programmes for the prevention of oral disease and the promotion of oral health. Exchange of experiences from alternative oral health-care systems relevant to developing countries is urgently needed for tackling the growing burden of oral disease.

Keywords Dental health services/utilization; Patient acceptance of health care; Toothache; Insurance, Dental/utilization; Dental caries/therapy; Periodontal diseases/therapy; Dental Occlusion, Traumatic/therapy; Tooth Eruption, Ectopic/therapy; Mouth mucosa; Age factors; Sex factors; Socioeconomic factors; Burkina Faso (*source: MeSH, NLM*).

Mots clés Service hygiène dentaire/utilisation; Acceptation des soins; Odontalgie; Assurance frais dentaires/utilisation; Carie dentaire/thérapeutique; Occlusion dentaire traumatique/thérapeutique; Parodontite, Maladies/thérapeutique; Eruption ectopique dent/thérapeutique; Muqueuse buccale; Facteur âge; Facteur sexuel; Facteur socioéconomique; Burkina Faso (*source: MeSH, INSERM*).

Palabras clave Servicios de salud dental/utilización; Aceptación de la atención de salud; Odontalgia; Seguro odontológico/utilización; Caries dental/terapia; Oclusión dental traumática/terapia; Enfermedades periodontales/terapia; Erupción dentaria ectópica/terapia; Mucosa bucal; Factores de edad; Factores sexuales; Factores socioeconómicos; Burkina Faso (*fuelle: DeCS, BIREME*).

Arabic

Bulletin of the World Health Organization 2005;83:650-655.

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Introduction

As described in the recent *World oral health report 2003* oral diseases have a considerable impact on individuals and communities, as a result of the pain and suffering, impairment of

function and reduced quality of life that they impose (1). In several countries in west Africa, oral diseases have been largely neglected and not prioritized by health planners, and therefore oral health-care programmes have not been integrated into

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Ref. No. 05-022889

(Submitted: 18 May 2005 – Final revised version received: 21 June 2005 – Accepted: 13 July 2005)

national and community health programmes (1, 2). This is not surprising because most of these countries face a high prevalence of serious life-threatening chronic and diverse communicable diseases such as HIV/AIDS, tuberculosis, and malaria (3, 4).

Epidemiological data on oral health are scarce in many countries of west Africa, but certain patterns have been noted: women and urban communities are more affected by dental caries than are men and rural communities, and most adults and children have untreated dental caries associated with pain and risk of spreading infections (5–9). These facts reflect the inadequate response of current oral health-care services. Serious constraints exist regarding the availability and accessibility of oral health-care services, and the lack of community-oriented care is evident (1, 10). Although health-care services may appear to be somewhat better in urban than in rural settings (e.g. better rates of childhood immunization, better access), the trend is for health-care systems in African cities to adapt to cope with increasing demand for their services, in contrast to the rather passive health-care systems of today (11).

The growing challenges in oral health care are also confirmed by a recent epidemiological study carried out in south-west Burkina Faso (12). At age 6 years, 38% of children had dental caries, with the prevalence being higher in urban than in rural areas. At age 12 years, the prevalence of caries was significantly higher among children in urban areas (33.8%) than in rural areas (21.2%). Among those aged 18 years or aged 35–44 years, caries affected 53.9% and 72.8% of the population, respectively. In all age groups, most caries were left untreated or were eventually treated by tooth extraction.

This pattern of disease reflects the fact that the population in Burkina Faso has a poor standard of living and poor access to restorative dental care, and that the existing primary health-care resources are inadequately used for oral health care. In such a context, a visit to a dental-care facility would mainly be undertaken for symptomatic reasons and not for restorative care.

In response to problems encountered in financing health-care services (problems that are being faced by the majority of west African countries), strategies have been introduced in line with the Bamako Initiative that the government of Burkina Faso adopted in 1987 (13). The Bamako Initiative aimed to improve access to essential health care and to strengthen the contributions made by the community to the costs of health-care services.

In 2002, the population of Burkina Faso was estimated at 12.6 million people, with the urban population representing 16.9% of the total (13) and 10% of the population living in the capital, Ouagadougou.

