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Assessment of the accessibility of oral health care of Senegalese households

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Abstract

Background: Access to health care in general and oral care in particular, is an issue in most developing countries, which contributes to a significant economic burden. The impact of dental pain limits daily activities and leads to a poor quality of life

Objectives: This study aimed to assess the accessibility of oral health care in Senegal.

Methodology: A nationwide, cross-sectional descriptive study, carried out between April 28, 2016 and May 28, 2016, in 300 households, according to WHO's guidelines (Protocol 1997), and adjusted to Senegal's context.

Results: The results reveal that out of 86.8% of surveyed householders who find the overall care costs acceptable, 3/4 of them live in the urban area. Moreover, more than half of those householders (62.7%) think that the distance between their locality and the dental structure is acceptable and the majority (55.3%) does not complain about the transportation costs. Regarding drug costs, 49.5% of householders find them expensive.

Conclusions: The analysis shows an unequal access to oral health care for the population, which, however, can be improved by involving all its components developed below for an overall coverage of oral diseases.

Keywords: access, oral care, cost, health insurance, Senegal

1. Introduction

Access to health care in general, oral care in particular, is an issue in most developing countries, which contributes to a significant economic burden. However, oral diseases are a real public health issue and their occurrence remains high worldwide. Oral diseases are restrictive to academic, professional and personal activities, resulting in the loss of millions of hours of study and work every year worldwide [1]. The impact of dental pain limits daily activities and leads to a poor quality of life [2].

Still, flagrant inequalities in access to oral health care are noted: in Croatia, the dental surgeon to population ratio is 1 to 560, while in Ethiopia it is 1 to 1,278,000. One of the main reasons for this is that too little attention is given to oral health social determinants [3].

In Senegal, the number of dentists per inhabitant is about one in 27,591. The ratio of a dentist per 10,000 inhabitants, as recommended by the WHO, has yet to be reached. Moreover, the concentration of care providers in urban areas and the high cost of services are also to be blamed for the lack of access to oral care [4].

Consequently, the government has undertaken a national strategy for health development by reforming the health funding, especially the universal access to primary health care, including the decentralization of health services as well as the role of local authorities in the management of health structures. The implementation of the UHC appears, as well, to be an opportunity to improve access to care.

Also, within the framework of the health funding, so as to facilitate the access to care, a flat-rate pricing was introduced through a project set up for four years by the Belgian Cooperation to support the supply and demand of care in Senegal (PSSDC) [5],

Despite all the government of Senegal and its development partners' efforts over the last decade, rural and urban populations still have difficulty accessing quality health care in public structures.

For this reason, this study aims to assess the access to oral health care of Senegalese households.

2. Materials and methods

2.1 Type of study

A cross-sectional and descriptive epidemiological survey was carried out.

2.2 Target population

The target population is the entire Senegalese population residing in selected localities and who agreed to take part in the study.

2.3 Selection criteria

- he sample selection criteria are to:
- be at least 18 years old at the time of the survey;
- be responsible for the medical care of the family;
- reside in chosen regions.

2.4 Sampling

The sampling framework is that of the WHO, described in its basic methods. Indeed, WHO recommendations suggest the choice of twelve sites for the whole country, including four in the capital, four in two large regions and four in rural areas from different regions [6]. Thus, the sample consisted of 100

households in the capital (Dakar), 100 in two economically important regions (Thiès and Diourbel) with respectively 50 households each and 100 in four randomly selected regions in rural areas. The peculiarity of this study is that it focuses on health insurance [7]. The choice of the twelve sites was therefore based on the Decentralization and Extension of Health Insurance Coverage (DEHIC) project [8]. Thus, Saint-Louis, Louga, Kaolack and Kaffrine were selected. For each region, a department was randomly selected (with the exception of Dakar which has two). Then departments with districts and finally municipalities were randomly selected (Table 1). In each municipality, householders in charge of the household's medical care were interviewed.

In the absence of the householder, the questionnaire was administered to the spouse. In municipalities with several neighborhoods (Gueule Tapée, Fass, Colobane), one is randomly selected. Apart from Dakar's, all other regions surveyed sites are located in rural areas. Table 1 shows the list of selected municipalities (Table 1).

