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Research Article

Everyday Accidents of Children Under 15 in Libreville and its Surroundings

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Abstract

Children are often victims of everyday life accidents (ACVC). Also, a study a descriptive cross-sectional study took place over a period of 5 months (from September 1, 2021 to January 31, 2022). It concerned households housing children under 15 years of age who had or had not been victims of an accident in everyday life, as well as their mothers or the head of the household. The aim of this study was to determine the epidemiological aspects of accidents of daily life of children under 15 years of age in Libreville and its surroundings. The prevalence was 52.4%. The average age of the children was 6.7 ± 3.3 years with a male predominance and a sex ratio of 2. The eldest children in the family were the most affected (31.5%). The ACVCs occurred more frequently during the holiday period (43.9%). Injuries caused by CVD were treated both at home (51.4%) and in hospital (48.6%). The mean age of the mothers was 41 ± 11.4 years. The mothers were married or cohabiting (35%) and had an average socioeconomic level (60%). Maternal age ($p < 0.001$), socio-economic level ($p < 0.001$) and the family type ($p < 0.001$) were the risk factors for the occurrence of CVD in our study.

Keywords: *AcVC; Children; Libreville*

Introduction

An accident of daily life (AcVC) can be defined as an unintentional trauma that is neither a work accident nor a traffic accident. It is divided according to the place and the activity. We thus distinguish accidents occurring at home and in its immediate surroundings (domestic accidents), those occurring in leisure and sports areas (sports and leisure accidents) and at school (school accidents) [1]. Accidents of daily life affect all social backgrounds and all age groups, but particularly children under 15 and people over 65 [2]. Despite the efforts implemented since the 1980s in developed countries, accidents of daily life remain, overall, the main causes of premature death [2,3]. It is estimated that more than 2000 children die each day as a result of unintentional or accidental injuries. Every year, millions of children are taken to hospitals with injuries that often leave them with permanent disabilities [4]. According to the permanent survey network on everyday accidents (EPAC), 53% of the 140,310 CVCAs recorded between 1999 and 2001 were observed in children aged 0 to

16, or nearly 74,000 CVCAs [1]. Today, it is estimated that children under 15 are victims of 1.5 to 2 million CVCAs each year with recourse to hospital emergency services. Nearly 43% of CVCAs, all ages combined, affect children under 15, with a predominance in those aged 1 to 4 and those aged 10 to 14; while pediatric traumatic pathology represents 14% of overall traumatic pathology [1,4,5]. Studies conducted in Africa on CVD have focused mainly on domestic accidents, probably because of their higher frequency. In sub-Saharan Africa, health policies are mainly focused on infectious and nutritional diseases, because of their direct impact on the population [6].

In Dakar in 2014, a study on everyday accidents in children under 15 years of age at the Aristidele Dantec University Hospital in Dakar (CHU A Le Dantec) showed that everyday accidents represented 27% of all consultations [7]. In Gabon, the lack of data on this subject led us to conduct this study, the main objective of which was to describe the epidemiological aspects of CVD in children under 15 years of age in Libreville and its surroundings.

Methodology

Our study took place in the six districts of the commune of Libreville and the two districts of the communes of Akanda and Owendo. This is a descriptive cross-sectional study that took place from September 1, 2021 to January 31, 2022. The study concerned households housing children under 15 years of age who had or had not been victims of an accident in everyday life, as well as their mothers or the head of the household. We included in our study households with one or more children aged 0 to 15 years, whose mothers or heads agreed to participate in the study. The parameters studied were the frequency of CVD, sex, age, siblings and socio-economic level. We carried out a random sampling in two-stage WHO-type clusters in the districts of the communes of Libreville, Owendo and Akanda.

Results

Of the 1086 households with at least one child under 15 years of age, 569 experienced at least one accident in daily life, representing a prevalence of 52.4% of households affected in 2017. The average of AcVC in the households of Libreville, Owendo and Akanda was respectively 1.3; 1.2 and 1.3 (Table 1). AcVC were more numerous among boys, with a sex ratio of 2. The mean age of the children was 6.7 ± 3.3 years. The most affected age group was between 6 and 10 years old with 42% (n = 309) cases, followed by older children aged 3 to 5 with 35.9% (n = 263) cases; then children aged 11 to 15 with 14% (n = 103) cases. The elderly were the most affected with 31.5% of cases (Table 2). The average age of the mothers was 41 ± 1.1 years. The mothers were married or cohabiting with 35% and 34% of cases respectively (Figure 1). The majority of families of children with CVD were of average socioeconomic level in 60% (n = 607) of cases. The majority of AVCs occurred during the school year with 42.9% (n = 315) of AVCs compared to 43.9% (n = 323) of AVCs occurring during the holiday period. There were 13.2% (n = 97) of AVCs that had not been identified, due to the forgetfulness of the person in charge of the household. Domestic accidents were common in 87.8% of cases. The injuries caused by CVD were treated both at home (51.4% (n = 378) of cases) and in hospital (48.6% (n = 357) of cases). Maternal age ($p < 0.001$), socio-economic level ($p < 0.001$) and the family type ($p < 0.001$) were the risk factors for the occurrence of CVD in our study.

