

## Cerebral Vascular Accident, A Real Challenge of Public Health In Benin Natural Clay

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### Abstract

*The aim of our study was to evaluate the prevalence of stroke in terms of numbers of people affected psychologically, from the cases in our reference center, the National University Hospital, koutoukou Hubert Maga (CNHU, HKM ), Cotonou, Benin, to see if the stroke is a public health problem in the Beninese context or not. Therefore, our methodology has been first to conduct an investigation CNHU, HKM, in order to know the number of cases of stroke recorded year by year, and the number of deaths recorded in these cases, taken on 12 consecutive years, from 1998 to 2009. We then conducted a field study around fifteen people affected by stroke, taken in different occupational categories, to estimate the number of affected psychologically behind each stroke cases and categorized in Cotonou people. This survey, conducted on the basis of a questionnaire, was done on a representative sample of 300 persons, with an average of 20 people around each of the 15 selected victims. These 20 people were taken both in the family of the victim in his other preferred as relations requires the African context because of the legendary Solidarity and interactions due to reports of vital interests. The results show that, on the one hand, people psychologically affected behind each stroke cases are for sentimental reasons (strong family ties, solidarity, empathy) and or reasons of interest (moral interests, material financial or other). On the other hand, the number of people affected psychologically evolves into three classes (between 20 and 50, between 100et 200 and between 300 and more) as and when the interests represented by the victim are more important. The discussion of these results, we can say that strokes are rare in Benin. In fact, they are not a major cause of death among us. They therefore can not be considered a public health problem according to the criteria that attribute their character in industrialized countries. Only one stroke behind in Benin, more than 181.6 average people are psychologically affected. The socio-economic cost of all cumulative impacts of this situation is such that we are forced to recognize that stroke is a major public health challenge in Benin.*

**Keywords:** world; Reviews another word, except lower case names

*Stroke prevalence, incidence, psychologically affected, close relatives, direct victim, indirect victims.*

### 1. Introduction

In 1999, BOGOUSLAVKY noted that "stroke the third leading cause of death after cardiovascular disease and cancer in industrialized countries "[1] A decade later, an epidemiological survey conducted in Morocco from December 2008 to April 2009 by the Hassan II Academy of Science and Technology on a representative sample of the Moroccan population, both in urban and rural areas, affecting 13,000 households and 60,000 people says: "The Cerebral Vascular Accident (CVA) is the leading cause of motor disability, the second leading cause of dementia and the third leading cause of death among adults and this not only in industrialized countries but also in countries emerging and developing countries "[2] For this

reason, and because stroke is a brain attack, all functions of the brain, as well as that of the memory that mental health can be affected. Therefore, it is not surprising that stroke produce serious psychological impacts on their victims. While several studies have examined the psychological impact of stroke on the same accident (direct victims), the psychological impact on non-direct victims were rarely considered. The only time the literature we arranged mention, it was almost exclusively about joint direct victims [3-6]. While speaking relatives of the direct victim, these studies do not provide a deeper psychological impact that this accident happen on other members of the close relatives of the injured, namely its direct ascendants, his direct descendants, his collateral all generations, his family and those who are particularly

close to her relatives in families, allies and friends friends. It seems rather that the suffering of those not recognized. In any case that found in the Canadian context Myriam Tellier, educational advisor in the School of Rehabilitation, University of Montreal. Speaking of suffering relatives of the direct victim of a stroke, she notes that "This is not a recognized problem. The relatives of these patients are left-nots "[7]. In the same article, the author, Marie Lambert-Chan shows that this theme support the families of stroke victims can not be documented from the literature. It notes and wrote that "no researcher has examined this issue." [7] In the same vein, she notes that " Supervised by Professor Annie Rochette, Ms. Tellier is the first to have conducted an exploratory study on the perceptions of relatives of people who had a AVCL (mild stroke) their current quality of life. "[7]

As well as the available literature is very cautious about the psychological impact of stroke on the close relationship of direct victims, as we see it seems to keep the same discretion about the impact on careers. Indeed, almost all research on the subject has mainly reported the experience of industrialized countries. However, given their socio-cultural context where the family is reduced to a minimum (nuclear family), the study of the psychological impact of stroke on the other relatives outside the spouse of the victim, and sometimes their children seems to be useful to them. Similarly, the negative impact of stroke on carers is reduced in these countries since the staff warned during training is harder to situations that could affect psychologically. Thus, such a study has not often been considered in these countries. However, in the context of African countries in developing and Benin in particular, the study of the psychological impact of stroke, as well as throughout the close relationship of direct victims of close friends and caregivers is essential for any research aims relevant. Indeed, the African socio-cultural context is such that the misfortune of one is often perceived and experienced as the misfortune of all the relatives because of the strength of family ties and the legendary solidarity. In this respect, the purpose of our study was to assess the prevalence of stroke in terms of numbers of people affected psychologically, from the cases in our reference center, the National University Hospital, koutoukou Hubert Maga ( CNHU, HKM), Cotonou, Benin, to see if the stroke is a public health problem in the Beninese context or not.

