

The role of health insurance in the coverage of oral health care in Senegal

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Abstract

Oral diseases costs are among the most expensive health care benefits. In Senegal, households contribute up to 37.6% of the national health spending through direct payments. The aim of this work was to study the role of health insurance in the coverage of oral health care in Senegal. The study was based on health insurance agents and policyholders. The study reveals that oral health care coverage through health insurance still does not meet requirements for treatment of oral infections. In financial terms, oral health care costs health insurance too much. As a result, carriers cover them partially. On top of that, the majority of the population's lack of knowledge about mutual, because they have a little background on oral health care, the latter weighs heavily on health insurance leading to the use of self-medication, traditional medicine and handicraft prosthetists. The analysis reveals an unequal access to oral health care through the health insurance system. To bring under control the expenditure for oral health care, carriers and dental surgeons must work together to raise the populations' awareness on community solidarity.

Introduction

Oral health diseases are a major public health issue because of their high prevalence and the huge impact they have on the overall health and the quality of life-related to oral health, which reflects on the well-being, the social behavior and the physical behavior of the individual.¹ Yet, access to oral treatment is still an issue. That is the reason, since independence days, several policies have been introduced. First, free care that is when the government fully covers the benefits. The limits of this strategy

were reached in the seventies.² This first strategy was subsequently replaced by the concept of "cost sharing" between public funding and consumers, which aimed to cut the government financial constraint while increasing consumers' social participation in the health effort.³ Finally, the health insurance was established an appearance. Its set up aimed to improve access to care while preventing the impoverishment of the population.⁴

In spite of these health insurance programs, the health system encounters difficulties. Sure enough, financial resources devoted to the health budget are still insufficient. In Senegal, the National Health Accounts (NHA) of 2005 show that households have contributed to the health system financing at up to 37.6% of the national health spending through payments that contribute to the impoverishment of the populations who are dealing with catastrophic health-related expenditure.⁵

According to the World Health Organization (WHO) "*the World Health Assembly resolution 53.33 of 2005 states that every individual must have access to health services without financial difficulties. On these two points, a worldwide universal coverage is far from being reached*".⁶

With this in mind, the Universal Health Coverage (UHC) had been set up in lots of countries. In Senegal, the UHC should be an opportunity to ease the access to oral health care, which use was limited due to its high cost.

It is in this context that this qualitative study was carried out with the aim of studying the coverage of oral health care in Senegal by health insurance

Materials and Methods

Study framework

The study was carried out in seven out of fourteen administrative regions of Senegal: Dakar, Diourbel, Thiès, Kaolack, Saint Louis, Diourbel, Louga; that is half of Senegal's regions to better represent the national territory. It is regarding urban and rural areas. The choice of these regions is due to the presence of functional health insurance services according to the Universal Health Insurance (UHI) agency.

Study population

The study population is health insurance agents (mutual, Disease Prevention Institution (DPI)) in chosen towns and who agreed to take part in the study and policyholders.

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Key words: benefit, health insurance, oral health care, Senegal.

Contributions: the authors contributed equally.

Conflict of interest: the authors declare no potential conflict of interests.

Funding: none.

Received for publication: 27 August 2017.

Accepted for publication: 19 February 2018.

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Licensee PAGEPress, Italy
Journal of Public Health in Africa 2018; 9:772
doi:10.4081/jphia.2018.772

Selection criteria

For health insurance agents:

- belong to an insurance company which works with public structures,
- belong to a functional insurance company established before the event of UHC,
- be an agent of a health insurance company.

For policyholders:

- be covered by health insurance,
- reside in a chosen town.

Sampling strategy

The sample is stratified to offer an adequate representation of the seven administrative regions, each region being strata. At the same time, the UHI management has provided with a list of regions with functional insurance companies (Table 1). That's the basis of the choice of investigated municipalities.

The sampling basis is insurance companies of the seven selected regions. Based on these considerations the following table of the list of Senegal municipalities after the redistricting was used (Table 1). http://www.cena.sn/rappports/decoupage_administratif/collectivites.pdf

Agents of functional health mutual of all drawn municipalities were interviewed. Generally, the sample is made up of 24 agents, including eighteen agents of mutual and six DPI's agents (Table 2).

