

Risk Factors for Diabetes in People with Diabetes in Kara Teaching Hospital

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To cite this article:

Djalogue Lihanimpo, Mossi Komi Edem, Nemi Komi Dzidzonu, Tchamdja Toyi, Djagadou Kodjo Agbeko, Balaka Abago, Djibril Mohaman Awalou. Risk factors for diabetes in people with diabetes in Kara Teaching Hospital. *American Journal of Internal Medicine*.

Vol. 11, No. 4, 2023, pp. 64-66. doi: 10.11648/j.ajim.20231104.11

Received: August 12, 2023; **Accepted:** September 6, 2023; **Published:** October 8, 2023

Abstract: With a view to preventing and improving diabetes management in Kozah Prefecture, we conducted this study to determine the risk factors for diabetes in people with diabetes and to assess their sociodemographic profile. Our cross-sectional prospective study took place from November 04, 2021 to January 28, 2022. It involved patients of both known sexes with diabetes who consented to participate in the study. We developed collection sheets that collected socio-demographic and clinical data from patients. The study involved 51 patients whose average age was 37.90 years with a sex ratio of 1.35. The majority of subjects (41.2%) were married and worked in the informal sector. Being overweight was the predominant risk factor (62.7%), followed by physical inactivity (57%), followed by family history of diabetes (54.9%), and high blood pressure. Older age (15.7%) was the least prevalent risk factor. More than half of patients were exposed to a combination of two more risk factors (54.9%). Subjects exposed to three risk factors represented (11.8%) of the study population. All patients had at least one factor recognized as a risk factor for diabetes. Given the results of our study we can say that the risk of developing the disease is greater when there is a combination of several factors.

Keywords: Diabetes, Risk Factors, Hospital Setting, Kara

1. Introduction

Diabetes is a chronic disease and one of the public health issues. It is one of the fastest evolving global health emergencies of the 21st century. In 2021, an estimated 537 million people are living with diabetes worldwide and this number is expected to rise to 643 million in 2030 and 783 million in 2045 [1].

Africa is not immune to the rapid rise of diabetes, as more than 24 million people were living with diabetes in 2021 [2]. The number of diabetics in sub-Saharan Africa is projected to increase by 48% by 2030 and 143% by 2045, respectively the highest increase of any region of the International Diabetes Federation (IDF) [2].

The occurrence of this condition is attributable to many

factors including, age, sex, family history of diabetes, overweight, high blood pressure, physical inactivity, hyperglycemia, high cholesterol, high waist circumference, unbalanced diet [3].

Kara region is not immune to this condition, it had the highest prevalence (4.9%) in 2010 [4]. This is why it was important for us to determine the most recurrent risk factors and assess the socio-demographic profile among people living with diabetes in Kozah prefecture, more specifically at CHU and CHR Kara, which are the two largest hospitals.

2. Method

This was a cross-sectional study with descriptive purposes that took place at the University and Regional Hospital of

Kara in the prefecture of Kozah from November 04, 2021 to January 28, 2022. Our study focused on diabetic patients received in consultation or hospitalization. This study included people who were recognized as diabetic and able to answer the survey questions independently. The study was conducted on a direct interview with patients. We proceeded by random sampling. The interview was done with patients present at the time of the study period who consented to be part of the study.

3. Results

A total of 51 patients participated in the survey. The average age of our patients was 37.90 years with a sex ratio of 1.35. Subjects aged 30 to 35 years were more represented in 45.1%. Among our respondents (41.2%) were married. The study population that had a secondary level accounted for (54.9%).

A total of 84.3% of the patients surveyed were less than 45 years old and the family history of diabetes was present in 54.9%. Of those surveyed, 62.7% were overweight or obese and patients without physical activity accounted for 57% of cases. Finally, fifty-nine percent (59%) of the study population had normal blood pressure. Of the 51 patients surveyed, 33,3% had only one risk factor versus 54,9% who had two risk factors. There is patient who could have several risk factors at the same time (Table 1). Patients with only one risk factor included overweight (22 cases; 43.1%), family history of diabetes (14 cases; 27.4%), physical inactivity (6 case; 11.8%), advanced age (14 cases; 11.8%), and high blood pressure (3 cases; 5.9%). Among the 54,9% of patients with two risk factors, overweight and physical inactivity (24 cases; 47.1%) were the most represented, followed by high blood pressure and family history (12 cases; 23.5%), advanced age and hypertension (9 cases; 17.6%), and advanced age and overweight (6 cases; 11.8%). Finally, among the 11,8% of patients with 3 risk factors at once, these were the association of overweight, advanced age and family history, (3 cases; 50%), high blood pressure, advanced age and family history of diabetes (2 cases; 33.3%), and high blood pressure, overweight and physical inactivity (one case; 16.7%).

Table 1. Distribution of respondents by number of risk factors.

Number of risk factors	Effectif	%
1	17	33,3
2	28	54,9
3	06	11,8
Total	51	100

4. Discussion

Our study involved 51 people ranging in age from 19 to 66 years. Its main limitation lies in the lack of documentation of dyslipidemia due to lack of data.

All international studies have shown that the frequency of diabetes increases with age [4]. Our study shows an average

age of 37.90 years. This result is close to that of KOUDOU *et al* in Ivory Coast [5] who found an average age of 38.43 years. Most authors reported a higher average age (around 50 years) than ours [6-10]. These results show that diabetes morbidity in Africa is higher in subjects aged 30 to 59 years. The female predominance (57%) found in our study, it is a phenomenon shared by some authors [8-11]. However, the STEPS Togo 2010 survey indicates that man predominate among the Togolese population [12], also reported by Mossi *et al* [13].

