



# Knowledge and Dietary Habits of Diabetic Patients in Hospital in Kara

Djalogue L<sup>1\*</sup>, Bessike Koissi Y<sup>2</sup>, Nemi KD<sup>3</sup>, Djagadjou KA<sup>3</sup>, Tchamdja T<sup>1</sup>, Balaka A<sup>4</sup> and Djibril MA<sup>3</sup>

<sup>1</sup>Department of Internal Medicine, Kara University Hospital, Togo

<sup>2</sup>Department of Science and Technology, Kara University, Togo

<sup>3</sup>Department of Internal Medicine, CHU Sylvanus Olympio (Lomé), Togo

<sup>4</sup>Department of Internal Medicine, CHU Campus (Lomé), Togo

## Abstract

**Introduction:** Diabetes, a chronic metabolic disorder characterized by elevated blood sugar levels, poses a major global health issue, including in Togo. Managing diabetes necessitates a comprehensive strategy encompassing lifestyle changes, medication compliance, and regular monitoring. To shed light on this matter, our study sought to evaluate the dietary habits and knowledge of diabetic patients in Togo, along with the obstacles they encounter in adhering to prescribed dietary guidelines.

**Methods:** A cross-sectional study was conducted among diabetic patients attending clinics in Togo. Demographic data, including age, gender, marital status, and educational level, were collected. Information on dietary habits, including meal frequency, food composition, and adherence to dietary restrictions, was obtained through structured questionnaires. Additionally, the patients' knowledge of diabetes and its management was assessed.

**Results:** A total of 102 diabetic patients participated in the study, with a slight female predominance (54.96%). The mean age of the patients was 57 years, and the majority fell within the 51 to 60 age group. Most patients were married (79.4%) and had some level of education (82.4%). The duration of diabetes varied, with 65.7% of patients being diagnosed within the last 6 years.

Regarding dietary habits, the majority of patients (70.2%) consumed meals from a common shared dish, while a smaller proportion (19%) had specially prepared meals due to their diabetes. Only a minority of patients (2%) measured their food portions before consumption. It was found that 76.5% of patients believed there were unrestricted foods they could consume without measurement, while 93% acknowledged the existence of strictly prohibited foods, such as sugary items.

**Conclusion:** Successful diabetes management requires a balanced diet, exercise, and medication adherence. Our study revealed challenges in adhering to hygienic and dietary measures for many patients. Therapeutic education should be strengthened to address these challenges and improve diabetes care in Togo.

## Introduction

Diabetes is a public health concern due to its increasing prevalence and the complications it entails [1]. According to the International Diabetes Federation (IDF), the prevalence of diabetes is growing exponentially, and it has become one of the significant non-communicable diseases in Sub-Saharan Africa, with a prevalence of 3.9%, affecting approximately 19.4 million people. It contributes to a heavy burden in Africa, accounting for around 366,200 deaths per year [2].

In Togo, the STEPS survey in 2010 showed that the prevalence of diabetes was 1.79% in 1998 and increased to 2.6% in 2010 among the population aged 15 to 65 years. The Kara region had a high prevalence of 4.9% [3].

The therapeutic approach to diabetes encompasses two key aspects. Firstly, it emphasizes hygienic-dietary management, which encompasses physical exercise and nutrition. Secondly, it involves the addition of antidiabetic medications. Dietary recommendations focus on limiting energy intake according to body mass index and selecting foods with a low glycemic index and low saturated fat content [4].

## OPEN ACCESS

### \*Correspondence:

Djalogue Lihanimo, Department of Internal Medicine, Kara University Hospital, Togo

Received Date: 27 Jul 2023

Accepted Date: 11 Sep 2023

Published Date: 15 Sep 2023

### Citation:

Djalogue L, Bessike Koissi Y, Nemi KD, Djagadjou KA, Tchamdja T, Balaka A, et al. Knowledge and Dietary Habits of Diabetic Patients in Hospital in Kara. *Int J Intern Emerg Med.* 2023; 5(2): 1051.

**Copyright** © 2023 Djalogue L. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Regardless of the antidiabetic medications used, adherence to hygienic-dietary measures is essential, and poor adherence can lead to varying degrees of failure in the proposed medications [4].

