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Health Agents' Knowledge, Attitude and Practices for Leprosy Control in Ivory Coast

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ABSTRACT

Introduction: Leprosy is an infectious, chronic, communicable and not immunizing disease. About 18 countries were endemic worldwide including Ivory Coast which is the fifth infected country in sub-Saharan Africa.

Methods: This study aims to evaluate the knowledge and attitudes of health agents in two health care centers in Ivory Coast.

Results: One hundred eighty five (185) health agents were included. The majority of them were male with sex-ratio of 2.01. The average age was 40.1 ± 6.9 years (28 to 58 years). The majority (59.8%) of our respondents had high education level. The paramedical agents were the most represented (51.1%). The majority agents (General Hospital of Adzope (GHA)=70.5%/Raoul Follerau Institute of Adzope (RFIA)= 62.9%) did not know that leprosy had risk factors. But, they knew the causal agent (RFIA=63.9%)/ GHA= 47.7%) with a significant statistically difference. Few Agents stated that main transmission way of leprosy is nasal excretion (RFIA=43.3%/ GHA=22.7% associated with significant statistical difference). For them, leprosy was linked to hygiene (RFIA=67.7% / GHA=68.2%). The difference observed on attitudes between RFIA and GHA agents, wasn't statistically significant. They declared to accept working with leprosy patients (RFIA=60% /GHA=47.7%), and living with them (RFIA=78%/GHA=71.6%). The pity was the filling felt by the majority of agents (GHA=78%/ RFIA=68%). That pity was a sign of stigmatization. Almost all agents would not commit suicide if they were affected by leprosy, due to its acceptance nowadays.

Conclusion: Our study on knowledge and attitudes related-leprosy of agents from two leprosy care centers revealed a lack of training on leprosy. Therefore, The issue is to determine which intervention at health agents' level would brings elimination forward, improves global equity and to impact highly on leprosy future incidence.

Key words: Leprosy control, Knowledge and practices, Health agents, Ivory coast

INTRODUCTION

Leprosy is an infectious, chronic, communicable and none immunizing disease. It rages in endemic way in many tropical regions worldwide [1]. In Ivory Coast, it represents the third mycobacterial disease after Tuberculosis and Buruli Ulcer. Leprosy is caused by *Mycobacterium leprae* which is discovered byArmauer Hansen in 1873. This bacillus is acid fast organism and it has an essentially cutanéo-mucous and nervous tropism. According to WHO, about 182000 persons affected by leprosy live mainly in Asia and in Africa, at the beginning of 2012. About 18 countries were endemic worldwide, including Ivory Coast which is the fifth infected country in sub-Saharan Africa. More than 200000 new leprosy cases are detected annually worldwide [1,2].

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To reduce the incidence of leprosy several strategies were developed in endemic countries of leprosy. Although, these strategies leprosy remains endemic [3].

Thus, this study was conducted to evaluate the knowledge and attitudes of health care practitioners in both the Raoul Follereau Institute and the General Hospital of Adzopé in Ivory Coast toward leprosy, in order to improve leprosy control.

METHODS

It was a cross sectional study with descriptive and analytical aim conducted in both Raoul Follereau Institute and the General Hospital of Adzopé in Ivory Coast, during a time period of three months. All health care practitioners who gave their informed consent were included. Data were collected and analyzed by the software Epi Info, Word and Excel 2007. The quantitative variables were expressed in the form of average with the standard deviation and the extreme values, and the qualitative variables were expressed in the form of proportion or frequency. The difference was considered statistically significant if $p \leq 0.05$.

RESULTS

Socio-demographic aspects

One hundred eighty five health care practitioners were included. The majority of our respondents were male with sex-ratio of 2.01. The average age was 40.1 ± 6.9 years, ranges from 28 to 58 years. The majority of our respondents had high education level in 59.8% of cases. The health care workers in Raoul Follereau Institute of Azopé (RFIA) were more numerous than those in the General Hospital of Adzopé (GHA). The paramedical agents were the most represented in 51.1% of cases **(Table 1**).

Table 1. Socio-demographic aspects

Parameters	Frequency (n)	Percentage (%)
Sex -Female	**60**	**32.4**
-Male	**125**	**67.6**
Age [28-39[	**89**	**48.1**
[39-49[	**77**	**41.7**
[49-58]	**19**	**10.2**
Level of education		
-high	**110**	**59.8**
-secondary	**60**	**32.1**
-primary	**14**	**7.6**
-illiterate	**1**	**0.5**
Work place		
-RFIA	**97**	**52.2**
-GHA	**88**	**47.8**
Types of Agents		
-Paramedical	**94**	**51.1**
-Technical and administrative	**73**	**39.2**
-Medical	**18**	**9.7**

