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Original article

Outpatient pediatric morbidity: a review of the years 2021 and 2022 in the regions of Senegal with the African Centre of Excellence for Maternal and Child Health (CEA SAMEF)

La morbidité pédiatrique ambulatoire à propos du bilan des années 2021 et 2022 dans les régions du Sénégal avec le Centre d'excellence africain pour la sante de la mère et de l'enfant (CEA SAMEF)

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Résumé

La santé et la survie des enfants de moins de cinq ans constituent une priorité de santé publique en particulier dans les pays d'Afrique subsaharienne, le Sénégal à l'instar des autres pays d'Afrique subsaharienne est caractérisé par un taux de mortalité élevé. Dans cette optique, le CEA-SAMEF contribue à la lutte contre la morbidité et la mortalité par des activités d'appui communautaires sous forme de consultations médicales gratuites dans les différentes régions du Sénégal. L'objectif principal de notre travail était de faire le bilan de ces activités.

Il s'agissait d'une étude rétrospective et descriptive portant sur toutes les consultations réalisées dans la période allant de janvier 2021 à décembre 2022. Les paramètres étudiés étaient les caractéristiques sociodémographiques, cliniques et thérapeutiques.

Durant la période d'étude, 1116 enfants ont été consultés. Parmi eux, le sexe masculin prédominait avec 59,5 %, soit un sexe ratio de 1,47. Les enfants âgés de moins de 5 ans avaient représenté 52,2 %. La majorité des enfants résidaient dans la région de Diourbel. Les motifs de consultation étaient dominés par les troubles respiratoires (35,12%), les troubles digestifs (24,21%) et la fièvre (21,2%). Les affections respiratoires (37,65%) étaient au premier plan suivi des pathologies infectieuses (27,1%) et digestives (24,7%). La prise en charge était faite globalement d'antipyrétique (paracétamol), d'antiparasitaires (Albendazole et mebendazole), de salbutamol (β2 mimétique) et d'antibiotiques (amoxicilline et amoxicilline-acide clavulanique).

Les activités d'appui communautaire contribuent efficacement à la lutte contre la morbidité et la mortalité qui constituent une priorité de sante publique surtout dans les pays d'Afrique subsaharienne.

Mots-clés : Enfant, Appui communautaire, Morbidité, Sénégal.

Abstract

The health and survival of children under five years of age is a public health priority, particularly in sub-Saharan African countries. Senegal, like other sub-Saharan African countries, is characterized by

a high mortality rate. In this context, CEA-SAMEF contributes to the fight against morbidity and mortality through community support activities in the form of free medical consultations in various regions of Senegal. The main objective of our work was to assess these activities.
This was a retrospective and descriptive study covering all consultations carried out in the period from January 2021 to December 2022. The parameters studied were sociodemographic, clinical and therapeutic characteristics.
During the study period, 1116 children were seen. Males predominated at 59.5%, representing a male-to-female ratio of 1.47. Children under 5 years of age accounted for 52.2%. The majority of children resided in the Diourbel region. The reasons for consultation were primarily respiratory problems (35.12%), digestive problems (24.21%), and fever (21.2%). Respiratory illnesses (37.65%) were the most common, followed by infectious diseases (27.1%) and digestive problems (24.7%). Treatment generally consisted of antipyretics (paracetamol), antiparasitics (albendazole and mebendazole), salbutamol (βa 2-agonist), and antibiotics (amoxicillin and amoxicillin-clavulanic acid).
Community support activities contribute effectively to the fight against morbidity and mortality, which are a public health priority, especially in sub-Saharan African countries.
Keywords: Child, Community support, Morbidity, Senegal.

