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Knowledge, Attitude and Practice of General Practitioners in Bujumbura Regarding Stroke

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Abstract: The objective of this study was to evaluate the knowledge, attitudes, and practices of general practitioners in Bujumbura City regarding stroke. This was a cross-sectional and descriptive study that was conducted over a period of 4 months. Data were collected using a questionnaire, then entered and analyzed on the computer using Epi-info software version 7.2.2.6. The median age of the general practitioners surveyed was 34.73 years, with a male predominance of 77.62%. Their average knowledge of stroke was 38.40%. None of the general practitioners had ever had continuing education on stroke, and 97.90% proposed only the brain scan as a diagnostic examination. Only 7.69% complied with blood pressure targets when prescribing antihypertensive drugs for ischemic stroke. Deglutination disorders were considered by only 15.38% of general practitioners to authorize oral feeding. The National Institutes of Health Stroke Scale (NIHSS) score was used by 52.45% of the general practitioners although 97.20% felt that stroke was an absolute emergency. Thus, 94.41% showed difficulties in managing stroke patients, so that 66.00% considered that stroke management in Burundi is poor. In conclusion, the knowledge and practices of general practitioners in Bujumbura regarding stroke were not satisfactory, although their attitude was positive.

Keywords: Knowledge, attitude, practice, stroke, general practitioner

1. INTRODUCTION

Stroke is a major public health problem worldwide. With 15 million stroke victims reported each year and 5.9 million deaths, it is the third leading cause of death after coronary heart disease and cancer, the leading cause of non-traumatic motor disability in adults, and the second leading cause of dementia after Alzheimer's disease[1-3].

In Africa, as in other developing countries, the incidence of stroke is increasing[4]. In contrast to developed countries, there is no pre-hospital management of patients with acute stroke and thrombolysis is not available, which justifies a high short-term mortality[5].

In Burundi, we do not have a national stroke registry, but some partial studies already show that stroke is a reality. Although the country, especially

the economic capital Bujumbura, is beginning to have qualified personnel and equipment contributing to its management, it does not have any neurovascular unit, which means that most strokes are managed by general practitioners[6, 7].

Even if these general practitioners are often on the front line of stroke management, there is reason to wonder whether their knowledge of the various aspects of this disease is sufficient to generate the practices and attitudes needed for better patient care.

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Thus, in this situation where general practitioners are often at the front line, this study was conducted to assess their knowledge, attitudes, and practices regarding stroke.

2. METHODS

This is a cross-sectional and descriptive face-to-face study that was carried out for 4 months from April 1 to July 30, 2021 among all general practitioners working in the hospitals of Bujumbura, the economic capital of Burundi. It excluded all general practitioners in their private practice or undergoing specialization studies.

This study was authorized by the ethics committee of the Faculty of Medicine of Bujumbura and the authorization to survey was obtained from the Provincial Health Office in Bujumbura City. All participants were informed in advance of the objectives of the study and participation was voluntary. Data collection for each participant was done by verbal informed consent.

Data were collected using a pre-designed questionnaire that, in addition to a section on sociodemographic data, included 26 multiple-choice questions on the knowledge, practices, and attitudes of general practitioners regarding stroke. These questions concerned the definition, epidemiology, risk factors, clinical aspects, complementary examinations, evaluation scores, management, and their assessment of stroke. This questionnaire was pre-tested on 10 general practitioners not included in the study.

To assess their knowledge, practices, and attitudes, questions with a single correct answer were scored out of 2 points. For questions with multiple correct answers, each correct answer was also scored out of 2 points, but 1 point was deducted for each wrong answer without giving a negative note.

After collection, the data were entered and analyzed on the computer using Epi-info software version 7.2.2.6.

3. RESULTS

During the period of our study, 170 general practitioners were contacted but only 143 agreed to answer our questionnaire, this represents a participation rate of 84.12%.

They had a mean age of 34.73 years with extremes ranging from 27 to 53 years. The most represented age group was 25 - 35 years with 64.34%. The majority were male (77.62%), with a sex ratio of 3.46 in favor of men. 76.92% of General practitioners worked in the public sector, 59.44% had less than 5 years of practice.