Knowledge of the respondents on the epidemiology of leprosy

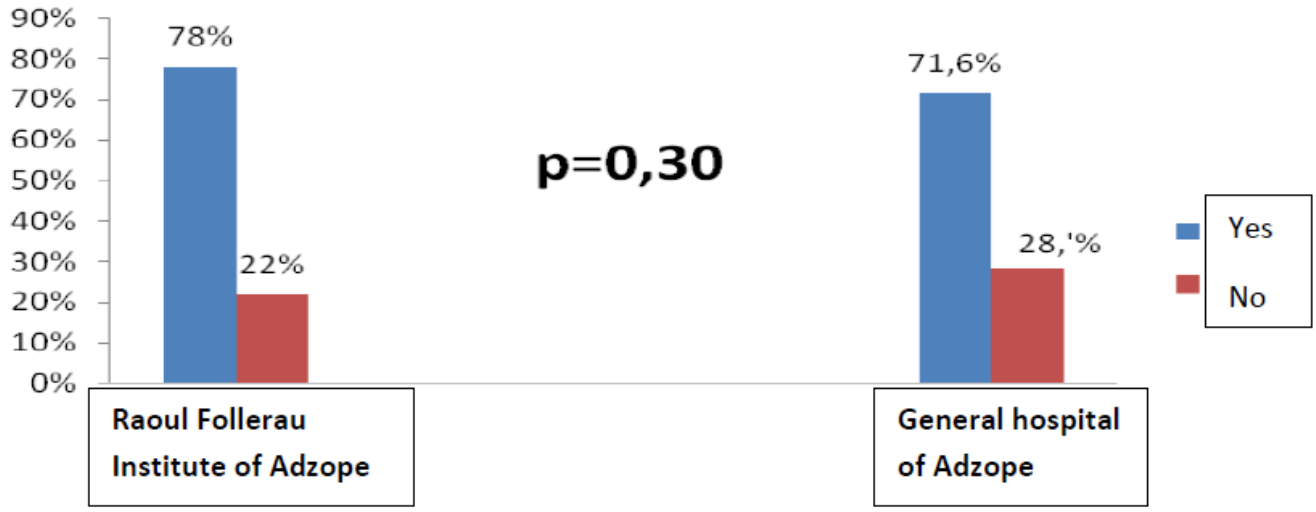
All of the 185 respondent agents declared to know the existence of leprosy. The survey revealed that about 70.5% of respondent agents of GHA and 62.9% respondent agents of RFIA of Ivory Coast did not know leprosy had risk factors. These factors are bad hygiene, living with active leprosy patients, having contact with nasal excretion of leprosy patient, etc.). Thus, 63.9% agents of RFIA and 47.7 % agents of GHA answered that leprosy is due to *Mycobacterium leprae,* and the difference observed was statistically significant. They stated that leprosy was not linked to age, respectively in 87.6 of cases for RFIA agents and 71.6% of cases for GHA agents. In addition, our respondents declared to know that leprosy is not link to sex in both RFIA and in GHA, respectively in 87.6% and 80.7% of cases. The respondent agents from RFIA in 67.7% and those from GHA in 68.2% said that leprosy was linked to hygiene. They also told about exclusion of patients affected by leprosy, respectively in 76% and in 70.5% of cases. For the majority of them, leprosy is not inherited in 75% of cases in the RFIA and in 57% of cases in the GHA. Agents from RFIA (43.3%) and those from GHA (22.7%) stated that main transmission way of leprosy is nasal excretion associated with significant statistical difference.

Knowledge of the respondents on the diagnosis and treatment of leprosy

Agents from GHA in 69, 3% of cases and those from RFIA in 61.9% of cases responded that leprosy manifested itself only by insensible stain on the skin. Less than 50% of them said that leprosy could not lead to sterility. The agent from both RFIA and GHA recognized that leprosy wasn't an immune disease, respectively in 45% and 40.6% of cases; and it doesn't exist an efficient traditional treatment against leprosy, respectively in 61% and 55..7% of cases. In addition, the agents from RFIA in 67% of cases and those from GHA in 56.8% of cases knew that curative medical treatment exist in the reference leprosy centers. The agents from RFIA (76%) and those from GHA (56.8%) also said that leprosy can lead to death if left untreated.

Attitudes of the health care agents towards leprosy

Our study on respondent agents has showed that they adapted different behavior towards leprosy. We noted that, the difference observed wasn't statistically significant on attitudes between agents from RFIA and those from GHA. The respondent agents from both RFIA and GHA declared that they accept to work with leprosy patients respectively in 60% and 47.7% of cases (p=0.13), and to live with leprosy patients respectively in 78% and 71.6% (p=0.30) (**Figure 1**). The pity was the filling felt by the majority of agents from GHA in 78% of cases and from RFIA in 68% of cases (p=0.16). That pity was a sign of stigmatization. In our study, almost all agents mentioned, they would not commit suicide if they were affected by leprosy and this, because of the acceptance of leprosy nowadays (p=0.89). We found that, the majority of agents from GHA (84.1%) and RFIA (83%) did not receive any training on leprosy. All these agents wished to receive training on leprosy.