Introduction

The health and survival of children under five is a public health priority, particularly in sub-Saharan Africa and South Asia. According to the latest report from the United Nations Inter-Agency Group on Child Mortality Estimation (UN-IGME), published in 2021, the world is still not on track to achieve the Sustainable Development Goals aimed at ending preventable deaths of newborns and children under five [1] . The number of deaths of children under five worldwide remains high and alarming, especially in the world's poorest countries, despite considerable efforts. Indeed, in 2020, more than five million children under five died, including 2.4 million newborns. The infant and child mortality rate in low-income countries is 66‰ live births compared to 5‰ live births in high-income countries [1] .
Sub-Saharan Africa remains the region with the highest under-five mortality rate in the world, at 74 deaths per 1,000 live births [1] . Senegal, like other sub-Saharan African countries, is characterized by high neonatal and infant mortality rates. According to the latest results of the 2019 Continuous Demographic and Health Survey (CDH), neonatal mortality stands at 21 per 1,000 live births and infant mortality at 37 per 1,000 live births [2] . Despite some progress, the targets set have not been met due to the very slow rate of decline in this mortality. The Sustainable Development Goals (SDGs), particularly those relating to maternal and child health, recommend that all countries move towards the elimination of preventable deaths of newborns and children under five years of age [16] .
In this context, CEA-SAMEF contributes to the fight against neonatal and infant morbidity and mortality by training specialists in Pediatrics and Gynecology, organizing short-term training courses to strengthen the skills of practitioners at the operational level in the care of mothers and children, and also through community support activities in the form of free medical consultations across the different regions of Senegal.

The main objective of our work is to take stock of the community support activities carried out during the years 2021 and 2022.

Methodology

This was a retrospective and descriptive study.
It covered all consultations carried out in the regions during the period from January 2021 to December

2022 as part of community support activities organised by CEA-SAMEF.

It involved children seen in different regions during the study period.

The study aimed to be exhaustive. All children consulted in the different regions and whose information was recorded on the data collection forms were included.

The data was collected from data collection forms. The database was built using an input mask created on Epi Info.

The parameters studied were as follows :

- data : age (0-5 years; 5-10 years; 10-15 years), sex and geographic origin
- data : reasons for consultation and diagnoses retained
- data : symptomatic and etiological treatment with the use of different therapeutic classes depending on the diagnosis retained.

The collected data was entered into the Epi info V 7.2 software.

The analysis was performed using Excel 2010 and SPSS version 22 software.

Results

- *Sociodemographic*

During the study period, 1116 patients were recorded, representing an average of 558 consultations per year. Specifically, 2022 saw 722 patients (64.7%) compared to 394 (35.3%) in 2021.

The patients' ages ranged from 1 day to 15 years for the oldest, with an average of 5.09 years.

The distribution according to age groups is listed in Figure 1. It shows that patients under 5 years of age were the most represented age group with 582 patients or 52.2%.

Conversely, patients aged 10-15 years were the least represented with 193 patients or 17.3%.

The patients in our study were predominantly male (59.5%) with a sex ratio of 1.47.

The majority of patients in our study came from the city of Touba, with 574 patients representing 51.5%. Patients from the Kaffrine region were the least frequent, with 14 patients, or 1.2% of cases. Table I shows the distribution of patients according to geographic origin.

- *Reasons for consultation*

The reasons for consultation were diverse and varied, dominated by fever, respiratory problems (cough, rhinorrhea, nasal congestion), and digestive problems (diarrhea, abdominal pain, and vomiting). Table II shows the distribution of patients according to their reasons for consultation.

- *Selected diagnoses*

Respiratory diseases (282 patients or 37%) were the most common, followed by infectious diseases (203 patients or 27%) and digestive diseases (85 patients or 24%).

Table III shows the distribution of patients according to the diagnoses retained.

- *Symptomatic treatment*

In our study, the main drug prescribed was paracetamol (analgesic and antipyretic), followed by antiparasitics (Albendazole and mebendazole) and salbutamol (β2-mimetic).

- *Etiological treatment*

Etiological treatment was documented for 141 patients, representing 12.6% of all cases. The results revealed a predominance of antibiotics, particularly amoxicillin, with or without clavulanic acid.

The anti-anemic agents were represented exclusively by iron.

Antimalarial drugs were prescribed to 5 patients. This consisted of artemisinin-based combination therapy (ACT) in 3 cases, and artemether and artesunate in the other two cases.

Table I: Distribution of patients according to geographical origin

Area	Effective	Percentage %
Diourbel (Touba)	574	51.5
Dakar	262	23.5
Thiès	123	11.1
Saint Louis	63	5.6
Kaolack	57	5.1
Louga	23	2
Kaffrine	14	1.2

Table II: Distribution of patients according to reasons for consultation

Reasons for consultation	Effective	Percentage%
Respiratory signs	502	35.12
Digestive problems	346	24.21
Fever	303	21.2
Dermatological signs	94	6.6
Eye signs	31	2.16
Ear signs	21	1.46
Headaches / Anorexia	86/46	6.01/3.22

