



SHORT COMMUNICATION

## Knowledge, Attitudes and Practices of Doctors and Dental Surgeons in Bamako on the Relationship Between Periodontal Diseases and Chronic Non-Communicable Diseases

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### Abstract

**Objective:** To assess the level of knowledge, attitudes and practices of doctors and dentists in Bamako on the relationship between chronic non-communicable diseases and periodontal diseases. **Material and Methods:** A cross-sectional study of 420 physicians and dental surgeons was conducted from March to August 2016. Data analysis involved descriptive statistics (frequency distribution). All statistical analyses were performed using the Epi Info 3.5.4 Software. **Results:** The male sex was the most represented with 58% for a sex ratio of 1.3. The most represented age group was 30-40 years old (48.8%) with an average age of  $33 \pm 8.2$  years. General practitioners were the most represented in 93.6% of cases. Physicians with no knowledge of periodontal disease accounted for 60% of all cases, and all dental surgeons reported knowledge of chronic non-communicable conditions in 100% of cases. Physicians and dental surgeons rated their knowledge levels of periodontal disease and chronic disease as inadequate in 98% and 90% of cases, respectively. Examination of the oral cavity by the doctors was "sometimes" carried out in 66% of the cases and the non-demand of the clinical signs of the gingival bleeding (64%) and dental migration (80.5%). They did not make recommendations on oral hygiene in 61.7% of cases. **Conclusion:** This study shows shortcomings among doctors and dentists in Bamako on the relationship between periodontal diseases and chronic non-communicable diseases. Capacity building and multidisciplinary collaboration are needed to support people's health.

**Keywords:** Health Knowledge, Attitudes, Practice; Periodontal Diseases; Physicians.

## Introduction

The term periodontal disease includes inflammatory conditions of infectious origin, located at the level of the supporting tissues of the tooth, the periodontium [1,2], the inflammatory component results from a microbial aggression modulated by the response of the host.

Many chronic diseases and periodontal conditions share the same characteristics, the same risk factors and the same consequences. The high prevalence of these diseases in the general population makes them a public health problem. Some chronic non-communicable conditions may have oral manifestations that increase the risk of oral disease, which in turn is a risk factor for a number of chronic non-communicable conditions [3].

Relationships between periodontal disease and certain chronic non-communicable conditions such as diabetes, obesity, cardiovascular, respiratory and joint diseases have been reported in several studies [4-6]. Beyond the quality of the management of chronic non-communicable conditions, the quality of life of the patients has also become a concern of the public authorities because they have become an issue of society, by their importance in the population, their cost and multiple interventions [7].

As general health is inseparable from oral health, interdisciplinary collaboration is necessary for the proper management of populations. The aim of the study is to evaluate the level of knowledge of the attitudes and practices of doctors (generalists and specialists) in Bamako, Mali, on the relationship between chronic diseases and periodontal diseases.

## Material and Methods

### Study Design

A descriptive and cross-sectional study of 400 physicians and 20 dental surgeons was conducted from March to August 2016. The variables studied were age group, year of graduation, level of knowledge of chronic non-communicable conditions and periodontal diseases, sources of information, interrelation between the two (2) diseases, examination of the oral cavity, reference of patients to colleagues, recommendation of oral hygiene, updating of knowledge.

### Statistical Analysis

Data analysis involved descriptive statistics (frequency distribution). All statistical analyses were performed using the Epi Info 3.5.4 Software (Centers for Disease Control and Prevention, Atlanta, Georgia, USA).

### Ethical Aspects

The study was conducted in complete accordance with the World Medical Declaration of Helsinki, and ethical approval was obtained from Research Ethics Committee, Centre National D'odonto Stomatologie, Centre Hospitalier Universitaire (CHU-CNOS). Informed consent was obtained from all participants.

## Results

The male sex was the most represented with 58% of the cases for a sex ratio of 1.3. The most represented age group was 30-40 years old (48.8%) with an average age of  $33 \pm 8.2$  years (ranging from 27 to 58 years). The most represented graduation period was 2010-2016 (59.3%) (Table 1).

**Table 1. Distribution of the workforce by age group and period of graduation.**

Variables	N	%
<b>Age Group (Years)</b>		
<30	61	14.5
30-40	205	48.8
41-50	141	33.6
≥51	13	3.1
<b>Graduation Period</b>		
1990-1999	17	4.0
2000-2009	154	36.7
2010-2016	249	59.3

General practitioners were the most frequent (93.6%), followed by dentists (4.8%) and other professionals (1.7% - including ophthalmologist, dermatologist, traumatologist, pediatrician, cardiologist, nephrologist and endocrinologist).