The health-care system in Burkina Faso has a pyramidal structure organized at four levels, and is focused on the 53 sanitary districts (14). The lowest level at which oral health-care services are provided (the second level) is the medical centre, followed by nine regional hospital centres (the third level), and two university hospitals (the fourth level); oral health-care services are not provided at the first level, that of primary health-care centres. In 2004, most dentists and dental nurses were practising in two major cities of the country, Ouagadougou and Bobo-Dioulasso, owing to the lack of facilities and to the unequal distribution of dental-care personnel. In Ouagadougou, important dental-care services are also provided by nongovernmental not-for-profit health centres (six centres) and by the former health-care sector (mostly centres run by missionaries or nongovernmental organizations), and both these

categories of services are largely attached to the public health-care system. The third category of oral health-care services comprises dental facilities within the private sector. Currently, there are 14 private dental clinics in Burkina Faso. In the last 10 years, private dental care has been subject to very important expansion, almost exclusively in Ouagadougou.

In 2004, there were only 188 oral health-care workers providing dental-care services in Burkina Faso, and eight dental-care staff were involved only in administrative tasks. Oral health-care personnel officially comprised 57 dental officers and 131 dental nurses, nearly all of whom were employed by the Ministry of Health. A total of 60% of the dentists and 32% of the dental nurses were concentrated in Ouagadougou. Outside this formal system, there was an unknown number of ambulant dental healers in the country.

The purpose of this study was to determine the reasons why patients attend dental health-care facilities in Ouagadougou, Burkina Faso, and to improve understanding of the capacity of oral health-care services in urban west Africa.

Methods

The survey performed was part of a research programme carried out by the Institut de Recherche pour le Développement, which focuses on social and spatial health disparities in Ouagadougou. The project was initiated in 2002 in partnership with the Ministry of Health and the Institut de Recherche des Sciences de la Santé of Burkina Faso. Ethical approval to undertake this project was obtained from the National Ethical Committee of the Ministry of Health.

Data collection

Data were collected from 15 of the 22 providers of dental-care services established in Ouagadougou, which were chosen by convenience sampling to be representative of the different types of dental-care facilities; data covered patients attending these services between January and December 2004. The method of data collection depended on the total number of patients attending (N) each dental-care facility per month. If $N \leq 100$, all the data were used. If $N \geq 100$, a random sample of 100 patients was used.

As no standardized system for filing records existed, several field tests were performed with the chiefs of all of the dental-care services in order to design a simple daily record form. This form listed the total number of patients received per day, the patients' attendance status (patients were classified either as a new patient or a "booking patient" — a patient who had attended dental-care services at least once over the past 3 months), sex, age, ethnicity, occupation, location area, oral complaint, clinical diagnosis, treatment and health insurance coverage (yes or no). The oral complaint and the clinical diagnosis were recorded only for new patients. The oral complaints were categorized on the standard form as "pain" and "others". The clinical diagnosis was categorized on the standard form as follows: "enamel and dentine caries", "pulpal involvement caries", "dental trauma", "periodontal diseases", "third molar eruption problems", "oral mucosal diseases" and "others".

Statistical analyses

The data were processed and analysed using the Statistical Package for Social Sciences for Windows (Version 13.0, SPSS Inc.). The data were described and analysed using frequency distributions. The differences in proportions were tested using

the χ^2 test. In cases where multiple related tests were performed, the Bonferroni correction was applied.

Results

Characteristics of the study sample

From a total of 44 975 patients, we randomly selected a sample of 14 591 patients (32%) attending the 15 dental-care services covered by the survey. Over the 12 months of data collection, no seasonal fluctuation was observed in patient attendance. The distribution of patients by age group, sex and attendance status is shown in Table 1. Patients seeking care were mostly aged 15–44 years (71.9%). A total of 36% of patients were students or schoolchildren, 21.1% were private-sector employees, and 15.9% were housewives. Only 11.2% of the patients benefited from health insurance; of these, 34.6% were private-sector employees, 33.4% were students or schoolchildren, and 10.8% were senior managers.

Seeking dental care

Nongovernmental not-for-profit dental-care services were used by 41.5% of all patients, while 36% of patients attended private services and 22.5% visited public services. A significantly higher proportion of women (45.5%, $P < 0.001$) preferred to use nongovernmental dental-care services, while services in the private sector were more often sought by men (38.6%). People in the older age groups more often preferred to seek treatment in the private sector, while the younger patients tended to consult nongovernmental dental-care services.

