

Illness-related behaviour and sociodemographic determinants of oral health care use in Dabou, Côte d'Ivoire

A.D. Sangaré^{1,2}, M. Samba¹ and D. Bourgeois²

¹Laboratory of Public Health And Medicinal Plants - Faculty of Odonto-Stomatology University of Cocody, 22 Abidjan Côte d'Ivoire;

²Research Team in Knowledge Engineering (ERIC) – EA 3038. University of Lyon I, France

Objectives: The aims of this study were to describe adults' oral health behaviour and identify the sociodemographic determinants that influence people to seek oral care in Côte d'Ivoire, in a context of promoting a more accessible health care system. **Methods:** The design was a cross-sectional pilot survey undertaken in the department of Dabou, Côte d'Ivoire. A stratified sampling procedure with proportional allocation size was used, based on four different criteria: place of residence; type of dwelling; distance between the chosen locality and the dental clinic; and, the presence of a medical centre in the locality. The sample consisted of 927 people (18 years or older) who were interviewed by questionnaire. Data were collected at face to face interviews, using the method of itineraries. **Results:** 34% of the population had not accessed a dental practitioner during the past 12 months. The reasons for not seeking care were: self-medication, lack of money and a perception of not needing care. A dentist or a traditional healer had been sought by 33%. The choice of therapy was influenced by educational level and having health insurance ($p < 0.05$). The main reasons for attending a traditional healer were linked to educational level, the type of dwelling and the participants' place of residence ($p < 0.05$). Choosing to see a dentist was associated with age, the type of dwelling and the distance between the chosen locality and the dental clinic ($p < 0.05$). **Conclusion:** The socioeconomic situation of the participants was a determining factor for seeking care. Improving access to health care should be part of the global fight against poverty and the reduction of social inequalities.

Keywords: Accessibility; Côte d'Ivoire; oral care; sociodemographic determinants traditional healer.

Introduction

Sub-Saharan countries are facing a financial crisis which impoverishes populations and reduces public funding for health care (Fonteneau, 2008). Moreover, the World Bank emphasizes that the lack of access to care causes an important slowdown in developing countries due to reduced working capacity when disease occurs (Gwatkin, 2000). This makes access to care and the improvement of human health a concern. In addition, African countries' health surveillance systems have structural and organizational limitations (Yavo Tchéré *et al.*, 2009). Some basic epidemiological data, those relating to therapeutic itinerary are not available or are imprecise. A current priority is to make quality health information available to managers by an effective surveillance system (Louazani, 2005). Health information systems are recognized to be valuable tools for strategic planning and of great help in decision-making (Stachenko, 2008).

Studies have shown a close relationship between sociodemographic factors and health care utilization (Sisson, 2007; Varenne *et al.*, 2006). In developing countries, health care utilization offers a choice between a traditional healer and a dentist. A traditional healer is a person who is recognized by the community in which he/she lives as competent to provide health care by vegetable, animal and mineral substances and certain other methods based on the social, cultural and religious background (Stekelenburg *et al.*, 2005). In Côte d'Ivoire, no relationship was

established between the reasons for therapeutic choices and socio-demographic factors. This lack of information disadvantages decision-makers who need to prioritize health policies on factual bases (Adegbenbo, 1994).

Our study proposed to overcome this deficiency. The aims were to describe adults' health care seeking behaviour and to identify, through a pilot cross-sectional interview survey, the sociodemographic determinants which influence the use of oral health care in Côte d'Ivoire. In order to help decision-making and to improve the quality of care offered, the results are being made available as quickly as possible.

Material and methods

The study took place in 2009 in the department of Dabou, 50 km from Abidjan, the economic capital of Côte d'Ivoire. Covering 22,578 km², the department includes 47 villages in addition to the prefecture (INS, 1998). Its sociodemographic composition is typical of many departments in the country. However, it differs from other important cities, such as Abidjan, Yamoussoukro and Bouaké, due to the lack of socioeconomic infrastructure. The practice of dentistry is provided as a public service with two clinics and four dentists. All are located in Dabou, the administrative centre of the department. Traditional healers who take care of oral diseases also exist, but they are not part of the statistics of the health ministry.