Table 1: Socio-demographic characteristics of general practitioners in Bujumbura

Sex		
Male	111	77,62%
Female	32	22,38%
Age range		
25 - 35 years	92	64,34%
36 -45 years	39	27,27%
>45 years	12	8,39%
Period of practice		
<5 years	85	59,44%
5 -10 years	41	28,67%
>10 years	17	11,89%
Sector of practice		
Public	110	76,92%
Private	33	23,08%
Commune of practice		
Ntahangwa	59	41,26%
Muha	43	30,07%
Mukaza	41	30,07%

The average knowledge of stroke among the general practitioners surveyed was estimated at 38.40%. Thus, regarding epidemiology, only 18.18% of the general practitioners surveyed knew that stroke is the third most common cause of death in the world, only 16.78% said that it is the second most common cause of dementia after Alzheimer's disease, and 38.46% said that it is the first etiology of acquired disability in adults.

However, 65.97% knew the warning signs of stroke, although only 43.36% of the physicians surveyed could give the correct definition of transient ischemic attack and 46.62% could characterize ischemic and hemorrhagic stroke. Risk factors for ischemic stroke were known by 66.90% and those for hemorrhagic stroke by 49.18% of physicians.

For stroke management, 59.44% of the respondents were aware of the existence of a curative treatment for ischemic stroke although only 14.69% knew that this treatment is thrombolysis of which 23.08% could say that 4 hours 30 minutes is the maximum time for its application from the first signs of ischemic stroke.

39.16% of respondents knew the indication for anti-platelet therapy in non-cardio-embolic stroke.

In their practice, none of the general practitioners surveyed had ever had continuing education on stroke after general medical school. Thus, 97.90% of these physicians only proposed a brain scan as a diagnostic examination in the acute phase of stroke. For the etiological assessment of ischemic stroke, physicians who prescribed lipid tests were evaluated at 55.24%, Doppler ultrasound of the neck vessels at 50.35%, ECG at 29.37%, but no physician proposed cardiac ultrasound. The NIHSS score was used by 52.45% of physicians.

Regarding the use of antihypertensive drugs, only 7.69% of general practitioners respected blood pressure targets in the case of ischemic stroke and 51.75% in the case of hemorrhagic stroke. If the ischemic stroke was of cardio-embolic origin, 39.86% of physicians initiated anticoagulant therapy as a preventive treatment and only 14.69% initiated preventive heparin in case of hemorrhagic stroke based on 48-hour follow-up imaging showing stabilization of the hematoma. Deglutination disorders were considered by only 15.38% of physicians before allowing oral feeding.

In their attitude, 97.20% of the general practitioners surveyed felt that a stroke was an absolute emergency, and when faced with a patient with these signs, 76.92% considered that the patient should be hospitalized, whereas 11.19% referred him to a neurologist first.

Most of these physicians (94.41%) also had difficulties in the theoretical and practical understanding of the management of stroke patients, with 78.32% reporting that this was due to the lack of a national protocol and 96.50% to the lack of neurovascular units. As a result, 66.00% of the physicians surveyed considered stroke management in Burundi to be deficient.

4. DISCUSSION

This cross-sectional, descriptive study presents data on the knowledge, attitudes, and practices of general practitioners regarding stroke. They practiced in Bujumbura, the economic capital of Burundi, a developing African country.

They were young physicians with a median age of 34.73 years and less than 5 years of experience (59.44%), with a predominance of male sex (77.62%).

This youthfulness of general practitioners is also observed in other African and Asian countries where Ouedraogo AR. et al in their studies carried out in different capitals of sub-Saharan Africa found a median age of 30 years[8]. Kusuma PJ. et al in their survey in Indonesia found a median age of 36.8% years[9]. However, this situation is not the same in the Maghreb where, Ihbibane F. et al in Morocco found in their study that general practitioners had an average age of 49 years[10]. In France, a survey conducted in the department of Maine-et-Loire found their average age to be 50.7 years [11].

The male sex predominance found among general practitioners practicing in Bujumbura has also been demonstrated in sub-Saharan Africa where the study by Ouedraogo AR. et al found 66% male physicians[8] and almost as many (68%) found in a French study by De Col P. et al[11]. On the other hand, the gender distribution was equal in the study by Ihbibane F et al in Morocco[10], and even a net female predominance of 82.8% found in Indonesia in the study by Kusuma P J et al[9].