Nearly all patients (96.3%) covered by health insurance were consumers of private dental-care services. Both private-sector employees (52.2%) and senior managers (80.1%) were users of private services. Of the patients attending nongovernmental dental-care services, 68.3% were housewives. A significant proportion of patients (53.2%, $P < 0.001$) living in the periphery of the city preferred to consult nongovernmental services. Private-sector employees and senior managers were found significantly more often among booking patients, while housewives were more frequent in the group of new patients ($P < 0.001$). Nongovernmental services had a high proportion

Table 1. Frequency distribution of patients by age group, sex and attendance status, Ouagadougou, 2004^a

Age (years)	Sex		Attendance status		
	Male (6 822) ^b	Female (7 343) ^b	New (7 895) ^b	Booking (6 270) ^b	Total (14 165) ^b
0–4	1.5	1.3	1.9	0.7	1.4
5–14	13.5	11.8	13.0	12.2	12.7
15–24	22.2	26.0	24.9	23.2	24.1
25–34	30.0	31.2	31.1	30.0	30.6
35–44	16.7	17.8	16.2	18.6	17.2
45–54	10.4	7.9	8.2	10.3	9.1
> 55	5.7	4.0	4.7	5.0	4.9

^a Of the original sample of 14 591 patients, complete data were available only for 14 165.

^b Figures in parentheses are numbers of patients.

of new patients (45.8%), while private dental-care services were consulted by 43.4% of booking patients.

Reasons for consultation

The most common reasons for attendance were pulpal involvement caries (52.4%), enamel and dentine caries (17.5%), and periodontal diseases (14.5%). In total, 60% of all complaints were linked to pain; 79.5% of pulpal involvement caries, 70.7% of third molar eruption problems and more than 61% of the oral mucosal diseases and trauma of the teeth were associated with pain.

Table 2 summarizes the number and percentage of oral complaints and care demands of new patients by age group. The frequency of enamel and dentine caries decreased with age, while the frequency of periodontal diseases increased with age. “Housewife” was the occupation category found most frequently among those consulting for pulpal involvement caries (69%) and complaining of pain (67.1%); the group least affected by pulpal involvement caries and by pain were senior managers (35.3% and 49.0%, respectively). All dental-care demands and frequency of oral complaints were associated with patient location.

Table 2. Frequency distribution of oral complaints and care demands of new patients in relation to age group, Ouagadougou, 2004

	% by age (years)							All ages
	0–4	5–14	15–24	25–34	35–44	45–54	> 55	
Oral complaints								
Pain	59.5 (88) ^a	61.5 (630)	62.7 (1 233)	59.3 (1 458)	57.9 (740)	54.1 (351)	57.5 (215)	59.7 (4 715)
Others	40.5 (60)	38.5 (394)	37.3 (733)	40.7 (999)	42.1 (537)	45.9 (298)	42.5 (159)	40.3 (3 180)
Care demands								
Enamel and dentine caries	18.4 (26)	25.4 (250)	18.1 (349)	16.5 (394)	15.7 (193)	15.0 (93)	10.4 (37)	17.5 (1 342)
Pulpal involvement caries	33.3 (47)	48.8 (480)	53.9 (1 040)	56.2 (1 341)	51.7 (636)	47.6 (296)	47.2 (168)	52.4 (4 008)
Dental trauma	10.6 (15)	3.0 (30)	3.7 (72)	3.2 (76)	3.6 (44)	3.1 (19)	2.5 (9)	3.5 (265)
Periodontal diseases	12.1 (17)	7.6 (75)	11.3 (219)	14.3 (341)	17.7 (217)	22.3 (139)	27.2 (97)	14.5 (1 105)
Third molar eruption problems	0.0 (0)	2.1 (21)	6.7 (129)	3.0 (71)	1.5 (18)	1.6 (10)	1.4 (5)	3.3 (254)
Oral mucosal diseases	17.0 (24)	1.2 (12)	1.2 (23)	1.1 (26)	1.5 (19)	1.4 (9)	1.7 (6)	1.6 (119)
Others	8.5 (12)	11.8 (116)	5.1 (98)	5.7 (136)	8.3 (102)	9.0 (56)	9.6 (34)	7.2 (554)

^a Figures in parentheses are numbers of patients.

Table 3. Frequency distribution of oral complaints and care demands of new patients in relation to sex and health insurance coverage, Ouagadougou, 2004

	% by sex			Health insurance coverage (%)		
	Male	Female	<i>P</i>	Yes	No	<i>P</i>
Oral complaints						
Pain	57.9 (2 248) ^b	61.1 (2 565)	< 0.01	57.3 (351)	60.2 (3 805)	NS ^a
Others	42.1 (1 633)	38.9 (1 636)	< 0.01	42.7 (262)	39.8 (2 519)	NS
Care demands						
Enamel and dentine caries	17.7 (661)	17.5 (713)	NS	30.2 (172)	15.8 (972)	< 0.001
Pulpal involvement caries	50.4 (1 888)	54.2 (2 208)	< 0.001	35.4 (202)	53.3 (3 286)	< 0.001
Dental trauma	4.3 (162)	2.8 (113)	< 0.001	4.4 (25)	3.7 (230)	NS
Periodontal diseases	15.5 (581)	13.5 (549)	< 0.05	16.7 (95)	14.6 (902)	NS
Third molar eruption problems	2.7 (101)	3.8 (155)	< 0.01	2.6 (15)	3.8 (232)	NS
Oral mucosal diseases	1.6 (61)	1.4 (59)	NS	0.7 (4)	1.7 (106)	< 0.01
Others	7.8 (291)	6.9 (280)	NS	10.0 (57)	7.0 (434)	< 0.05

^a NS = non-significant.