Communes	**Libreville**						**Owendo**		**Akanda**	
Borough	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**1st**	**2nd**	**1st**	**2nd**
Number of AcVC	152	64	161	42	81	146	39	29	13	8
% of AcVC	23.6	9.9	24.9	6.5	12.5	22.6	57.4	42.6	61.9	38.1
Number of households affected by CVD	104	55	132	35	69	100	32	26	9	7
Prevalence of AcVC	1.5	1.2	1.2	1.2	1.2	1.5	1.2	1.1	1.4	1.1
Average AcVC per household	2	1	1	1.2	1.2	1.2	1.2	1.1	1.4	1.2

Table 1: *Description of municipalities and districts according to the number of households affected by HCV and the number of HCVs in the household.*

Rank	n	%
1	209	36.7
2	148	26
3	95	16.7
4	56	9.8
5	32	5.6
> 5	29	5.2

Table 2: *Frequency of AcVC according to the child's rank in the sibling group.*

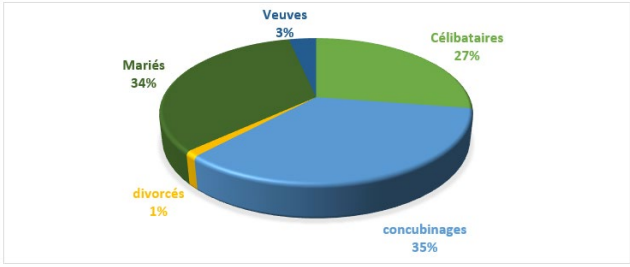

Figure 1: *Frequency of different types of AcVC.*

Discussion

Among the homes visited during our study, more than half had at least one AcVC, with a prevalence of 52.4% of AcVC during the year 2017, or a frequency of 1.3 AcVC per home. Our results are almost identical to those of the EPAC analysis in France, which gave between 1999 and 2001 a prevalence of 53% of AcVC on all consultations in emergency departments of certain hospitals [1]. This high figure would be the result of 3 years of study. Other studies show a lower prevalence than ours. This is the case of the study by Kieran., *et al*. in the United States in 2005 on AcVC in children and adolescents, which shows a prevalence of 35% [8]. Azhar S., *et al*. in Dakar shows a prevalence of 27% of AcVC in children under 15 years old. However, this prevalence can be considered underestimated, since it only concerns cases requiring hospital consultation. We noted a male predominance with twice as many boys as girls. This result is close to the data from the study by Azhar S., *et al*. in Dakar on CVD at Aristide le Dantec University Hospital in 2015; and by Reboli E., *et al*. on CVD in pediatric emergency departments in Le Havre in 2004, which showed a sex ratio of 2.8 and 1.4 respectively [7,8]. This male predominance could be explained by the more aggressive and oppositional behavior of boys with regard to parental prohibitions. However, we noted a higher proportion of boys in our study compared to that in the literature. This aspect can be explained by the fact that most of the lesions caused by CVD in girls are benign in nature; therefore not requiring hospital care. The mean age of the children in our study was 6.7 years. This result is not very different from the data in the literature. Bombaci H., *et al*. in Turkey in 2008 and Hurson C., *et al*. in 2007 in Ireland noted 8.3 years and 8.5 years respectively [9,10]. The oldest children were the most affected with 36.7% of CVDs, 63.3% of children who were victims of CVDs had a rank less than or equal to 3. This is not very different from the study by Azhard S., *et al*. which gave a predominance for the oldest children at 31.5% with 70.8% of children who were victims of CVDs having a rank less than or equal to 3 [7]. This observation can be explained by the fact that the oldest children are often neglected and abandoned in favor of the younger ones. CVDs took place more during the holiday period, i.e. 43.9% of CVDs. But there was a significant proportion of AcVC, i.e. (13.3%), not identified due to the parents forgetting. This trend may be due to the fact that the holidays are a time when parents relax on their children:

the study time for children is over and time for games. Furthermore, during the holiday period, the number of children increases in homes due to the arrival of other family members. Several studies have analyzed this aspect of CVDs in detail. Rebolie., *et al*. in France highlighted a predominance during working days [8]; and Wednesdays were the days with the highest risk of having an accident, unlike other days according to Azhard S., *et al*. [7]. Domestic accidents (DA) were the most numerous CVDs, with a prevalence of 87.8% of CVDs occurring during 2017, followed by the school environment with 7.9% and sports and leisure areas with 4.3%. These results are comparable to those of the French series by Rebolie [8] and EPAC [1]; and are justified by considering the home as the place where children spend the most time. On the other hand, sports and leisure accidents (ASL) occupied second place in several series in the literature [11,12]. The study by Victor L., *et al*. in Lyon, in 2015, on AcVC in children under 15 years old based on ORAT data shows that ASL are the most frequent [13]. This variation in frequency according to the type of AcVC is probably a function of the level of development of the country. Developed countries have fewer AD and more ASL because preventive measures are taken in homes [14]. The large number of leisure places, sports halls and the culture of sport as a health factor contribute to the increase in ASL.

Conclusion

Accidents in children under 15 years of age are common in Libreville and its surrounding areas. They are dominated by domestic accidents and mainly affect boys aged 6 to 10 years. %, maternal age, socioeconomic level and family type were the risk factors for the occurrence of CVD in our study.

Conflict of Interest

The authors declare no conflict of interest.

Author's Contribution

All authors participated in the conduct of the study and in writing the manuscript. All authors read and approved the final version of the manuscript.

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