

Socio-Environmental Inequalities and ENT Disorders in Children

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Abstract— The aim of our study was to assess the different socio-environmental aspects that can influence the management of these pathologies. **Materials and methods:** This was a prospective cross-sectional descriptive study that took place over a period of 9 months and the data were collected during the period from November 2015-July 2016. All patients from 0 to 15 year olds seen in consultation suffering from an ENT pathology who agreed to participate in our study. **Results:** A total of 96 participants were included among children aged 0 to 15 years. Our study showed that the age group from 1 to 4 years was the majority 36.50% and the male sex was predominant with 57.30% for a ratio of 1.34 (Table 1). It appears from our study that 51% of the mothers of the patients were not educated (Table 2). More than half of our patients had been subject to repeated ENT disorders, i.e. 68.75% (Figure 1). Outdoor bathing was the most frequent factor during this study in 16.9% (Table 3). Acute otitis media is more common in children who bathe outdoors (open toilet) (Table 4). **Conclusion:** Most of the parents (91.1%) had no knowledge of ENT disorders. Our study confirms one of the behaviors conducive to health, namely the use of basic health facilities and finally to inform parents about the existence of ENT conditions related to certain behaviors.

Keywords — Socio-environmental inequalities-ENT diseases-Child.

I. INTRODUCTION

Our populations are increasingly confronted with socio-economic and environmental impacts, these factors considerably influence the management of children's ENT pathologies. Considering the clinical peculiarities of affections in children, their adequate management is necessary to avoid the occurrence of complications. Otorhinolaryngology (ENT) is the branch of medicine specializing in conditions of the nose, throat, ears, neck and face [1,2].

In France, it is accepted that 60% of pediatric recruitment comes under ENT [3]. Recent studies have highlighted the existence in France of health inequalities linked to the environment of origin, understood as living conditions in childhood and ascending characteristics [4,5]. In our developing countries like Mali, because of poverty and promiscuity, ENT diseases remain a real public health problem. In Mali, a study carried out by Soumaoro S at the Gabriel Toure hospital in 1991 showed that 12% of hospital consultations were recorded in ENT [6].

Health inequalities are considered according to sex, territory, societal, political and ethical criteria that prevail in French society. They are considered inadmissible and consequently their reduction constitutes a principle of action and choice of priorities [7].

Environmental inequalities have a very strong territorial and social dimension, and can be analyzed according to two processes that can be combined [8]:

- Inequalities in exposure linked to disparities in the geographical distribution of environmental nuisances, these are therefore environmental disparities. They can

take into account a social dimension and in this case we most often observe a combination of social and environmental inequalities.

- Inequalities in vulnerabilities linked to pre-existing illnesses (chronic conditions, unhealthy behaviors such as smoking or poor diet) with strong interference from the social and educational context, as well as a so-called sensitive period of life (childhood, pregnancy) and cumulative exposures (indoor air quality, occupational exposure, transport, etc.).
- Social inequalities in health refer to the close relationship between health and membership of a social group. They are mainly perceptible through the different mortality rates depending on membership of a socio-professional category and level of education [9].

About 60% of consultations are dominated by child ENT pathologies in the reference health center of Commune IV of the District of Bamako [10].

The results of the study will make it possible to assess the various socio-environmental aspects that can influence the management of these pathologies.

II. MATERIALS AND METHODS

Our study took place in the ENT unit of the reference health center of commune IV of the health district of Bamako Mali. The District of Bamako is made up of six communes; at the level of each municipality there is a health center of reference of the municipality. In each district there is at least one community health center (CSCOM) and private clinics which provide care for sick children. Located in the western part of Bamako, Commune IV covers an area of 37.68 km² or 14.11% of the area of the district. It is limited:

To the West by the Circle of Kati, to the East and North by Commune III, to the South by the bed of the Niger River and Commune III. The total population of commune IV in 2014 is estimated at 357,792 inhabitants. In total, there are 8 districts in commune IV of Bamako: Lafiabougou, Djikoroni Para, Hamdallaye, Sébénikoro, Taliko, Lassa, Sibiribougou, Kalabanougou.

Types of study: This was a prospective cross-sectional descriptive study

Study period

The study took place over a period of 9 months (November 2015-July 2016).

Study population

The study concerned patients from 0 to 15 years old received in ENT consultation in the ENT unit of the reference health center of commune IV in the district of Bamako.