All agents of functional insurance companies in targeted areas were interviewed;

however, after a few conversations, a saturation point was reached. In the end, the numbers of agents of mutual and insurance companies interviewed in the different regions are as follows: Dakar four mutual and four DPI, Diourbel two mutual, Thiès two mutual and two DPI, Louga two mutual, Kaffrine two mutual, St. Louis and Kaolack three mutual each.

Regarding the beneficiary population, the mutual of Fandène was chosen for it has more members and it is the first established mutual in Senegal. Also, it is the one with the most information on mutual and a focus group with eight members was organized to gather their perception of mutual.

Collection method and tool: phrase-books

In-depth conversations were used to enable health insurance agents to freely express themselves on the different questions to the focus group of policyholders of health insurance.

Data were collected from a semi-structured phrase-book for mutual agents and another one for policyholders. A sociologist was involved in the conduct of the study.

Training and assessment of interviewers

Prior to the field deployment, the interviewers had all undergone training (evaluation) sessions to have the same insight and understanding of issues to standardize the recorded data.

The survey

The survey was carried out in two phases: I) A test phase: the test survey lasted two days and covered the collection tools with two mutual and one DPI; II) A final phase.

The survey was conducted from April 15th, 2016 to May 15th, 2016 in the various selected health insurance structures. Interviews were recorded on a dictaphone with the prior consent of certain agents. The interview was conducted in French in the most part of visited insurance services. For the focus group, the interview was conducted in Fandène in Wolof, the most understood language by the policyholders.

Data analysis

The interviews were exploited on the spot after each interview with the health insurance agent. All data recorded on a dictaphone have been processed in an electronic file. Interviews in Wolof were translated into French.

Results

Preliminary conditions for oral health care coverage in health facilities in Senegal through health insurance

First, the patient must be current on his/her subscriptions and wait for the end of a waiting period which varies between 1 and 3 months. To be covered by the mutual, the member must observe the health pyramid.

Oral health care costs and methods

Methods of coverage are well defined by all visited health insurance mutual and DPIs. Most insurers interviewed say that oral health care is covered by their health insurance; however, they deplore that these care uses between 30% and 50% of their annual budget. As the agent of the mutual of

Rufisque Est puts it in these words, “you know oral care absorb nearly 35% of our annual budget. It is because oral care costs are excessively expensive, so health mutual companies cannot fully cover them. In any case, for our health mutual, we only cover the curative aspect that is everything related to the extraction treatment. We do not cover dental prostheses”.

According to the DPI agent, almost 10% of the structure's resources are used to cover oral health care costs. To face up to this financial limit, the DPI SENTENAC only covers curative costs and related, none of aesthetic (dental prosthesis, eye wear) and related are covered by this social welfare institution. This DPI has not been subsidized by the government and has no partner, their subscriptions are based on the salary of the policyholder.

A qualitative analysis of the results has made it possible to see that the oral health care coverage by health insurance is carried out at two levels, in order of priority. That is to say that all curative-related are considered a priority. On the contrary, the “aesthetic” aspect, such as dental prostheses and dentofacial orthopedics, are barely covered by insurance companies.

Moreover, all insurance companies visited seem to cover oral health care. However, they all regret some difficulties encountered in the coverage of this care. The often long-delayed attendance of health facilities complicates the oral health status of the policyholder, which, therefore, only increases the incurred costs.

Dental surgeons and health insurance companies' relationship

Pretty much all interviewed health insurance agents stated that they do not

Table 1. Recap of selected municipalities.

Régions	Departements	Communes	Municipalities
Dakar	Dakar Rufisque	Dakar- plateau Rufisque	Gorée, Gueule-tapée, Fass Colobane, Rufisque Est et Nord
Diourbel	Mbacké	Ndame	Missirah, Touba mosquée
Thiès	Thiès	Keur Moussa	Fandène, Keur Moussa
Louga	Kébémér	Ndane	Dioukoul Diawrigne
Saint-Louis	Saint-Louis	Rao	Fass Ngom
Kaffrine	Mbirkilane	Mabo	Mabo
Kaolack	Nioro	Wack Ngouna	Keur Madongo

Table 2. Recap of visited mutual and DPI.