Physicians with no knowledge of periodontal disease accounted for 60% of cases and all dental surgeons reported having knowledge of chronic non-communicable conditions in 100% of cases. The level of knowledge of these periodontal diseases was insufficient in physicians and chronic conditions in dental surgeons in 98% and 90% of cases, respectively. The largest source of information on periodontal disease was scientific journals in 71.5% of cases (Table 2).

**Table 2. Distribution of physicians by sources of periodontal disease information.**

Source of Information	N	%
Scientific Journals	286	71.5
Congress	156	39.0
Internet	99	24.7
Media	86	21.5
Initial Formation	13	3.3

Examination of the oral cavity by physicians was "sometimes" performed in 66% cases and non-clinical signs of gingival bleeding (64%) and dental migration (80.5%). They did not make recommendations on oral hygiene in 61.7% of cases (Table 3).

**Table 3. Distribution of physicians according to the examination of the oral cavity and oral hygiene advice.**

Variables	N	%
<b>Examination of the Oral Cavity</b>		
Always	59	14.7
Sometimes	264	66.0
Never	77	19.3
<b>Oral Hygiene Advice</b>		
Yes	153	38.3
No	247	61.7

The general examination and the demand for the presence of chronic conditions during the consultation by the dental surgeons were "sometimes" realized in 80% and 15% of the cases. They advised "sometimes" in 60% of the cases a regular follow-up at a doctor (Table 4).

**Table 4. Distribution of dentists according to the completion of the general examination, request for chronic non-communicable conditions and follow-up.**

Variables	N	%
<b>General Examination</b>		
Sometimes	16	80.0
Never	4	20.0
<b>Request for chronic non-communicable conditions</b>		
Always	17	85.0
Sometimes	3	15.0
<b>Request for follow-up by a doctor</b>		
Always	8	40.0
Sometimes	12	60.0

## Discussion

In this study we collected 420 respondents, and in this sample practitioners aged 30 to 40 accounted for 48.8% of cases for an average age of  $33 \pm 8.2$  years, these results are lower than those previously reported [3], in which the authors found an average age of 44 years. This could be explained by the aging population of his sample.

With regard to sex, men represented 58% of cases with a sex ratio of 1.3. A previous study showed that 55% of the cases were female with a sex ratio of 0.83 [4]. Other authors have found a predominance of 79.6% [8], which can be explained by the fact that the medical profession is the preserve of women.

General practitioners accounted for 93.6% of the labor force; however, they were general practitioners and pediatricians in other studies, graduating after 1980, an average of 30 years of practice [3,7].

Sixty percent of physicians said they did not know about periodontal disease. This rate is lower than the rate observed for Midi-Pyrénées of 69% per cent [4], but remains high. However, some researchers showed that 67.1% of pediatricians did not receive oral health training after their studies [8]. In opposition, another study showed that 10% of French professionals had received prior training in dental surgery [9].

The main source of information of physicians was the scientific journals. All dental surgeons had knowledge of the chronic non-communicable conditions they had received during their initial training. In this study 61.7% of respondents reported a relationship between chronic non-communicable diseases and periodontal diseases. This rate of knowledge differs according to the general disease in a French study [4] with respective rates 55% of cardiovascular pathologies, 43% of joint pathologies and 26% of obesity.

Doctors found their knowledge levels on periodontal disease insufficient in 98.5% while it was insufficient in 94% according to the French study [4]. A complete general examination should

take into account the examination of the oral cavity. Nearly 20% of physicians said they had never done this oral exam. This rate is statistically comparable to the 15% reported in the French study [4] while another research reports that 93.9% of pediatricians claim to examine the teeth of their young patients in a systematic way against 5.6% occasionally; only one pediatrician answered never to perform a dental examination in his patients [8].

Gingival bleeding, tooth mobility, and foul breath were still investigated in 6%, 3.5%, and 2% of cases, respectively. Fifteen percent of dentists never sought a history of general illness. Furthermore, 7% of physicians routinely referred cases to dental surgeons, compared with 40% of dental surgeons who referred them to physicians. This reference rate towards dentists was 16% and 54.7% [4,8].

In our study, more than one third of doctors say they have never given oral advice against 92.2% of pediatricians who claim to have made recommendations to parents for cleaning their baby's teeth [8]. Almost all practitioners find that doctor / dentist collaboration is necessary (97.2%). This collaboration was deemed unnecessary by 1.5% of physicians. Medical practice requires a constant upgrade. All dental surgeons have expressed a desire to gain up-to-date knowledge of chronic noncommunicable conditions as well as periodontal diseases. This rate of desire to acquire new knowledge was respectively 63% and 77.2% in other French studies [4,8].

## Conclusion

This study shows shortcomings among doctors and dentists in Bamako on the relationship between periodontal diseases and chronic non-communicable diseases. Capacity building and multidisciplinary collaboration are needed to support people's health.

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