## 2. Methodologies

We conducted a survey CNHU, HKM, in order to know the number of cases of stroke recorded year by year, and the number of deaths recorded in these cases. The statistics in this area are non-existent until 1997. Our surveys, done over a period of 12 years, then extend from 1998 to 2009. The results obtained are shown in Table No. 1 on the chart and No. 1

We then conducted a field study around fifteen people affected by stroke, taken in different occupational categories, to estimate the number of affected psychologically behind each stroke cases and categorized in Cotonou people. This survey, conducted on the basis of a questionnaire, was done on a representative sample of 300 persons, with an average of 20 people around each of the 15 selected victims. These 20 people were taken both in the family of the victim in his other close relationships. The results of this are shown in Table No. 2.

## 3. Results

### 3.1 Analysis of the given

Evolution of cases of stroke hospitalization CNHU HKM from 1998 to 2009, followed by the data provided by the survey which Table 1 gives us the result. This table shows the change year by year the number of registered cases of stroke, as well as the evaluation of deaths among these cases, the CNHU, HKM, between 1998 and 2009. It shows that the statistics on deaths from stroke suites CNHU in 2002 are not available. Furthermore, our study periods, the number of cases is lower in 2000 and amounted to 117 while the maximum is recorded is 200 in the year 2007. The average case registered for twelve years is to 158.61. Regarding the deaths, the table shows that the lowest number is 13 and is in 2004 while the highest is 42 and for the year 1998. Thus, the average number of deaths in our study period is 24.5.

All these data are illustrated with graphs of fig 1. (See subtitle tables and figures) These curves represent the schematic evolution year by year the number of registered cases of stroke (blue curve) and the evaluation of these cases occurred among deaths (red curve), the CNHU, HKM, between 1998 and 2009. The break of the red curve in the year 2002 is due to the fact that death data in 2002 are not available. Following the study on the prevalence of stroke in our study period, the estimated number of affected psychologically behind each stroke cases in Cotonou by 15 people socio-professional categories was performed. The various data are listed in Table 2. The analysis shows that this table is organized in ascending order of the number of affected psychologically behind 15 cases of stroke identified people. It shows that the number of affected people psychologically evolves into three categories:

- Between 20 and 50

The number of people psychologically affected between 20 and 50, whenever the direct victim of stroke has limited livelihood. In socio-economic terms, one could not expect her financial aid others in society. In this first category of victim, we find the messengers, the revendeuses, poor farmers, poor widows without children and office workers. Psychologically affected people

behind the stroke cases that affect the people of the first category would be affected because of the strong family ties, solidarity and empathy.

-Between 100 and 200

The number of people psychologically affected varies between 100 and 200, whenever the direct victim of stroke is pledged livelihoods that allow him not only to satisfy all their needs, but also to help others people in society. In this second category of victim, we found teachers, community leaders, dignitaries of Islam, journalists, board renowned lawyers, actors and shopping with responsibilities to the market. In socio-economic terms, we can count on the support of people in this category. Indeed, many people in society have to close them, not only moral interests, but also of real material and financial interests. Thus increasing the number of people affected psychologically every time a member of the latter category is struck stroke, would be justified, both by the sentimental reasons (strong family ties, solidarity and empathy) that by reasons relating to material interests, moral, financial etc..

-Between 300 and more

The number of people psychologically affected between 300 and whenever the direct victim of stroke is a person with greater financial resources or moral and that which has the members of the second category. Thus, members of this third category seem to have strategic positions in the socio-economic level. We find among them the influential leaders of the Catholic parishes, dignitaries endogenous African religions, corporate CEOs. Their positions provide more moral and material and financial resources or a greater number of people in society.