The adult population over eighteen is estimated at 37,493 people, out of whom 60% live in rural areas (INS, 1998). The sample included adults aged 18 years and over, resident in the department, who had experienced an oral health problem during the 12 months preceding the survey, who were able to speak French or the local dialect (Adioukrou) and who agreed to participate.

A three-part questionnaire with multiple-response closed and semi-closed questions was developed. The first questionnaire was aimed at adults who had not sought care; the other questionnaires concerned adults who had visited a traditional healer or a dentist.

Data were collected from March to May 2009, by four investigators previously calibrated and trained in the face-to-face interview method. This method is used in developing countries due to unavailability of telephones and high illiteracy rates. Furthermore, the presence of the investigator can encourage response. The sampling technique, using proportional allocation to size, was based on four strata: residential area (urban/rural), type of residence (modern or traditional), the distance between the chosen locality and the dental clinic (<5 km / 5-15 km / >15 km) and, finally, the presence of a health centre or clinic in the locality.

In urban areas, all localities were situated within 5 km of the dental clinic, and we noted the presence of a health centre in this range. Districts were divided into two groups: traditional residences, built using recycled materials (eight districts) and modern residences built with cement and bricks (twelve districts). Two districts were selected randomly from each group. Then, 60 people were interviewed in each of the four districts selected, thus giving 240 people.

In rural areas, villages were divided into three groups according to the distance criterion. In each group, two other groups were formed according to the presence or absence of a health centre. Then, a village was selected at random in each of the six groups formed. In each of the six villages chosen, 120 people were interviewed amounting 60 persons per habitat type, thus giving 720 people in the rural area.

Out of the 960 respondents, 33 files were unusable; the sample therefore includes 927 people. The survey was conducted in households using the itineraries method. It is a purposive sampling in which, the interviewer started at a defined point and walked in a defined direction (Ancelle, 2006). The first house visited was that situated immediately to the right of the investigator, according to a defined pattern. If confidentiality could be guaranteed, two people could be interviewed in the same household.

Approval to conduct the study was obtained from local authorities: the district administrator and the villages' headmen.

Data were captured using the Epidata (version 3.1) software package, then processed with SPSS (Statistical Package for Social Sciences) version 16.0 and Excel for Windows. The numbers were tabulated and proportions calculated. The level of significance set at $p < 0.05$. Pearson Chi-2 test was used for hypothesis testing. Our research hypothesis was that socio-demographic variables influenced the oral health care use.

Results

Distribution of participants by care sought and reasons for the therapeutic choice.

Of the adults confronted with an oral problem during the 12 months preceding the study, 34% claimed not to have seen a practitioner. The remaining 66% split equally between a dentist and a traditional healer. Participants' educational level and having health insurance were significantly associated with seeking care. The people who went to high school went to a dentist initially, while the less educated visited a traditional healer (Table 1).

The main reason for not visiting a dentist was financial (44.3%). For those who chose not to use a traditional healer, it was self-medication (41.1%). (Table 2).

The five main reasons for choosing to visit a traditional healer were the cost of treatment (73.8%), a perception that the care was less painful (20.9%), the proximity of traditional healers (20.3 %), the efficacy of traditional treatments (17.9%) and fear of dentists (12.3%). The reasons occurring with the greatest frequency for those who chose to go to a dentist were: confidence in modern health care (86.8 %), cleanliness and hygiene in dental offices (22.3%), and the cost of treatment (17.7%) (Table 3).

The reasons occurring with the greatest frequency for choosing to visit a dentist or traditional healer were further examined for their association with socio-demographic variables.

Attending a traditional healer

Cost as a reason for attending a traditional healer was not linked to any socio-demographic variable. However, visiting a traditional healer because the perception that the treatment would be less painful, was observed more frequently in educated people and was linked to the type of residence. A significant association existed between proximity as a reason for consulting a traditional healer and residing a rural area. Finally, there was a significant link between respondents' ages and their perception about the efficacy of traditional care: 30–44 year old adults were more likely to believe strongly in the efficacy of traditional treatment (Table 4).