Table 1: Recap of selected municipalities

Regions	Departments	Districts	Municipalities
Dakar	Dakar Rufisque	Dakar Plateau Rufisque	Gorée Gueule- Tapée Rufisque Est et Nord
Diourbel	Mbacké	Ndame	Missirah, Touba mosquée
Thiès	Thiès	Keur Moussa	Fandène Keur Moussa
Louga	Kébémer	Ndande	Dioukoul Diawrigne
Saint-Louis	Saint-Louis	Rao	Fass Ngom
Kaffrine	Mbirkilane	Mabo	Mabo
Kaolack	Nioro	Wack Ngouna	Keur Madongo

2.5 Variables and indicators

The data collected to analyze the access to care refers to householders' income, care costs, transportation costs, distance, drug costs and medical coverage.

2.6 Data Collection

This work required two Ph.D. dental surgeon students and a statistician to conduct interviews.

After a two-day training, to assess its quality and understanding by the interviewers, the questionnaire was tested on ten households in Dakar. The data collection took place between April 29, 2016 and May 28, 2016. The aim and the importance of the survey were explained to potential surveyed populations. After the survey, householders received instruction in oral hygiene.

2.7 Data analysis

At the end of the survey, the CS Pro software version 6.3 was used to process the data collected. The R software was used for graphics, the SPSS to generate charts and Excel to format tables and graphics.

3. Results

3.1 Socio-demographic characteristics of households

Householders are, on average, 45 years old with a standard deviation of 15 years. The study shows that 58.30% of surveyed households have more than six members. Nearly half of householders (48.7%) have a monthly income of less than CFAF 50,000 and only 5.7% earn more than FCFA 300,000 (Table 2).

Table 2: Assessment of costs and distance in oral health care coverage

Variables		Methods	Effective (n)	Percentage (%)
	Drugs costs	Acceptable	92	**50.5**
		Expensive	73	40.1
		Very expensive	17	9.3
		Low	56	18,7
Costs	Transportation costs	Acceptable	166	55.3
		Expensive	58	19.3
		Do not know	20	6.7
	Overall care costs	Expensive	12	6.6
		Acceptable	158	86.8
		Low	12	6.6
	Assessment of the distance	Acceptable	188	62.7
		Long	95	31.7
		Very long	17	5.7
	Householders' income level	0-50000	146	48.7
		50, 001-200,000	43	14.3
		20, 001-300,000	111	37
		300, 001 & over	85	28.3

3.2 Care costs

86.8% of householders in surveyed areas who send household members to health facilities state that the overall care costs is acceptable. Only 6.6% of them find it high. Besides, more than half of these householders (69.8%) find consultation costs acceptable, while 29.7% said they are high (Fig. 1, Table 2).

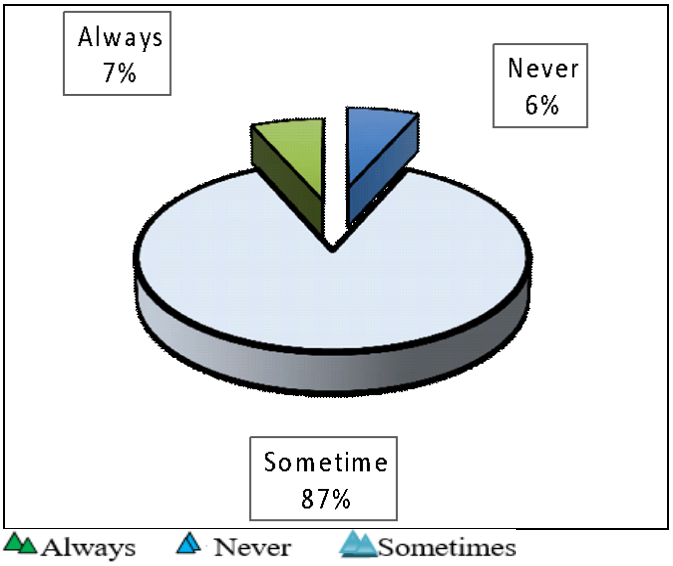

Fig 1: householders level of satidfaction on overall care costs

3.3 Drug costs

50.5% of householders state that drug costs are acceptable while the remaining 49.5% report them as either expensive (40.2%) or very expensive (9.1%) (Fig. 2, Table 2).