**Table 1:** Prevalence of the AVC of 1998 to 2009: Evolution of the cases of AVC in hospitalization with CNHU HKM

Na= non available di= data incomplètes

years	a number of cases	a number of death	Rate of death
1998	146	42	28.77
1999	144	25	17.36
2000	117	25	21.37
2001	187	31	16.58
2002	127	Na	Na
2003	169	27	15.98
2004	199	13	6.53
2005	176	18	10.23
2006	198	34	17.17
2007	200	37	18.5
2008	174	30	17.24
2009	171	25	14.62
2010	54	11di	20.37

Thus increasing the number of people affected psychologically every time a member of this third

category is hit stroke is justified by an accumulation of denser reasons already mentioned about the second category of sentimental reasons and the reasons affecting the interests more or less immediate to material, financial and moral or so.

**Table2:** Estimate of the number of people psychologically affected behind each case of AVC to Cotonou according to 15 socio-professional categories.

No.	social identity of the victim	Estimate of the number of psychologically affected people
1	A orderly	20
2	A retailer	20
3	A poor farmer	20
4	A poor widow without children	20
5		50
6	A teacher	100
7	a head of community	100
8	A dignitary of Islam	100
9	A journalist	150
10	A counsel of reputation	200
11	An actor	200
12	Commercial having responsibilities at the market	200
13	A person in charge influential on a catholic parish	300
14	A high-ranking dignitary of the African endogenous religions	300
15	a chairman of company	400

**4. Discussion**

Our discussion is organized around two interests: the prevalence and incidence of stroke on the one hand, and the characterization of psychologically affected other.

-Prevalence and incidence of stroke

In Europe, the incidence of stroke ranges from 63 to 239.3 per 100,000 [8]. In Canada, it is estimated at 14.4 per 100,000 [9] people. According to the 2009 report of the French Ministry of Health on Prevention and Management of stroke in France, this disease affects 130,000 new people each year and its prevalence is 400,000 cases. In Morocco, the incidence is on average about 300,000 to 100,000. [10] But in the vast majority of African countries such as Benin, where there was no real epidemiological surveys, it is difficult to estimate the true incidence of this disease. Knowledge of epidemiological data validated in the United States, Europe and France had as first interest to show that stroke is the leading cause of acquired disability in adults with its high socio-economic costs, the second leading cause of dementia after Alzheimer's disease and the third leading cause of death after cardiovascular disease and cancer. Knowledge

of epidemiological data validated in the United States, Europe and France had as first interest to show that stroke is the leading cause of acquired disability in adults with its high socio-economic costs, the second leading cause of dementia after Alzheimer's disease and the third leading cause of death after cardiovascular disease and cancer. These are provided by the Epidemiology elements that have to recognize stroke as a major public health problem in industrialized countries [11]. Moreover, epidemiology also showed that the risk of occurrence of this disease increases with age. It is "10 times more common at age 65 until age 45" [12] Thus, the state of the aging population in industrialized countries is an aggravating situation in the increased incidence of this disease. These findings regarding the industrialized countries are confirmed by the results of the epidemiological survey conducted in Morocco between December 2008 and April 2009, the first survey in Africa. In any case, what notes and notes Ouardirhi Abdelaziz: "Given the frequency of vascular risk factors and the aging of the population in Morocco, these strokes currently represent a real health problem " [13]. But it does not seem quite right we, from the observations made in Morocco, to generalize the observations to all emerging and developing countries, without any nuance, as was done by the Moroccan study [2] . Moreover, if the aging population, a figure that justifies and explains the increase in the incidence of stroke is a fact as in Morocco than in industrialized countries, it is not in Benin for example. On the contrary, the Beninese population is very young, like that of almost all developing countries. In Benin, the projection of the population in July 2012 from the figures of the general census of population taken in 2006 shows that: 44.7% of the population aged between 0 and 14, the age of 52, 6% of the population is between 15 and 65, people over 65 years making only 2.7%. (Source: CIA World Factbook - Version of March 19, 2012). Thus, in developing countries, stroke is a leading cause of death. Pneumonia are rather the biggest cause of death in these countries, to heart disease, diarrhea and HIV / AIDS [11] In Benin, for example, with regard to stroke, it has reached the maximum death our study period in the first year, that is to say in 1998, with 42 out of a total of 146 cases recorded CNHU, HKM. Note that in the same hospital, the number of cases recorded in 2007 rising to 200 and represents the maximum annual for twelve years, with 34 cases of deaths as shown in Table No. 1.

Considering that the maximum of deaths recorded annually as a result of stroke in CNHU is 42 for this period, the finding is that strokes are not really a major cause of death in Benin.

Since the Beninese people of limited means, and the CNHU is the most equipped center and where care is the lowest bidder, it is clear that statistics CNHU are not only higher, but also they are the most representative because of the capacity of the center (700 beds), as well as

equipment. However, from the statistics CNHU, we can not say that strokes are a public health problem in Benin, the way they are in industrialized countries and Morocco.