Attending a dentist

Confidence in modern care as a reason for going to a dentist was significantly linked with age, the type of residence and distance from the residence to the city centre ($p < 0.05$). This reason was more common among people between 30 and 44 years, those living in a modern residence and those living within 5 km of the city. The next most important reason for visiting a dentist, the cleanliness and hygiene in the dental office, was significantly linked with type of habitat (Table 5). Those living in a modern residence were more likely to report this as the reason to visit a dentist. However, no socio-demographic variable was significantly associated with the third reason, the cost of care. The costs of oral care were between 5000 and 10000 CFA francs (USD 10 – 20).

Table 1. Socio-demographic characteristics of adults by type of care sought in the last 12 months

	<i>Totals</i> <i>N=927</i> <i>n (%)</i>	<i>Traditional healer</i> <i>N=301</i> <i>n (%)</i>	<i>Dentist</i> <i>N=310</i> <i>n (%)</i>	<i>No visit</i> <i>N=316</i> <i>n (%)</i>
Gender (n = 927)				
Male	481 (51.9)	160 (53.2)	163 (52.6)	158 (50.0)
Female	446 (48.1)	141 (46.8)	147 (47.4)	158 (50.0)
Age (n = 927)				
18-29 years	289 (31.2)	91 (30.2)	86 (27.7)	112 (35.4)
30-44 years	547 (59.0)	183 (60.8)	188 (60.6)	176 (55.7)
> 44 years	91 (9.8)	27 (9.0)	36 (11.6)	28 (8.9)
Level of education * (n =927)				
Not schooled	278 (30.0)	112 (37.2)	72 (23.2)	94 (29.7)
Primary education	386 (41.6)	123 (40.9)	122 (39.4)	141 (44.6)
Secondary and more	263 (28.4)	66 (21.9)	116 (37.4)	81 (25.6)
Area of residence (n = 927)				
Rural	689 (74.3)	222 (73.8)	231 (74.5)	236 (74.7)
Urban	238 (25.7)	79 (26.2)	79 (25.5)	80 (25.3)
Type of dwelling (n = 927)				
Modern	557 (60.1)	172 (57.1)	202 (65.2)	183 (57.9)
Traditional	369 (39.8)	129 (42.9)	108 (34.8)	132 (41.8)
Distance from the chosen locality and the dental clinic (n = 927)				
< 5 km	476 (51.0)	158 (52.5)	157 (50.6)	158 (50.0)
5- 15 km	239 (25.8)	75 (24.9)	83 (26.8)	81 (25.6)
> 15 km	215 (23.3)	68 (22.6)	70 (22.6)	77 (24.4)
Insurance * (n = 927)				
Yes	31 (3.3)	4 (1.3)	21 (6.8)	6 (1.9)
No	896 (96.7)	296 (98.3)	289 (93.2)	310 (98.1)
Medical centre (n = 926)				
Yes	588 (63.4)	195 (64.8)	196 (63.2)	197 (62.3)
No	339 (36.6)	106 (35.2)	114 (36.8)	119 (37.7)

*p< 0.05

Table 2. Distribution of adults who claimed not to have visited a dentist or a traditional healer during the last 12 months for the following reasons*

<i>Reasons not accessing dental care</i>	<i>Dentist</i> <i>n (%)</i>	<i>Traditional healer</i> <i>n (%)</i>
Lack of money	140 (44.3)	65 (20.6)
No traditional healer nearby	-	32 (10.1)
No dentist's office nearby	5 (1.6)	-
Ineffective care	9 (2.8)	44 (13.9)
Condition did not need care	67 (21.2)	65 (20.6)
Fear of dental instruments	33 (10.4)	-
Self-medication	111 (35.1)	130 (41.1)
Care is painful	13 (4.1)	-
Lack of hygiene	-	12 (3.8)
Other reasons	11 (3.5)	11 (3.5)

*Several possible choices

Table 3. Distribution of adults who claimed to have visited a dentist or a traditional healer during the last 12 months for following reasons:*