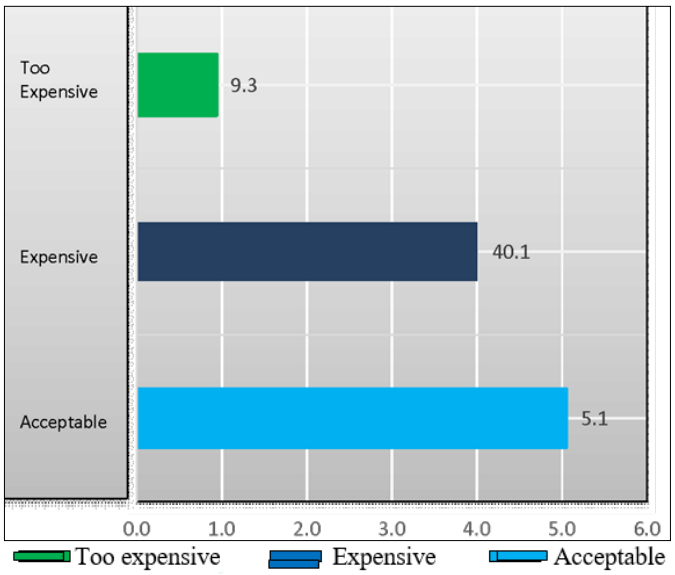

Fig 2: householder's opinion on drug costs

3.4 Distance between health facilities and households locality

Results show that 99.3% of householders report having health facilities within 5 km of their locality and for the most part (81.0%), it takes them less than an hour to reach those structures. Moreover, more than half of householders (62.7%) consider the distance acceptable and the majority (55.3%) does not complain about the transportation costs (Fig. 3, Fig. 4, Table 2).

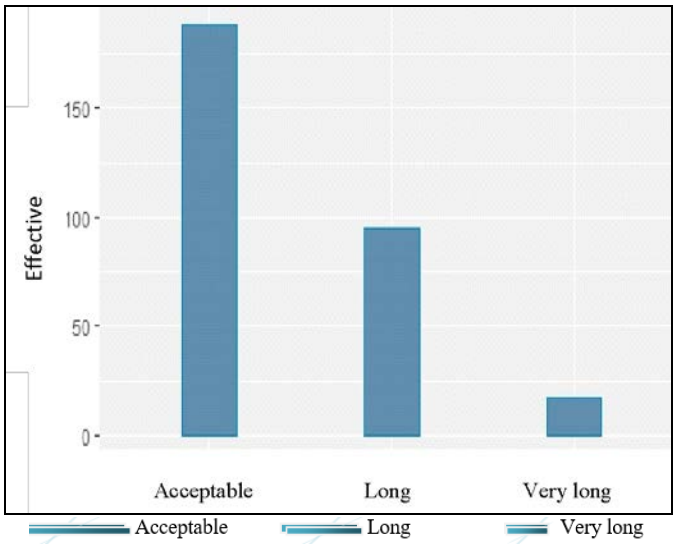

Fig 3: householders opinionon the distance betveen health facilities and household locality