From the foregoing, it appears that stroke cases reported by health facilities are rare in Benin. Never statistics CNHU HKM have posted more than 200 cases reported per year. Only one stroke behind in Benin, there are so many people who are psychologically affected, because of the strong family and social ties that creates great solidarity,

#### -Characterization of affected people

The direct victim of stroke is sick, not only physically but also psychologically. However, it is not the only person affected psychologically. His entourage is similarly. We propose here to examine and characterize the affected people.

From the survey results shown in Table No. 2, it is likely that the number of people affected psychologically behind a stroke in Benin is mainly determined by the power of the socio-economic influence of the victim (the substantial part of society that can benefit financially or morally right or not its position.) Thus, there are more people psychologically affected when the direct victim seems to have a great socio-economic influence, that is to say if it belongs to the third category. Similarly, the number of people affected and decreases as weakening the socio-economic influence of the direct victim. So it is not only the effect of compassion that people are affected, if not, there would be more logically affected behind the stroke cases involving poor people without means. But instead, a more direct victim of stroke has a socio-economic position that benefits others, the greater the number of people affected psychologically by the event is becoming bigger. Everyone is affected not only by empathy, but also according to interest more or less immediate risk of losing it or not have if the direct victim did not recover quickly and did not recover his faculties. But whatever the reason for people to be affected, the most important in this study was found to have a stroke cases in Cotonou psychologically affects more people than had been thought. The reason for this state of affairs is not only emotional, but also and primarily related to material interests, financial and moral or that might have in relation to each other. Psychological pathologies generated by the stroke in people affected can have devastating consequences for many years with its socio-economic cost. Indeed, the full result of the industrialized countries, outside of the direct victim, there is generally that (a) spouse (s) that is psychologically affected (e). [3-5]

The results of our investigations show that cases of stroke in Benin affects people psychologically averaged 181.6. Under these conditions, the 200 cases recorded in 2007 CNHU HKM could therefore affect about 36,320 people. Now, if we could take into account the statistics

of other health centers, as minimal as these statistics are, and that there is also the added number of people who do not go to be treated, we get an overflow some 200 cases recorded CNHU HKM for the year 2007. However, the rate of dating health services was 45.4% in the same year in Benin. Thus, the rate of non-attendance of health services in Benin would be 54.6. Considering the under-utilization of health services in Benin, we understand that, proportionally, instead of 200 cases for 2007, we would have rather 440.528 the cases. By the same logic, the number of affected people psychologically and would increase in proportion to 79,999.884. Considering the figure of 440.528 as vraisemblable prevalence of stroke in Benin in 2007, for an estimated population of 7,958,813, the calculations indicate that a sample of 100,000 people in Benin, we have an annual average of 5535 people psychologically affected by the stroke. Thus, considering each time a sample of 100,000 people, the number of affected in Benin (direct and indirect victim victims) people frankly exceeds the number of affected people in industrialized countries where statistics show a change between 100 and 200 cases of stroke of 100,000. But behind a stroke cases in these countries, there are generally two psychologically affected, the direct victim and his (her) spouse (e) . And in industrialized countries, and in extreme cases countries there an annual average of 400 psychologically affected by the stroke of a population 100,000 people people, against an average of 5535 people in Benin. However, stroke considered major public health problem in high-income countries are not in Benin. If in addition to this we consider the illiteracy rate is 67.4%, the precarious conditions in which live more than 80% of Benin, the lack of preventive measures and the lack of support psychological as well as for the direct victim as indirect victims of stroke cases, it is easy to admit that stroke is a serious public health problem in Benin.

Therefore, and integrating all the considerations made, logic would require that the parameters which give the disease the character of a public health problem are not the same in industrialized countries than in developing countries such as Benin, where on the one hand, family ties and solidarity, and secondly, moral and socio-economic interests of vital towards each other always expand the number of affected behind the misfortune strikes a person.

If an average of 5535 people is allocated on a population of 100,000, the impact on the national economy will be extended. In addition, psychological pathologies generated in all categories of victims of

stroke, in some cases lead to real physiological conditions, aggravating the already precarious situation by multiplying the number of people affected. And taking into account the harmful consequences of all possible levels of employment could be safely said that when a person is struck stroke in Benin, it is much more than 181,66 people who are psychologically affected.

### Conclusion

With all these observations, and given the very devastating consequences of stroke in Benin, we conclude that stroke is a challenge to public health in this country. Thus, the sooner we will support the injured and the first people most affected psychologically by the occurrence of the accident, the less damage will be devastating.

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