In our study obesity or overweight were present in 62.7% of cases, this result is higher than that of Diop *et al* [4] and Sow *et al* [9], who reported respectively 48% and 52.81%. Mbaye *et al* [11] reported a rate of 23% of obese. Its rate is low because it did not include overweight patients. The result of our study may be due to the fact that it was conducted in an urban space where populations are in a phase of nutritional transition. People eat too sweet, too fat and too salty and are not physically active; attitudes that lead to overweight and obesity.

The presence of a family history of diabetes was found in 54.9%, a result close to that of Sow *et al* [9] who found 51.7% family history, while Dali-Sahi *et al* [14] found that 30% of patients had at least one diabetic parent.

High blood pressure is the main cardiovascular risk factor for diabetes. It was present in 41% of cases in our study. Sow *et al* [9] and Mbaye *et al* [11] reported similar rates of 38.5% and 46%, respectively.

More than 57% of patients did not practice physical activity, Mbaye *et al* [11] reported 64%. The majority of patients had at least 02 risk factors. The presence of a risk factor was found in 33.3% of cases, 02 factors in 54.9% and 03 factors in 11.8% of patients. Mbaye *et al* [11], and Sow *et al* [9] reported a predominance of 03 factors (62.8%) and 02 factors (33%), respectively.

Regarding the association of risk factors, in the combination of 02 factors overweight and physical inactivity were associated in 41.7% followed by hypertension and family history of diabetes in 23.5% of cases. And taking into account the association of 03 risk factors, the association age-family antecedent-overweight was majority in 50%, followed by the association HTA-age-family antecedent in 33.3%.

5. Conclusion

The occurrence of diabetes is often linked to the presence of risk factors (advanced age, overweight or obesity, physical inactivity, family history of diabetes, dyslipidemia, hypertension, tobacco...). But note that diabetes occurs more and more in young subjects. This is the case in our study, which revealed a predominance of young adults under the age of 45. It is therefore important to raise awareness among this age group for systematic and early detection for optimal care. Overweight or obesity was the most represented risk factor and the combination of risk factors was present in more than half of the population in our study. However, it is possible to effectively control these risk factors by changing lifestyle habits.

References

- [1] Fédération Internationale du Diabète. Atlas du diabète de la FID.10^e édition. Bruxelles, Belgique: Fédération Internationale du Diabète, 2021.
- [2] Kassir K. Valeurs normales de l'hémoglobine glyquée chez l'ivoirien adulte présumé Sain. Thèse Pharm. Univ. Abidjan: 2003, 872, 189p.
- [3] Prédiabète/diabète Québec [en ligne]. c2023. [Consulté le 29/06/23] Disponible sur: <https://www.diabete.qc.ca/le-diabete/informations-sur-lediabete/prediabete/>
- [4] Diop S. N., Wade A., Lokrou A., Diédhiou; D., Adoueni V. K. Prise en charge du diabète de type 2 en pratique médicale courante en Afrique sub-saharienne: résultats de l'étude AMAR-AFO au Sénégal et en Côte d'Ivoire. *Med Maladies Metab* 2013; 7 (4): 363-7.
- [5] Koudou G. H. P. Facteurs de risque du diabète dans la population non diabétique de la région du sud Comoé (Côte d'Ivoire): cas des villes d'Aboisso et de Bonoua [Thèse]. Côte d'Ivoire: Université Félix Houphouët Boigny; 2017. 116p.
- [6] Nemi K. D., Djalogue L., Djagadou KA, Tchamdja T, Tsevi YM, Balaka A. Les modes de révélation du diabète sucré au CHU Sylvanus Olympio de Lomé. *Pan Afr Med J.*, 2019, 34: 99.
- [7] Djibril, M. A., Balaka, A., Nemi K. D., Tchamdja, T., & Agbetré A. Urgences diabétiques à Lomé: aspects épidémiologique et pronostique. *Journal de la Recherche Scientifique de l'Université de Lomé*, 2013, 15 (3): 353-8.
- [8] Dehayem MY, Sobngwi E, Nwatoock JF, Mani JM, Jupkwo B, Mbanya JC. Prise en charge du diabète sucré au Cameroun: résultats de l'étude Diabcare. *Diabetes Metab.* 2010; 36 (1): 59-60.
- [9] Sow D, Diédhiou D, Diallo IM et al. Etude des facteurs de risque cardiovasculaire chez les patients diabétiques de type 2 au Centre Marc Sankalé de Dakar. *RAFMI* 2018; 5 (2): 43-9.
- [10] Kyelem CG, Yaméogo TM, Ouédraogo MS, Rouamba, N., Sombié, I., Lankoandé, D., et al. Caractéristiques Thérapeutiques des Diabétiques Suivis au CHU de Bobo-Dioulasso, Burkina Faso. *Heal Sci Dis.* 2014; 15 (2): 2-6.
- [11] Mbaye M, Niang K, Sarr A, Mbaye A, Diedhiou D, Ndaou M-B et al. Aspects épidémiologiques du diabète au Sénégal: résultats d'une enquête sur les facteurs de risque cardiovasculaires dans la ville de Saint-Louis. *Med maladies Metab* 2011; 5 (6): 659-64.
- [12] Agoudavi K. et al. Rapport final de l'enquête STEPS Togo 2010.
- [13] Mossi KE, Balaka A, Tchamdja T, Djagadou K, Sama HD, Apeti S et al. Prévalence des complications du diabète sucré à la Clinique médico-chirurgicale du CHU Sylvanus Olympio de Lomé. *RAFMI* 2019; 6 (1-3): 42-8.
- [14] M. Dali-Sah, D. Benmansour, A. Aouar, N. Karam. Etude de l'épidémiologie du diabète de type 2 dans les populations endogames de l'ouest Algérien. *Lebanese science journal*, 2012, 13 (2) 17-26.