Inclusion criteria

Were included in this study all patients from 0 to 15 years seen in consultation suffering from an ENT pathology who agreed to participate in our study.

Non-inclusion criteria:

Parents and patients or accompanying persons who refused to answer our questionnaires.

Patients not suffering from ENT pathologies.

Sampling calculation

$$N: [z^2 (px q)] i^2$$

N: Number of patients

P: prevalence of ENT conditions in children aged 0 to 15 years in the CIV reference health center, p: 0.517 (statistical source and health information CS Ref C-IV

Z: 1.96²

i: accuracy: 10%

q: 1-p; q: 1-0.836: 0.164

N: 96 patients

Data collection: Information about each child was collected from a survey form containing the information collected on admission either by an intern, or by a specialist in ENT or by medical assistants in ENT. Data were entered using Microsoft office 2010 software (Word and Excel) and analyzed with EPI info version 6. Patients were registered with their assent or the informed consent of their parent

III. RESULTS

In total, 96 participants were included among children from 0 to 15 years old. Our study showed that the age group from 1 to 4 years was the majority 36.50% and the male sex was predominant with 57.30% for a ratio of 1.34 (Table 1). It appears from our study that 51% of the mothers of the patients were not educated (Table 2). More than half of our patients had been subject to repeated ENT disorders, i.e. 69% (Figure 1). Outdoor bathing was the most frequent factor during this study in 16.9%. Acute otitis media is more common in children who bathe outdoors (open toilet) (Table 3).

IV. DISCUSSIONS

Our study, conducted over a period of nine (09) months from November 1, 2015 to July 31, 2016, was a first on socio-environmental inequalities and ENT conditions in our country,

so we must highlight some difficulties, including the difficult collaboration with parents regarding answers to questions related to financial and material income.

Our study focused on children aged between 0 and 15 years. The most represented age group was from 1 to 4 years old with 36.50% of cases, which is explained by the high frequency of AOM at this age, partly linked to nasopharyngitis. On the other hand, the age interval of 1 to 4 years, including the age of gripping, explains certain cases of consultation for the management of ENT foreign bodies.

Among the male parents, 38.50% had a level of education limited to secondary school and 51.04% of the maternal parents were uneducated. This can be explained by the intellectual heritage (knowledge of literacy and education) whose levels tend to be lower among the poor ; this also influences household decisions about the immediate determinants of health [25]. Contact with allergens such as smoke from cigarettes, wood or others, mosquito nets, flowers, animal hair, outdoor bathing were the elements found among the determinants of the child's ENT health. Most of the work (MANE.K [26], BOIRE.S [24] confirms these factors as favoring conditions in the ENT sphere.

Our study showed that 69% of our patients suffered from repeated ENT disorders. This could be explained either by the quality of care or by the repetition of the factors favoring these conditions.

V. CONCLUSION

Most of the parents (91.1%) had no knowledge of ENT disorders. Our study confirms one of the behaviors conducive to health, namely the use of basic health structures and finally to inform parents about the existence of ENT conditions related to certain behaviors.

TABLE I.

S. No.	Distribution of patients according to socio-demographic characteristics (sex and age groups) n: 96		
	Sociodemographic characteristic	Frequency	Percentage
1	Sex		
	Male	55	57%
	Female	41	43%
2	Age range		
	0 to 11 months		
	5 to 9 years		
	1 to 4 years		
	10 to 15 years		
	Total		

TABLE II.

S. No.	Distribution of patients according to contributing factors		
	Factors	Frequency (451)	Percentage
1	Outdoor bath (open WC)	76	16.9
2	Incense	68	15.1
3	fumes	65	14.4
4	Passive smoking	57	12.6
5	Perfumes	57	12.6
6	Impregnated mosquito net	52	11.5
7	Insecticidal sprays	38	8.4
8	Animal hair	21	
9	Flowers	17	3.8

TABLE III.