Insurers	Regions						
	Dakar	Diourbel	Thiès	Louga	Saint Louis	Kaffrine	Kaolack
Mutual	4	2	2	2	3	2	3
DPI	4		2				

have a special relationship with dental surgeons. *“As far as relationships are concerned, we do not sign agreements directly with dental surgeons. The health insurance company interacts with the healthcare structure for its members’ coverage, according to services offered”* confirmed the person in charge of the network Oyofal Paj of Kaolack.

However, DPIs, for the most part, collaborate with dental surgeons through private dental practices with whom they have agreements. This is due to the fact that, functionally, DPIs are much more structured than health mutual. As asserted by the official of the DPI SDE *“yes, about our relationship with dental surgeons, we sign agreements with certain private dental structures in the same way we sign agreements with public health structures but the only difference is that with these private structures we deal directly with specialists”*.

Difficulties related to dental health care coverage

The results reveal several difficulties in the access to oral health care.

Insufficiency of qualified staff

In the policyholders’ opinion, oral health care is not often within reach. There is a shortage of qualified dental care staff in health facilities or even an absence of staff. As this participant of the focus group says *“in this area our problem is to find a dentist, we have one health facility here with a nurse who does not know much about oral health care so you have to go all the way to the health center of Thiès to find a specialist and you know the transport and prescriptions costs become unbearable”*.

Lack of information or communication flaw

Patients’ lack of information on oral health care is another issue. Most policyholders attest not having any knowledge if oral health care is included in the package of services offered by health insurers. If referring to this beneficiary’s remark *“I did not even know that health mutual covers the oral health care. For me, it was just about diseases like malaria and tuberculosis because recently I had a child who had dental problems, but I had not gone through the Health Mutual I took him directly to the Health Center of Thiès”*.

Populations’ poor adherence

The predominant population’s poor adherence is among the various challenges health mutual organizations must deal with. Indeed, although the idea of mutual is increasing in Senegal, the percentage of the

population covered is still to be desired. Everywhere it is the same report: success rates of health mutual are still relatively low, sometimes calling into question the viability itself and the functioning of the organization, which is often run by volunteers who lack organization management skill. In contrast, with the aroused enthusiasm about health mutual among target populations in their beginnings, a good many of these organizations subsequently experienced lower than expected membership rates, a high rate of non-renewal of membership and problems with subscriptions’ deductions.

Lack of knowledge about mutual

Some mutual agents go further, like a mutual manager in Kaffrine who explains it in the following words: *“the problem of health mutual is nothing else than the Senegalese’ lack of knowledge about mutual. Their perception of subscribing for several years and not getting sick sometimes guides their keen mutualist interest. It is, therefore, now, up to us carriers and the government to heighten the population’s awareness and to make them adopt this knowledge about mutual based on solidarity”*.

High costs

The difficulties encountered by health insurance companies in the oral health care coverage, above the high cost of providing this care, some insurance agents deplore the long-delayed attendance to health facilities by policyholders when in need of oral health care. They almost all attest that *“toothaches patients utilize the services as a last resort and this only aggravates the situation and as a result, the coverage becomes very difficult and costly”*.

The interviewees say that some dental surgeons (the private sector) often go around dealing with conditions that are not included in the services offered. In addition, some dentists go over the reason for the consultation and draw up a treatment plan which increases the bill. Since the mutual insurance company does not cover prostheses, these dental surgeons dwell on trying to inflate the bills to make it compatible with the included cost of the prosthesis. For some carriers, this slows down the comprehensive coverage of oral health care, forcing the insurance company to cut off on the demand. Some health insurance carriers have to ask for the panoramic radiography to have a complete reading with their consulting dentist.

As the agent of the IPM Phosphate de Thiès explains it *“just like we do it with doctors; to lessen the risk of overbilling, when dentists send us invoices that our budget*

cannot cover, we hold an office meeting to recruit a consulting dentist”.