<i>Reasons accessing dental care</i>	<i>Therapeutic choice</i>	
	<i>Dentist n (%)</i>	<i>Traditional healer n (%)</i>
Affordability of treatment cost	55 (17.7)	222 (73.8)
Proximity	12 (3.9)	61 (20.3)
Treatment less painful	-	63 (20.9)
Fear of dentists	-	37 (12.3)
Efficacy of treatments / Confidence	269 (86.8)	54 (17.9)
Hygiene and cleanliness	69 (22.3)	-
Cultural aspects	-	9 (3.0)
Other reasons	36 (11.6)	19 (6.3)

*Several possible choices

Table 4. Distribution of adults who claimed to have been to a traditional healer for care and factors influencing their decisions: affordable cost of the treatment, treatment less painful, proximity of traditional healers, effectiveness of treatment by socio-demographic variables

	<i>Treatment cost affordability Yes n (%)</i>	<i>Treatment less painful Yes n (%)</i>	<i>Proximity of traditional healers Yes n (%)</i>	<i>Effectiveness of treatment Yes n (%)</i>
Gender				
Male	119 (53.6)	33 (52.4)	32 (52.5)	25 (46.3)
Female	103 (46.4)	30 (47.6)	29 (47.5)	29 (53.7)
Age				*
18-29 years	69 (31.4)	16 (25.4)	22 (36.1)	10 (18.5)
30-44 years	133 (60.4)	39 (61.9)	35 (57.4)	42 (77.8)
> 45 years	18 (8.2)	8 (12.7)	4 (6.5)	1 (1.9)
Level of education		*		
No schooling	85 (38.3)	18 (28.6)	21 (34.4)	20 (37.0)
Primary education	93 (41.9)	24 (38.1)	21 (34.4)	23 (42.6)
Secondary and more	44 (19.8)	21 (33.3)	19 (31.2)	11 (20.4)
Type of dwelling		*		
Modern	126 (56.8)	43 (68.3)	41 (67.2)	35 (64.8)
Traditional	96 (43.2)	20 (31.7)	20 (32.8)	19 (35.2)
Locality of residence			*	
Rural	162 (73.0)	45 (71.4)	53 (86.9)	39 (72.2)
Urban	60 (27.0)	18 (28.6)	8 (13.1)	15 (27.8)
Distance from the chosen locality and the dental clinic				
< 5 Km	114 (51.4)	39 (61.9)	29 (47.5)	23 (42.6)
5-15 Km	60 (27.0)	14 (22.2)	18 (29.5)	17 (31.5)
> 15 Km	48 (21.6)	10 (15.9)	14 (23.0)	14 (25.9)
Medical centre				
Yes	144 (65.2)	42 (21.6)	39 (63.9)	35 (64.8)
No	77 (34.8)	21 (19.8)	22 (36.1)	19 (35.2)
Medical centre				
Yes	144 (65.2)	42 (21.6)	39 (63.9)	35 (64.8)
No	77 (34.8)	21 (19.8)	22 (36.1)	19 (35.2)

*p< 0.05

Table 5. Distribution of adults who claimed to have been to a dentist and factors influencing their decisions: confidence in modern health care, hygiene and cleanliness of the dental office, affordable cost of treatment by socio-demographic variables