Table III: Distribution of patients according to the diagnoses retained

Diagnosis	Effective	Percentage%
Respiratory diseases	282	37.65
Infectious diseases	203	27.1
Digestive disorders	185	24.7
Eye diseases	38	5.07
Hematological disorders (Anemia)	23	3.07
Dental caries	18	2.4

Table IV: Distribution of patients according to symptomatic treatment

Symptomatic treatment	Effective	Percentage
Analgesic and antipyretic (paracetamol)	232	41.8
Pest control	88	15.85
B2 agonists (salbutamol)	44	7.93
Antihistamines	28	5
Antibiotics/antiseptics	29/07	5.22/1.26
Corticosteroids/Antispasmodics/Antiemetics	19/7/10	3.42/1.26/1.8
Zinc/ORS/Iron/Antisecretory agents	39/17/14/21	7.02/3.06/2.52/3.78

Table V: Distribution of patients according to etiological treatment

Antibiotics	Effective	Percentage
Amoxicillin	49	34.75
Amoxicillin-Clavulanic Acid	32	22.7
Amoxicillin-metronidazole	1	0.7
Amoxicillin-Azithromycin	5	3.5
C3G	7	5
Gentamicin	6	4.25
Josacine	4	2.8
Metronidazole	4	2.8
Ciprofloxacin	4	2.8
Ampicillin	1	0.7
Ofloxacin	1	0.7
Ofloxacin-metronidazole	1	0.7
Antianemic	14	10
Antifungal	4	2.8
Parasite remover	3	2.12
Antimalarials	5	3.5
Total	141	100

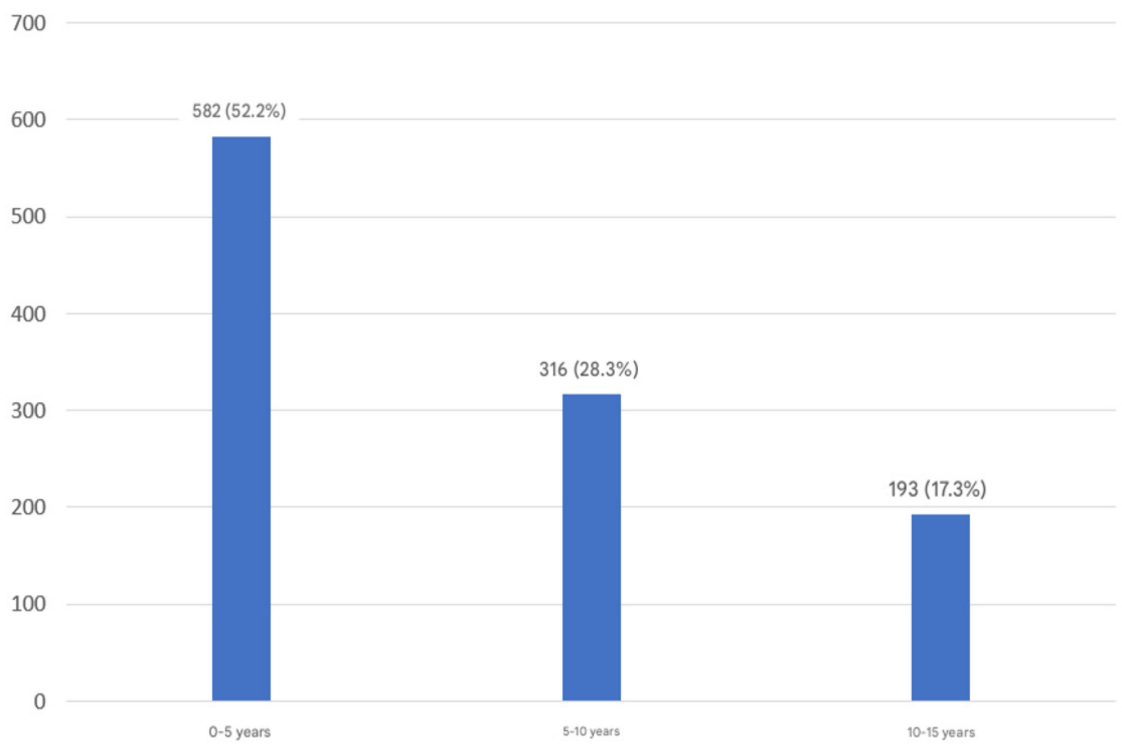

Figure 1: Distribution of patients according to age groups

Discussion

From the point of view of general morbidity, our study showed a male predominance with 59.5%, or a sex ratio of 1.47.