Crosscheck of the information received from health insurance companies with the opinion of some policyholders of health mutual

A focus group conducted among some policyholders has unable to qualitatively analyze that the majority of subscribers are up to date with their annual subscriptions. Conservative care and dental extractions are the oral health care coverage offered by the mutual, they, however, would like to have the dental prosthesis included in the package of services offered. This is the reason why they are not totally satisfied with mutual benefits. As attested by a focus group participant *“health mutual is a good thing. We all subscribe; however, there is a problem with the coverage, the ideal was that they cover all related oral health care, but, for example, they do not support dental prostheses”*.

Some of them claim that they did not even know that mutual covers oral health care. Indeed, most of the members interviewed attest that the treatment was valid for all structures in the area covered and would like all the oral health care to be covered by the mutual because they are expensive, even though they are not ready to increase their subscription fee in order to be covered for that care.

Discussion

Preliminary conditions for oral health care coverage by health insurance

“Primary health care is the most covered”, all interviewed agents have agreed on. A similar study carried out in Gabon, in 2013,⁷ showed that primary health care is also covered by all Gabonese mutual. Sure enough, the study by Laurent *et al.* reveals that the member must observe “a waiting period of at least one month before benefiting from the coverage offered by the health insurance”. A similar study carried out in Gabon confirms these results.⁸ In addition, in Dakar Lo *et al.* found that primary health care was the most covered.³

Methods of coverage

The type of acts and treatments, rates of coverage are extremely varied.⁹ The Vincelet *et al.* study in France, in 2008, shows the reimbursement for conservative and surgical care to practitioners.¹⁰

In this study, one of the interviewees said that “all curative care are reimbursable

by the insurance company, but care like prostheses and orthodontics are not to be reimbursed by their insurance.” Thus, in Mali, a study reveals that for practitioners, health insurance funds reimburse patients for conservative (caries treatment) and surgical care (mostly extractions), which are generally very well reimbursed (70% by health insurance). Another study carried out in Gabon also reveals the lack of aesthetic care coverage by health insurance.⁷ On the other hand, prosthetic care (crowns, bridges, removable prostheses) and orthodontics, as well as implants and most periodontal procedures, are subject to a free fee and are partially reimbursed (30% to 50%).¹¹

Restricted access to prosthetic care is happening. This results in further exclusion of the dental sector from social protection.¹⁰

Inoua A. au Gabon, in 2013, reveals that aesthetic treatments are not covered. Lô *et al.* in Dakar, in 2011, show that only 14.8% of mutual cover the dental prosthesis.³ Musango L. in Rwanda, in 2009, reports that all medical benefits are offered except for ARVs, prostheses and glasses.³ However, it should be noted that conservative and surgical care, which are priced-in care represent more than 2/3 of practitioners' activity but only 35% of firms' turnover.¹⁰ Moreover, policyholders state that they do not know “all services offered and want the prostheses and other care to be associated with their oral health care coverage”. A study carried out by Létourmy in Rwanda, in 2006, shows that members and non-members are unfamiliar with services offered by the mutual, although they are aware that certain services are excluded due to the low level of subscriptions and the low number of mutual. Some express their wish to see the coverage expanded in the long run and the creation of a mutual in each district.¹² A study carried out in France reveals that a prosthetic dental care package is established.⁹ Moreover, the beneficiaries interviewed stated that they “are not totally satisfied with the coverage offered by the insurance”. Such is the case in Morocco, where the rate of dissatisfaction of the coverage offered to the population is at 71.53%.¹¹

Dental surgeons and health insurance relationship

All interviewed agents declare not having a “direct relationships with dental surgeons”. They only have “a relationship with the structure with which they have an agreement”. However, they declare having a “direct relationship with dental surgeons of the private sector”. A study by Letourmy *et al.* shows that health insurance mainly oper-

ates through contracts or agreements with professionals and public or private health-care structures.¹³

However, compulsory insurance companies are in a better position to obtain high-quality services from professionals or institutions they have agreements with and can choose their partners. And, since they have a significant number of members, they have the ability to set the coverage rate. A study by Musango in Rwanda confirms it.⁸

Nonetheless, it is proven that private non-profit hospitals (missionary hospitals) have more consideration for patients and are therefore always preferred to equidistant public hospitals, even when these latter are good (Kenya). There are many examples: Nkoranza in Ghana, Bwamanda in DRC, Saint-Jean-De-Dieu in Senegal have done much for the development of health mutual.⁸ So, mutual have no direct link with the public provider while they do with the private sector as confirmed by this study.