(The statistically difference observed was significant, p=0.30; IC=95%)
Figure 1. Acceptance to live with leprosy patients: difference between RFIA and GHA agents

COMMENTS

Leprosy is one of the Neglected Tropical Diseases (NTDs), which manifest itself mainly through dermatological-neurological signs and symptoms. It is largely confined to (sub) tropical poor resource-regions. In these areas leprosy mostly leads to substantial morbidity, disability and even mortality and consequently have high socio-economic impact [1,4]. The related- physical disabilities may result in deceased ability to work, limitation of social life and psychological problem, therefore to less self-exclusion or stigmatization [5,6]. These reports corroborated with those in our study where all respondents agents known that leprosy may lead to patient exclusion or stigmatization. In addition; the long incubation period between the infection and clinical manifestation of leprosy (chronic disease course) and poor hygienic conditions may be key factors explaining why it stills endemic in regions where WHO goal was reached (not to be a public health problem) [7]. All our respondent agents known the disease agent, the transmission conditions, but only few of them (RFIA =43.3%)/ GHA =22.7%) stated that the main transmission way of leprosy is nasal excretion (associated with significant statistical difference). Moreover, they also stated that leprosy is not immunizing disease respectively in 45% of cases in RFIA and in 40.6% of cases in GHA. In term of clinical aspects, the majority of our respondents had less information about extra-cutaneous signs such as edema, paralysis, amputation and chronic ulcer. They agents from RFIA (45%) and those from GHA (40.6%) stated that leprosy cannot lead to sterility. Many scholar reported that leprosy can lead to orchi-epidydimitis in men therefore to sterility.In fact, general practitioner, dermatologists, and other health practitioners should be aware of leprosy's symptoms and clinical manifestations. Therefore to consider the disease as a possible diagnosis, especially in patients coming from leprosy endemic areas [8,9] where leprosy can mimic over tropical diseases. In our study, the majority of our respondent agents seem not to be aware of leprosy symptom and clinical manifestations that may help for diagnosis. So, health care practitioner from both RFIA and GHA should be trained on leprosy, in order to include leprosy among the potential causes of cutaneous and neurological signs observed in the daily practice. It would also advisable to the universities of Ivory Coast curricula to teach junior doctors, nurses, midwifes and medical students about leprosy, and for senior health agents to have continue medical education on leprosy.

Given our finding, though leprosy is not any more a public health problem in many tropical regions, it still endemic.

Globally the number of leprosy cases has decreased from 752417 in 2000 to 180618 in 2013. In 2013, the overall occurring in the low- and middle-income countries were: 71% from the region of South-East-Asia, 15.5% in the Americas, 8.8% in Africa, 3.3% in the western pacific, and 1.2% in the Eastern Mediterranean [10,11]. More than 200000 new leprosy cases are detected annually [2]. For that; WHO formulated a "Roadmap" for four NTDs including leprosy in which disease control progression relay on case detection with innovative and intensified disease management [3]. The recent WHO targets for leprosy are (1) global interruption of transmission or elimination by 2020, and (2) reduction of grade-2 disabilities in newly detected cases to below 1 per million populations at global level by 2020 [12].

But, the large number of undetected cases remains a threat to the elimination of leprosy generally. The missing leprosy's cases contribute to the ongoing transmission. These missing cases have been estimated over 4 million cases between 2000 and 2020 worldwide [13]. It means that, the actual number of new leprosy cases is likely to be higher than presented in our prediction [13,14]. In some, our study finding shown that, health agents hadn't a sufficient knowledge on leprosy as well as a good attitude and practice towards leprosy. This was also reported in Reunion island, where a study shown that, regarding clinical features of patients, a high rate of disability at the time of diagnosis has been reported for 24% of cases (grade-2 disability) which is indicative of late detection. This report was explained by general practitioners' poor knowledge of leprosy as found in our study [15].

CONCLUSION

Leprosy remains endemic in many tropical countries, in particular in Ivory Coast, due the ignorance and some empiric considerations on it. Our study on knowledge and attitudes related-leprosy of agents from two leprosy care centers revealed that there was lack of training on leprosy (less than 45% of agents have knowledge on leprosy). The attitudes of agents varied and depend upon the acceptance and knowledge of the disease. Therefore, An important issue is to determine which intervention at health care practitioner level would bring elimination forward, improve global equity and have the highest impact on future incidence of leprosy in Ivory Coast, and in general worldwide.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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