Children under 5 years of age accounted for 52.2% of consultations. The youngest patient in our series was one day old, while the oldest was 15 years old.

MAIGA B [3] , SY O. [5] , SISSOKO S. [4] and LY F [8] found similar results, with respectively:

- For gender; 55.2%, 57.2%, 64.4% and 53.6%;
- For age; 79.4%, 69.9%, 85.8% and 35.4%.

A study carried out in Tunis in 2003 by N. MATOUSSI and COLL [6] obtained results consistent with ours and with those cited above, namely a sex ratio of 1.2 in favour of boys and a representativeness of 2/3 of children under 5 years old.

The predominance of the male sex is explained by a greater susceptibility of the male sex compared to the female sex noted at the extreme ages of life in the face of morbid phenomena [7] .

Regarding age, the phenomenon could be explained by a greater vulnerability of this age group to diseases.

The vast majority of our patients came from the Diourbel region, more specifically from the city of Touba located in the Mbacké department. This could be explained by the fact that these consultations took place during the Grand Magal of Touba, a religious festival that draws crowds of around four million people.

The reasons for consultation were diverse and varied, and were dominated by fever, respiratory problems (cough, rhinorrhea, nasal obstruction, etc.) and digestive problems (diarrhea, abdominal pain and vomiting).

In our study, respiratory problems, including cough and rhinorrhea, were the main reasons for consultation.

Similar to what we found in the literature, pediatric consultations are dominated by digestive and respiratory conditions.

In Africa, Diouf et al [9] in Senegal in 1993 found 19% of respiratory disorders and 16.5% of digestive disorders and malnutrition in 15.5% of cases.

Ly et al [8] in Senegal in 2016 found 30.2% respiratory disorders, 28.7% digestive disorders and 20.1% fever.

Coulibaly et al [10] in Mali found convulsions to be the most common with 19.37%, anemia 18.85% and fever 15.18%.

Mabiala-Babela et al . [11] in Congo, the reasons for consultation were dominated by fever in 81.8% followed by digestive disorders for 44.2% and cough in 35.7%.

In France, the reasons for admission to emergency services are dominated in the spring by ENT infections for 40% followed by digestive, respiratory, cutaneous and osteoarticular disorders with each of 12 to 14% [12] and in the winter by ENT infections with 49% followed by respiratory disorders 25%.

From a diagnostic point of view, respiratory pathologies came first, followed by infectious and digestive pathologies.

Respiratory illnesses were dominated by bronchiolitis and asthma attacks. Children, often spending time outdoors due to heat and overcrowding, are more exposed to aeroallergens.

Digestive pathologies were dominated by gastroenteritis and parasitic infections.

According to other studies:

Malaria and respiratory infections were the most frequent pathologies with 30.2% and 18.2% respectively (rhinopharyngitis), 12.3% (Bronchitis) [14].

Acute upper respiratory infections were predominant in 30.18% of cases followed by gastroenteritis in 15.36% and malnutrition in 8.21% [15] .

MAIGA B [3] , acute respiratory infections were the first diagnosis retained with 35.5%, malaria 26.8%, diarrhea 8.7%.

Coulibaly et al [10] in Mali found that infectious diseases came first, with severe malaria accounting for 32.72%, severe dehydration due to diarrhea being the second cause at 11.26%, followed by meningitis in 9.42% of cases.

Atanda et al. [13] in Pointe Noire, Congo, in their 5-year study (1988-1992), found neurological emergencies to be the most frequent at 52%, followed by respiratory emergencies at 21.5%, then hematological emergencies at 12.70%, and gastroenteritis in 11.50% of cases. In the pediatric department of the Brazzaville University Hospital, gastroenteritis was the most frequent diagnosis at 24.7%, followed by bronchopulmonary infections at 18.9% and malaria at 17.3% [11] .

Symptomatically, paracetamol was the most prescribed drug (233 patients), followed by antiparasitics (88 patients) and salbutamol (44 patients), and etiologically there were mainly antibiotics with amoxicillin and amoxicillin clavulanic acid leading the way.

This could be explained by the fact that the reasons for consultation and the diagnoses retained were dominated by fever, digestive disorders and respiratory infections.

Conclusion

Community support activities contribute effectively to the fight against neonatal and infant morbidity and mortality, which is a public health priority, especially in sub-Saharan African countries.

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Conflict of interest : None

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