Obstacles of oral health coverage The following obstacles were found.

The population low coverage rate

The interviewees stated that “the rate of membership is insignificant, it will be necessary to raise awareness to increase it” adding that “the subscription rate is much more important in rural areas than in urban areas”.

A study carried out by De Allegri *et al.* confirms it.¹⁴ Surprising result at first, but could be explained, on one hand, by the intense campaign to promote it among populations residing in the most remote areas and, on the other hand, the health mutual picks up the transport tab. Others point out that health mutual can easily reach the health facility.¹⁵

According to Zett, communities being able to choose their health center would influence the adherence, the only problem is the limited number of health facilities in rural areas.¹⁶ Even the focus group conducted among policyholders agreed on that fact “increase of health facilities”. The health insurance micro-economic contribution can then be effective for policyholders without necessarily improving the financing of the health care sector as a whole, due to the “low coverage rate of the populations”. Consequently, many organizations are fragile either because they have not mastered the “risk management, or because their viability is questionable.” A study by Waelken *et al.*, in 2007, confirms it, community based mutual in Africa, with fewer than a thousand contributors, shows their low number of subscribers.¹⁷

That could be a discouraging factor for

policyholders who have to postpone their treatments.^{18,19}

Insufficiency of qualified staff

According to policyholders, oral health care are often inaccessible. In Senegal, public dental structures are available in health centers, health districts and regional hospitals. Moreover, in 2014, a dental surgeon ratio to 27.591 inhabitants was very far from the recommended standard by WHO which is a dentist for ten thousand (10,000) inhabitants.²⁰

Lack of information or communication flaw

The Cofie *et al.* study in Burkina Faso, in 2013, highlights the effectiveness of the Communication, Education and Information (CEI) strategy, which had mainly been frequent and coherent IEC messages from multiple media channels. Moreover, education was the only socio-demographic factor that has significantly influenced householders' knowledge and registration.²¹

The high cost of oral health care

Health insurance agents state that “oral health care uses too much of their operating budget”. A study carried out in Thiès, Senegal,²² shows that only 8.3% of health mutual covers oral health care. And that 54.5% of mutual think that oral health benefits are expensive. Likewise, 92% of mutual members say that dental treatments are expensive. Generally, the dental prosthesis is only supported by 14.8% of mutual against 85.2% who do not. Thus, it can be deduced that the rate of dental prosthesis coverage is very low compared to other care. That is the case in Rwanda where La RAMA covers all offered medical benefits in public and accredited health facilities in the country except for ARVs, prostheses and glasses.⁸ Faye *et al.*'s 2012 studies in Senegal report that 78.9% of institutions have more than 10% of oral health care expenditures and more than half (52.1%) over 20% of total health care spending.²³

Conclusions

Health insurance contributes considerably to the coverage of oral health care of their members even if it generally does not take into account the “aesthetic” care. Hence, the need for the different actors to consult and communicate more to develop the culture among the population and advocate for a social protection that will allow the most deprived ones to have better access to oral health care.