Stroke is a growing public health problem, particularly in developing countries where resources allocated to this disease are limited. However, the delay of treatment as well as the management in the first moments of this disease greatly influence the prognosis of the patients. This implies that the knowledge of physicians must be sufficient.

Many studies around the world have shown that the level of knowledge about stroke is low among patients and the community[12]. However, this study also shows that this low level of knowledge on the different aspects of stroke exists for general practitioners working in Bujumbura, where the average was evaluated at 38.40%. Consequently, this low level of knowledge also impacts their daily practice in the management of this pathology, although their attitude remains positive. Thus, these results raise concerns about the management of stroke patients by these general practitioners who are often the first and last resort in a country without neurovascular units.

In France, in a 2016 study of general practitioners in the Var Est region, which has no neurovascular unit or neurology service, 49% declared that they were familiar with the main principles of acute stroke management [13], whereas another study conducted in Picardy in 2018 showed that general practitioners' knowledge of the principles of acute stroke treatment averaged 5.9 ± 1.7 on a scale ranging from 1 to 10[14].

This low level of knowledge observed among general practitioners in Bujumbura can be explained by the absence of continuing education, which was unanimously cited by all respondents, as well as the absence of national protocols for stroke management. The objective of training is always to improve the practices of all professionals involved in the management of any pathology.

The epidemiological profile of stroke is still not well described in many developing countries because of the absence of population-based registries. These registers, provided they meet rigorous methodological criteria, are unanimously recognized as a reliable source of information for understanding the essential aspects of stroke epidemiology such as frequency and severity[15].

Burundi is certainly one of these countries, but while waiting for national data, physicians should at least refer to international data. Considering the average of 24.47% of physicians able to know the importance of the morbidity and mortality of stroke, this does not go without consequence on the importance they give to prevention during stroke management. However, prevention should be of primary importance in a country where thrombolysis has not yet been introduced.

In stroke case, the time limit for thrombolysis is currently set at 4 h 30 min[16]. In this study, only 14.69% of physicians are aware of the existence of this technique, of which 23.08% known this period of 4 hours 30 minutes. On the other hand, in France, already in 2018, 72% of the physicians surveyed in Picardy declared to know the treatment by thrombolysis despite the fact that also 23% answered that the maximum time of administration of the product for thrombolysis was 4 hours 30 minutes[14]. However, this figure has increased significantly as they were evaluated at 4.1% to know the delay of thrombolysis in a study conducted in Var Est in 2016[13].

Risk factors for ischemic stroke were known by 66.90% of the general practitioners surveyed, whereas those for hemorrhagic stroke were cited by 49.18%, although 65.97% knew the warning signs of stroke. These results show that the knowledge of risk factors is not satisfactory. However, it has been shown that knowledge of risk factors and warning signs of stroke is fundamental for better management, predicting a good prognosis[17].Systematic use of the NIHSS score not only allows assessment of the severity of the neurological deficit and indication of thrombolysis but also clinical monitoring to better assess evolution18. The NIHSS score was used by 52.45% of general practitioners in Bujumbura. In 2018, a study conducted in Picardy, France, showed that only 35% of general practitioners surveyed used the NIHSS score to assess the neurological status of patients with acute stroke, whereas 21% of them said they were not familiar with this score[15].

5. CONCLUSIONS

The level of knowledge of general practitioners working in Bujumbura city about stroke is low, which leads to insufficient practice in stroke management despite their positive attitude. However, due to the lack of neurologists, they are in the forefront of stroke management. Strengthening their capacity through continuing education is urgently needed.

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Conflicts of Interest: The authors declare that they have no conflict of interests regarding this study

Ethical Statement: This study was authorized by the ethics committee of the Faculty of Medicine of Bujumbura and the authorization to survey was obtained from the Provincial Health Office in Bujumbura City. All participants were informed in advance of the objectives of the study and participation was voluntary. Data collection for each participant was done by verbal informed consent.

Author Contribution: All different authors have contributed to the production of this manuscript. Thus, Nduwayo D, the corresponding author, supervised all the steps of this study. Uwigenga C and HAvuginoti S worked on the data collection. Barasukana P and Nzisabira L worked on the architecture of the manuscript while Sibomana T revised the final version.

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