^b Figures in parentheses are numbers of patients.

The frequencies of oral complaints and care demands in relation to sex and health insurance coverage are presented in Table 3. Pulpal involvement caries was more common among women (54.2%; $P < 0.001$) than among men (50.4%), while men were significantly more often affected by dental trauma (4.3%) or periodontal diseases (15.5%) than were women ($P < 0.001$). Complaints of pain were significantly more frequent among women (61.1%; $P < 0.01$) than men (57.9%).

The proportion of patients affected by pulpal involvement caries was much higher among those who consulted nongovernmental dental-care services (60.8%) than among patients attending public (51.6%) or private (39.4%) services, respectively. The same pattern was found for pain complaints.

Discussion

These findings support the assumption that, in developing countries, visits to dental-care services are primarily carried out because of pain (mainly toothache). The study clearly indicates a huge demand for emergency care for patients presenting in the late stages of dental diseases. This observation is in accordance with those of previous studies conducted more than 10 years ago in the United Republic of Tanzania (15) and Sri Lanka (16), and recently in China (17), Nigeria (18) and Sri Lanka (19). For example, in the United Republic of Tanzania, 86% of patients sought treatment for pain, the main cause of which was dental caries (15).

One weakness of our study is that an information bias may have occurred because the dental-care providers involved were aware that they were participating in the study, and thus may have performed differently because they knew that they were being followed up. This is particularly pertinent for private dental-care providers who may tend to underestimate the volume of activity reports. However, the study took place over a period of 1 year and we anticipate that this is sufficient time to ensure “do-as-usual” practice. The majority of dental health services (70%) in Ouagadougou took part in this study; it is likely that the information provided is indicative of the situation in urban areas throughout several French-speaking countries in west Africa.

The results of this study reflect the oral health status of vulnerable groups. Women in general and housewives in particular seem to be the groups most affected by the advanced stages of dental caries, as they suffered relatively often from toothache. Particularly for women and the younger age groups, the cost of dental care seemed to be a major criterion in seeking help from the dental health sector, since these groups were significantly more frequent among patients of nongovernmental services, which are financially more accessible.

Only about 10% of all patients possessed health insurance, and most of these were private-sector employees and senior managers. The impact of health insurance coverage was that those with insurance sought dental services at an earlier stage than did those without insurance. Otherwise, our findings indicate that most of the patients served by the different dental services were new patients who attended for the first time, who had a specific demand for care, but who usually presented at a late stage.

Conclusions

Our study describes the demands of patients attending dental-care services in Ouagadougou, Burkina Faso. What implications do these results have for the response to demands for dental care in urban areas of other countries in west Africa? Firstly, provision for emergency oral care should be included in annual health programme planning at district and national levels. In concrete terms, district health authorities should ensure provision of primary health-care services, at the patient's first point of contact, that are targeted at the relief of pain. Secondly, well-trained and supervised primary health-care personnel should be available to provide early and essential care to the vulnerable groups (20).

In addition to the strengthening of outreach emergency care, health centres should contribute to the implementation of community-based prevention of oral disease and promotion of oral health. Moreover, an effort should be made to make fluoride toothpaste widely available. The introduction of fluoride toothpaste as a cost-effective and feasible method for the prevention of dental caries should be a public health priority

(1, 21, 22). In parallel, the promotion of traditional hygiene practices will allow the adoption of culturally acceptable healthy lifestyles relevant to oral health (23).

Sub-Saharan African countries are experiencing an unprecedented rate of urbanization (24). The changing living conditions and new patterns of disease necessitate an adjustment in policy regarding dental care for urban settings. Although oral conditions are not always life-threatening, they represent an important public health problem because of their high prevalence and the growing demand for health care (2). For decades, the system of oral health care, education of dentists, dental equipment and materials in most African countries, particularly in francophone countries, have been modelled on those in more developed countries. Exchange of experiences from alternative oral health-care systems relevant to develop-

ing countries is urgently needed in order to tackle the growing burden of oral disease. ■

Acknowledgements

The authors extend their sincere thanks to their collaborators from the following partner institutions in Burkina Faso: the Ministry of Health, the Association des Chirurgiens-Dentistes and the Association Nationale des Attachés de Santé en Odontostomatologie. The authors also thank the colleagues at the Institut de Recherche pour le Développement who contributed to the collection of data on which this study is based. The study was supported by the Institut de Recherche pour le Développement.