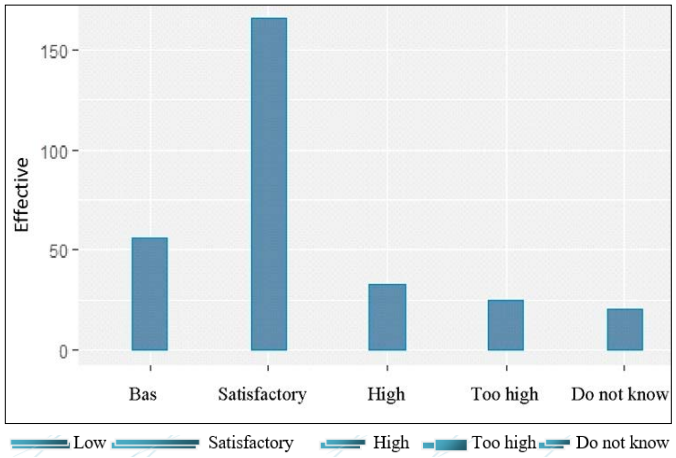

Fig 4: Householder's opinion o the transportation costs

3.5 Health insurance

The study showed that 21.7% of surveyed households have health coverage with 14.3% who being members of health mutual (Fig. 5).

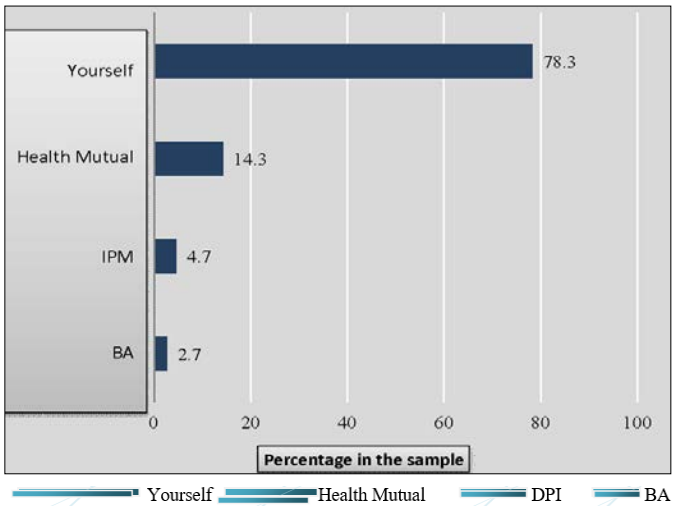

Fig 5: health insurances coverage

3.6 Challenges of the study

The choice of some regions was limited because they were drawn from sites of the UHC project (DEHIC) [8]. During the survey, some obstacles were encountered like the out of reach of some localities, the issue in obtaining a favorable opinion of neighborhood delegates, the issue of identifying the meeting point of households and that of householders who withhold their income information.

4. Discussion

4.1 Socio-demographic characteristics

The householders' income level is crucial in the study of households' ability to take charge of their oral health care. Nearly half of householders (48.7%) have a monthly income of less than FCFA 50,000 and only 5.7% of householders earn more than FCFA 300,000 [9]. These results could be due to the fact that the majority of householders are women who devote most of their time to domestic activities, maternity and childcare.

These data are similar to those found in Burkina Faso, where the average monthly income per capita is FCFA 7,945 along with significant disparities according to the socioeconomic profile of the householder [10].

However, it should be noted that for 28.3% of households, the income information could not be obtained. This was for confidentiality purposes in some cases and in others the householder was absent and the questionnaire was given to the spouse who does not have the information.

This shows that financial and geographical aspects are two important factors in the access to oral health care.

4.2 The distance between health facilities and households' locality

The proximity of health facilities is not a real problem because virtually all (99.3%) householders state that they have health facilities within 5 km of their household and, for the most part (81.0%), it takes them less than an hour to reach the dental structure.

The study by Faye *et al*. reported difficulties of access to dental care of populations in rural areas, resulting in a high frequency of oral diseases (96.5%) [11]. Likewise, Hamano *et al*.'s findings reveal that people with no easy access to dental facilities can be potential targets for dental diseases [12].

However, 31.7% of the latter found this distance long while 19.3% say the cost of transportation is high. This may be due to the isolation of some areas where households have difficulty accessing the dentist due to transportation shortages.

4.3 Care costs

Care costs are one of determinants of access to care for populations because the more expensive they are, the less population can be treated at health facilities. For surveyed areas, it appears that these costs are not an issue. Indeed, the majority of householders (86.8%) who send their household members to dental facilities, say they are sometimes satisfied with the overall care costs. Regarding consultation costs ($2 to $3), more than half of these householders (69.8%) find it satisfactory. Sangaré *et al*.'s studies sample shows that 44.3% do not go to the dentist due to financial reasons [13].