	<i>Effectiveness of / confidence in modern care</i> Yes n (%)	<i>Cleanliness and hygiene in the dental office</i> Yes n (%)	<i>Affordability of treatment cost</i> Yes n (%)
Gender			
Male	138 (51.3)	37 (53.6)	134 (52.5)
Female	131 (48.7)	32 (46.4)	121 (47.5)
Age			
18-29 years	78 (29.0)	19 (27.5)	21 (38.2)
30-44 years	156 (58.0)	43 (62.3)	29 (52.7)
> 45 years	35 (13.0)	7 (10.1)	5 (9.1)
Level of education			
No schooling	62 (23.0)	12 (17.4)	14 (25.5)
Primary education	105 (39.0)	25 (36.2)	22 (40.0)
Secondary and more	102 (37.9)	32 (46.4)	19 (34.5)
Type of dwelling			
Modern	182 (67.7)	53 (76.8)	42 (76.4)
Traditional	87 (32.3)	16 (23.2)	13 (23.6)
Locality of residence			
Rural	199 (74.0)	48 (69.6)	45 (81.8)
Urban	70 (26.0)	21 (30.4)	10 (18.2)
Distance from the chosen locality and the dental clinic			
< 5 Km	140 (52.0)	37 (53.6)	22 (40.0)
5-15 Km	75 (27.9)	22 (31.9)	19 (34.5)
> 15 Km	54 (20.1)	10 (14.5)	14 (25.5)
Medical centre			
Yes	170 (63.2)	47 (68.1)	34 (61.8)
No	98 (36.4)	22 (31.9)	21 (38.2)
Insurance			
Yes	17 (6.3)	8 (11.6)	6 (11.0)
No	252 (93.7)	61 (88.4)	49 (89.0)

*p<0,05

Discussion

Sociodemographic characteristics

The proportion of men and women in the sample (52% versus 48%) was very close to the distribution of adults in the department of Dabou; according to the National Institute of Statistics, the population distribution was 53% men and 47% women (INS 1998). The sample comprised people of a lower educational level, primarily young, who mainly worked in agriculture, with seasonal incomes and with no social protection. The sample's low social level reflects a bias of representativeness with under representation of higher social strata.

Attendance at oral health services

The reasons for not seeking care were similar for dentists and traditional healers. The main reason was financial. Both in Côte d'Ivoire and Burkina Faso, this is given as a reason for not using modern care (Samba *et al.*,

2004a; Varenne *et al.*, 2006). The alternative to professional care was self-medication. This practice is regular in African countries and is not exclusive to oral health care. Modern self-medication represents the first solution for populations in Benin, and it is encouraged by itinerant sellers of medicines (Ouendo *et al.*, 2005).

Educational level and having health insurance were determining factors for seeking care. Educated people tended to use more modern care, while people with a lower academic level preferred traditional care. The correlation between the type of care, educational level and socio-economic category has been strongly demonstrated in a study on Chinese adults (Lin *et al.*, 2001). Tapé *et al.* (2007) also showed the importance of having health insurance and a higher educational level when populations make decisions about health. However, due to the low number of adults with insurance (3.3%) in the present study, and the fact that it is not relevant for traditional care, its impact could not be determined. Having attended

school seems to make for a privileged environment for education and the promotion of health.

Care from a traditional healer

The primary reason for seeking traditional care was the cost of care. In the absence of a proper system of social security and because of incapacity to pay for care, populations with low or intermediate income can afford dentist-based care only for emergencies or in cases of intense pain (Petersen, 2009). The charges for a traditional healer are lower than for a dentist and this may influence one's choice of care type. The average cost for an oral health problem (treatment and prescriptions) was estimated at 7500 CFA francs (USD 15) in the public sector in Abidjan (Samba *et al.*, 2004b). The payment by item of care established in the public health services is a financial obstacle for the users and becomes a barrier to access (Waelkens, 1999). On the other hand, the costs of traditional care are affordable for the community because the care providers can be paid in kind. However, Mucha *et al.* (2000) maintain that in many cases, the population's financial contributions for traditional treatment are higher than the costs of the modern medicine.

The second reason for visiting a traditional healer is the perception that treatment was less painful. The decision to visit a dentist comes only after self-medication has failed and the pain becomes untenable. Our study suggests that the lower the educational level, the greater is the fear of pain and the more likely people are to visit the traditional healer.

The proximity of the traditional healer was the third reason for using their services, illustrated by the short time needed to reach a traditional healer (less than 30 minutes). No official data are available concerning the number of traditional healers who treat oral problems in the department of Dabou. However, traditional healers mostly live and work in rural areas. They are well established as providers of care in several communities and are closer to the populations because they live in the same area. In addition to geographical proximity, there are more traditional healers than doctors and nurses in some African countries, such as Ghana (Tabi *et al.*, 2006). Furthermore, traditional healers are well recognised by populations. In our study, more than two-thirds of the adults surveyed claimed to have been received by the traditional healer immediately on arriving. This availability of traditional healer has also been underlined in Zambia (Stekelenburg *et al.*, 2005).