References

1. YavoTchééré ML, Ndiaye C, Bourgeois D. Surveillance de la santé bucco-dentaire en Afrique: revue actuelle des politiques et stratégies. *Rev Epidemiol Sante Publ* 2009;57:419-28.
2. BIT. La protection sociale: Stratégies de l'OIT pour un accès universel aux soins de santé. *Rev, BIT*; 2007. pp 102.
3. Lo CMM, Cissé D, Diouf M et al. Prise en charge de la prothèse dentaire par les mutuelles de santé de la région de Dakar: revue col odonto-stomatol. *Afr Chir Maxillo-fac* 2011;18:23-6.
4. Letourmy A, Pavy-Letourmy A. La micro assurance de santé dans les pays à faible revenu. Agence Française de Développement, Notes et documents 2005;15:122-5.
5. Sow M, Diop M, Mbengue A, et al. Rapport d'analyse sur les dépenses catastrophiques de santé et leur impact sur l'appauvrissement et l'utilisation des services au Sénégal, 2005 et 2011. *African Health Monitor*; 2013. Available from: <http://www.who.int/en/ahm/issue/17/reports/rapport-d%E2%80%99analyse-sur-les-d%C3%A9penses-catastrophiques-de-sant%C3%A9-et-leur-impact-sur>
6. Organisation Mondiale de la Santé. Rapport sur la santé dans le monde, la recherche pour la couverture sanitaire universelle; 2013.
7. Inoua A, Musango L. La Caisse nationale d'assurance maladie et de garantie sociale du Gabon: un chemin vers la couverture universelle. *Afr Health Monit* 2013;17:15-9.
8. Musango L, Doetinchem O, Carrin G. De la mutualisation au risque maladie à l'assurance maladie universelle. *Experience du Rwanda* 2009;27:112-8.
9. Santé Buccodentaire. Principales Données Consulté le 02/11/2016 et disponible sur URL: http://www.sante.gouv.fr/IMG/pdf/Synthese_du_plan_bucco-dentaire.pdf
10. Vincelet C, Azogui-Lévy S, Grémy I. Etat bucco-dentaire et recours aux soins préventifs et curatifs de la population francilienne adulte. Observatoire régional de santé d'Ile-de-France, Ile-de-France; 2008. pp 112.
11. Kerak E, El Massaoui A, Imlahi A, Barrijal S. Étude de satisfaction des «clients» d'un organisme gestionnaire d'assurance maladie Au Maroc. *Assurances et gestion des risques* 2007;75:391-408.
12. Letourmy A. Assurance maladie: un cadre général d'analyse en vue de son implantation dans les pays d'Afrique francophone. In: Dussault G, Fournier P, Letourmy A. (ed.) 2006;17:13-51.
13. Letourmy A, Perrot J. Assurance maladie et contractualisation avec l'offre de soins dans les pays en développement, La contractualisation dans les systèmes de santé, Karthala, Paris 2005;34:123-32.
14. De allegri M, Kouyante B, Becker H, et al .Understanding enrolment in community health insurance in sub-Saharan Africa: a population-based case-control study in rural Burkina Faso. *Bull WHO* 2006;84:852-8.
15. De allegri M, Sanon M, Sauerborn R. To enrol or not enrol? A qualitative investigation of demand for health insurance in rural West Africa. *Soc Sci Med* 2006;62:1520-7.
16. Zett JB. La pertinence contextuelle des organisations mutualistes et de type mutualiste dans le domaine de la santé au Burkina Faso. *Economie et Solidarités* 2007;36:49-71.
17. Waelkens MP, Creil B. La mise en réseau de mutuelles de santé en Afrique de l'Ouest.L'union fait-elle la force?, Les enseignements d'un colloque international organisé à Nouakchott, 19 et 20 décembre, Institut de Médecine Tropicale, Anvers; 2007. pp 128.
18. Aviva R. Faire des soins de santé une prestation de sécurité sociale: approches institutionnelles de l'extension de la couverture. *Rev Int Séc Soc* 2010:63.
19. Lo CM, Diop M, Kanouté A, et al. Dental Care Risk Management Provided by Social Protection Institutions of Senegal. *J Public Health Afr* 2015;176:564.
20. Ministère de la santé et de l'action sociale du Sénégal. Plan stratégique quinquennal de lutte contre les affections buccodentaires au Sénégal 2014-2018. Direction de la lutte contre les maladies, Division de la santé bucco-dentaire, Dakar; 2014.
21. Cofie P, De Allegri M, Kouyaté B, Sauerborn R. Effects of information, education, and communication campaign on a community-based health insurance scheme in Burkina Faso. *Glob Health Action* 2013;6:207-91.
22. Lô CMM, Faye D, Cisse D, et al. Prise en charge des soins bucco-dentaires par les mutuelles dans le département de Thiès. *Rev Col Odonto-Stomatol Afr Chir Maxillo-Fac* 2008;15:28-32.
23. Faye D, Cisse D, Diouf M, et al. Part des dépenses de soins bucco-dentaires dans les dépenses de santé des institutions de protection sociale du sénégal. *Cah. Santé Publique* 2012;11:42-5