The analysis of the assessment of care costs, according to regions, provided with interesting results. Thus, ¾ of householders who are always satisfied with the overall care costs live in Dakar and 84.3% of surveyed householders in this region are mostly satisfied with these costs. These results may be due to the fact that most civil servants and householders with a monthly income of more than FCFA 300,000 live in Dakar. Thus, an unequal access to health services was noted; the study of Haddad *et al*. in Burkina Faso got the same results [14].

Moreover, regions where householders are less satisfied with the overall care costs are St Louis and Thiès. In fact, 33.3% of householders who were never satisfied with the overall care costs live in these regions.

Besides, householders' opinion on consultation costs reveals some disparities between regions. More than half of householders in Kaolack (64.3%) and St Louis (52.9%) think that consultation costs are high. However, Thiès has the most householders who find consultation costs high (33.3%), while 1.9% of those householders live in Diourbel.

A study conducted in Gabon shows the difficulty of access to care due to its very high cost, to infrastructures shortage and the lack of dental health programs in the country [15]. It could also be due to the specific behavior of rural households who highly abstain from therapy and have the highest level of traditional medicine users [16].

4.4 Drug costs

Regarding drug costs, the tendency is narrow. For example, 50.5% of householders find the cost of medicines acceptable, while the remaining 49.5% say the cost is either expensive (40.2%) or very expensive (9.1%). A similar study in Madagascar shows that 25% of patients are unable to pay for their treatment [17]. Similar results were found in studies in Burkina Faso and India where dental pain sufferers use many known African plants but also a variety of self-medication methods to cope with their pain [18, 19]. This complements the findings of Lopez and Baelum who have demonstrated that socioeconomic and behavioral factors are independently associated with the frequency and reasons for dental visits [20].

In Nigeria, treatment costs are impediments to oral health care coverage for 18.2% of surveyed persons [21].

4.5 Health insurance

The use of health mutual is not too widespread in overall (14.3%) surveyed households; DPIs and the BA cover 7.4% of households only, unlike in Rwanda, where, in 2009, the proportion of the population covered by health insurance was at 75.6% [22]. At the regional level, there are wide disparities with regions such as Thiès, where the use of health insurance is more widespread with 46.0% of its households covered, unlike Kaolack, Louga and Saint -Louis where none of surveyed households has health insurance. These results are due to the fact that Thiès is a pioneer region in the field of mutuality in Senegal but also in West Africa and offers a rich experience on mutuality. Thus, Lo *et al*.'s study emphasizes the importance of the number of members in this region 23]. Moreover, the high rate of annual subscriptions, which are beyond what most householders are willing to pay for this coverage, could be a negative factor. In addition, the allocation of annual subscriptions by region reveals some disparities. It should be noted, however, that differences in average subscriptions among regions are not statistically significant (at 95% threshold), which means that subscriptions are statistically the same in all regions. Contradictory studies indicate that the low income level of households is a major impediment to joining a health mutual [24, 25, 26, 27]. Besides, although annual average subscriptions are expensive, householders with incomes below CFA 50,000 francs are majority members of health mutual (48.7%). Financial resources are the first reason for mutual members and non-members low affiliation [24, 25, 27]. This contrast may be explained by the fact that the majority of members are farmers (Thiès region) who live in a community enabling them to share timely information.

5. Conclusions

The study shows that the access to oral care is very complex. In Senegal, there are still inequalities in access to oral care between urban and rural areas. Also, drug costs are impediments to oral care coverage which requires a special consideration. Consequently, membership to mutual appears to be an asset in improving the access to oral care.

6. Abbreviations

WHO: World Health Organization
UHC: Universal Health Coverage
PSSDC: Project to Support the Supply and Demand of Care
DEHIC: Decentralization & Extension of Health Insurance Coverage
FCFA: Franc des Colonies Françaises d'Afrique
DPI: Disease Prevention Institution
BA: Budget Attribute

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