Finally, the fourth reason that people visited a traditional healer was a belief in the efficacy of traditional care. This perception was stronger in our participants the older they were, suggesting that the young are less informed about such therapy, or have more faith in modern care and therefore, are not inclined to use traditional care. Adults aged 30-44 years were more likely to believe in the efficacy of traditional treatment. Stekelenburg *et al.* (2005) had also shown that increasing age among respondents correlated with more frequent visits to both the traditional healer and the doctor.

Seeking modern treatment

The first reason for choosing to attend a dentist, confidence in modern treatment, was cited as a determining factor in the consumption of the modern oral care in

a study conducted in 2003 in Abidjan (Samba *et al.*, 2004a). According to a study done in Australia on an underprivileged population, this belief in modern treatment by users is due mainly to their own experiences or those of their relatives (Luzzi and Spencer, 2008). The hospital with its technology and its well qualified personnel would be one of the reasons why people have faith in modern treatment (Muela *et al.*, 2000). In our study, adults 30-44 years old are the people with the greatest confidence in modern dentistry, while a study in South Africa showed that the young people and the unemployed used a dentist less (Westaway *et al.*, 1999). Adults living in a modern residence use more modern services than those living in traditional housing. The modern habitat suggests a better social and economic situation and a higher educational level. It is reasonable to assume that people with higher education are better informed about modern treatment and thus make less use of traditional care. These same reasons have been reported in two studies conducted in Burkina Faso and Nigeria (Varenne *et al.*, 2006; Adegbebo, 1994). Mugisha *et al.* (2002) also underline the influence of socio-economic factors on health behaviour.

Adults living in a modern house are sensitive to the surroundings of the place where the dentist works. Since the start of the pandemic of HIV/AIDS, many persons fear contamination during oral health procedures and such fear becomes an obstacle to care, in addition to financial difficulties often mentioned (Locker, 1991). That treatment may be considered affordable and thus may provide a reason for using modern care runs contrary to some perceived ideas. Some studies have shown that the cost of care was a barrier to use in developing countries (Baltusen & Ye 2006; Mugisha *et al.* 2002). Users' satisfaction despite the cost of the treatment was consistent with the findings (Samba *et al.* 2004b).

Conclusion

Educational level and the absence of financial and geographical barriers are the keys to people's access to oral health care. The correlations between these factors, invite other analyses to benchmark their importance in facilitating or hindering people's decisions about oral health care. However, the results obtained in this study imply a need to improve access to care in Côte d'Ivoire in the overall context of the fight against poverty and reducing social inequalities. We know that a link exists between poverty and poor health and, to counter this, geographical and financial barriers to access should be tackled to help vulnerable people improve their conditions. The implementation of universal health coverage for the provision of health care, with a strong involvement of public authorities, requires serious consideration. Because financial constraints could delay the start of this initiative, the emphasis should be placed on primary health care, while respecting the socio-cultural aspects of the traditional dentistry.

This study highlights the importance of an information system of high quality which, by making available reliable information to the decision-makers, will allow the most exposed populations to be targeted. Côte d'Ivoire has embarked on a process of improving its oral health

monitoring system. In addition to clinical epidemiological data, the country will require reliable data on the profiles of the users and the factors which determine their choice of treatment to allow for efficient planning. To give a more global view of the various factors involved, this pilot study must be conducted in the other regions of the Côte d'Ivoire.

Competing interest

The authors declare that they have no competing interests

Authors' contributions

ADS: developed the protocol and design of the study, conducted the field work, analysed the data and was responsible for preparation the manuscript. MS: assisted in the development of the protocol and design, the implementation of data collection and contributed to the write-up of the paper. DB: assisted in the development of the protocol, the data analyses, the interpretation, and contributed to the preparation of the manuscript. All authors read and approved the final manuscript

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