S. No.	Distribution of patients according to contributing factors		
	Factors	Frequency	Percentage
1	Acute otitis media	28	29.2
2	Nasopharyngitis	17	17.8
3	Chronic otitis media	15	15.6
4	Cerumen cap	10	10.4
5	Allergic rhinitis	7	7.3
6	Mumps	5	5.2
7	Tonsillitis	5	5.2
8	External otitis	4	4.2
9	Foreign bodies of the nasal cavities	3	3.1
	Foreign bodies of the esophagus	1	1
	Epistaxis	1	1

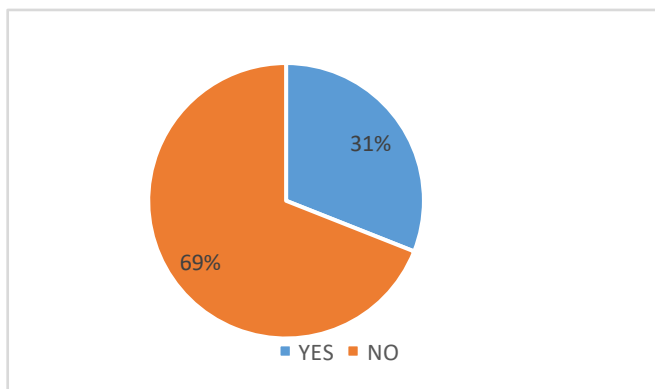


Fig. 1. Distribution of patients according to recurrent ENT conditions.

REFERENCES

[1] SACKO HB. The essentials in otolaryngology and pathology of the face and neck, (ISBN: 2-9518377-0-4) Paris. March 2002.
 [2] SACKO HB. Course of Otorhinolaryngology (ISBN: 978-2-9518377-1-3) Paris. September 2004.
 [3] Becker W, Nauman HH, Precise ENT PlaltzC-R. Translation from German by Luboinski B-Edition Flammarion Medicine sciences 2003.
 [4] Trajectory and premature mortality (35-65years) in France. Findings from the Gazel Cahort Study. Epidemiol community Health. 2006;06(11)937-44.
 [5] Combois E, jusot F. Contribution of life long adverse experience to social health. In France – EUR public Heath 2010 (in press).

[6] Soumaoro S Analysis of the one-year activity report of the ENT department of the HOSPITAL Gabriel Touré (from January 1 to December 31, 1991) Thesis Med-Bamako 1991 n°1943.
 [7] Emmanuelle Sarlon, public health intern HCSP-December 2002- Drafting the public health programming law.
 [8] Note on the coordination of the fight against health inequalities within the ARS PACA-2014.
 [9] ARS-Regional Health Agency of the Alpes Côte d'Azur province: Research and statistical analyzes PACA-file n°206 December 2014.
 [10] SACKO HB. Otorhinolaryngology of children in Mali, current aspects and perspectives (assessment of 1118 patients) Mali Med. 1996 TXI N°3 and 4
 [11] SACKO HB. Dembélé RK, Diallo-AO Overview of ENT disorders in children aged 0 to 5 years in the CIV commune of the Bamako district. 2nd days of the tele polyclinic November 2007 Bamako oral communication.
 [12] Boinot P and Frohlich K. Department of Social and Preventive Medicine University of Montreal.
 [13] Bihir A and Pfefferkoun R. The inequality system 2008.
 [14] F. Veillon high stone hospital. Strasbourg with the collaboration. Bonafé A and Grouzet. G.
 [15] Sébastien L and Brodhag C. Sustainable Development. Review .org 2004.
 [16] World Bank, facing AIDS: priorities for action public in the face of a global epidemic. Luxembourg European communities 1998.
 [17] Bloom D and Sacls J. Geography, demography and economics grout in Africa. Brookings Papers on Economic Activity 1998, 2207-95.
 [18] Gehanno P and Vilde JL Infections in ENT laboratories Beecham 1982.
 [19] Afssaps. Systemic antibiotic therapy in current practice in upper respiratory infections, recommendations 2005. Aneas Indications for adenoidectomy and/or tonsillectomy in children, 1997.
 [20] GEHANNO.P and VILDE.JL infections in ENT laboratories BEECHAM 1982.
 [21] Pediatrics, BOURRILLON.A, BENOIST.G, 4th edition Elsevier Masson 2009 France.
 [22] SACKO HB. MD PHD in Otorhinolaryngology. ENT courses Editions 2017.
 [23] PESSY.JJ ENT emergencies in adults and children laboratories of DR BOUCHARA. E.
 [24] BOIRE S. Knowledge, attitude and behavior of parents in the face of ENT pathologies [Med thesis]. Bamako: University of Mali; 2014, No. 14M260.
 [25] Filmer D and Pritchett L, the effect of house hold wealth on education al attainment evidence from 35 countries-population and development review 1999, 25:85-120.
 [26] MANE K. Appearance the management of ENT disorders in the pediatric unit of CSréf CIV in the district of Bamako. [Med thesis]. Bamako: University of Mali.