Competing interests: none declared.

Résumé

Raisons justifiant la fréquentation des services de soins dentaires de Ouagadougou, Burkina Faso

Objectif Déterminer les raisons amenant les patients à fréquenter les unités de soins dentaires de Ouagadougou, Burkina Faso, et avoir une meilleure idée de la capacité des services de soins bucco-dentaire dans les zones urbaines d'Afrique de l'Ouest.

Méthodes L'étude a porté sur un échantillon de patients sélectionnés au hasard et ayant fréquenté 15 unités de soins dentaires de Ouagadougou au cours de l'année 2004. Les données ont été recueillies au moyen d'un formulaire d'enregistrement quotidien simple.

Résultats A partir de 44 975 patients au total, un échantillon final de 14 591 patients a été constitué, dont 55,4 % étaient de nouveaux patients et 44,6 % des patients ayant déjà fréquenté le service. La plupart des patients sollicitant des soins (71,9 %) étaient âgés de 15 à 44 ans. Sur l'ensemble des personnes traitées, 41,5 % ont fait appel à des services dentaires non gouvernementaux sans but lucratif, 36 % à des services de soins dentaires privés et 22,5 % à des services publics. Le motif le plus courant de

consultation de ces services était une carie atteignant la pulpe (52,4 %) et 60 % des plaintes mentionnaient une douleur. Il a été constaté que les demandes de soins dentaires différaient notablement selon le sexe, la couverture en termes d'assurance maladie et la profession des patients.

Conclusion Les autorités sanitaires des districts urbains doivent garantir l'existence de services de soins de santé primaires axés sur la prise en charge de la douleur au premier point de contact avec le patient. S'il leur incombe de renforcer les soins d'urgence à l'intention des populations mal desservies, les centres de santé doivent aussi contribuer à l'établissement de programmes reposant sur la participation des communautés et destinés à prévenir les affections de la denture et de la bouche et à promouvoir la santé bucco-dentaire. Pour faire face à la charge croissante de maladies bucco-dentaires, l'échange d'expériences entre systèmes de soins bucco-dentaires de type non traditionnel et adaptés aux pays en développement devient une nécessité pressante.

Resumen

Motivos de visita a los servicios de atención odontológica en Ouagadougou, Burkina Faso

Objetivo Determinar por qué razones acuden los pacientes a los centros de atención odontológica en Ouagadougou, Burkina Faso, y conocer mejor los medios de que disponen los servicios de atención bucodental en las zonas urbanas de África occidental.

Métodos Estudiamos una muestra seleccionada aleatoriamente de pacientes que acudieron a 15 establecimientos de atención odontológica de Ouagadougou a lo largo de un periodo de un año en 2004. Los datos se recopilaron mediante un simple formulario de registro diario.

Resultados De un total de 44 975 pacientes, la muestra final fue de 14 591 pacientes, de los cuales un 55,4% eran pacientes nuevos, y un 44,6% pacientes ya atendidos anteriormente. La mayor parte de los enfermos que buscaban atención (71,9%) tenían entre 15 y 44 años. Un 41,5% de los pacientes acudió a servicios odontológicos sin fines lucrativos de tipo no gubernamental, un 36% acudió a servicios de atención odontológica privados, y un

22,5% recurrió a servicios públicos. El problema más frecuente como causa de la visita era la caries con afeción de la pulpa (52,4%), y el 60% de los pacientes sufrían dolor. Se observó que las necesidades de atención odontológica de los pacientes diferían significativamente según el sexo, la cobertura de seguro médico y la ocupación.

Conclusión Las autoridades sanitarias de los distritos urbanos deben velar por que en el primer punto de contacto del paciente se dispense atención primaria orientada al alivio del dolor. Además de reforzar la atención periférica de urgencia, los centros de salud deberían contribuir también a la puesta en práctica de programas comunitarios de prevención de las enfermedades bucodentales y promoción de la salud bucodental. Es necesario conocer urgentemente las experiencias de otros sistemas de atención bucodental de interés para los países en desarrollo a fin de poder hacer frente a la creciente carga de enfermedades bucodentales.

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