In Togo, the prevalence of diabetes is increasing due to the changing lifestyle of the population and associated nutritional transition [3].

Similar to other countries in Sub-Saharan Africa, our country faces challenging agro-pedo-climatic conditions. The agricultural sector predominantly relies on cereal crops, forming the core of our dietary framework, which consists of 80% cereals, roots, and tubers. A concerning observation we have made is that many diabetic patients frequently present in a diabetic coma state, despite regularly taking their prescribed antidiabetic medications. This observation has prompted us to pose several crucial questions: Do diabetic patients being treated in our hospitals have knowledge about their diet? Do they adhere to this diet? It is the quest for answers to these inquiries that justifies our study.

## Methodology

This was a descriptive cross-sectional study on the knowledge of diabetes and dietary habits of diabetic patients in the Kozah prefecture. The survey was conducted from May 26<sup>th</sup> to September 5<sup>th</sup>, 2021 (3 months and 10 days) at three healthcare centers: Kara University Hospital, Kara Regional Hospital, and Kara Polyclinic. Direct interviews were conducted with the patients. The sampling was random and based on the active patient queue in the three centers during the study period.

Our study included adult diabetic patients over 30 years of age who had been under the care of the Internal Medicine Department at Kara University Hospital, the Medicine Department at Kara Regional Hospital, or the Medicine Department at Kara Polyclinic for at least six months. Only patients who had a consultation during our survey period and provided their consent were included in the study. The patients' consent was obtained orally, and strict confidentiality was maintained throughout the data collection process.

Patients who had been diagnosed with diabetes for less than 6 months, those with gestational diabetes, and diabetic patients who were unable to answer the questionnaires were not included in the study. The sampling approach was exhaustive, and data were collected using a pre-established questionnaire administered to the patients.

## Results

### Sociodemographic data

A total of 102 diabetic patients were included in our study. The mean age of the patients was 57 years, ranging from 30 to 81 years. The most prevalent age group was [51-60], representing 36.27% of the participants. Women were more represented, accounting for 54.90% of the sample, resulting in a male-to-female sex ratio of 0.82.

Regarding marital status, 79.41% of the patients were married, and 16.67% were widowed.

In terms of educational attainment, 40.20% had a secondary level of education, 26.47% had a primary level of education, and 15.69% had a higher education level.

In our sample, housewives and retirees were the most represented occupational categories, accounting for 36.27% and 22.54% of the patients, respectively.

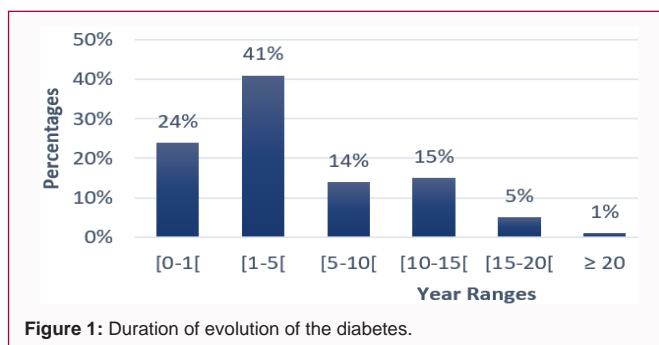


Figure 1: Duration of evolution of the diabetes.

The duration of diabetes is illustrated in Figure 1.

In the current study, 94.12% of the patients had type 2 diabetes, while 5.88% had type 1 diabetes. Regarding the treatment approaches, 86.27% of the patients were prescribed oral antidiabetic medications, 9.80% were receiving insulin therapy, and 3.92% were utilizing a combination of insulin and oral antidiabetic medications.

### Knowledge about diabetes

**Origin of diabetes:** Among the 102 respondents, 83.33% (n=85) were aware that diabetes is not transmitted by a microbe, while 10.78% were uncertain about this fact. Nearly 66% of the diabetic patients interviewed stated that an imbalance in diet can cause diabetes, 75% believed it to be of familial origin, and 54% affirmed that it is the result of a combination of certain factors such as obesity, heredity, a diet rich in sugar, and a diet high in fat.

**Clinical manifestations:** Out of the 102 patients surveyed, 94.12% (96 patients) stated that the clinical manifestations of diabetes include one or a combination of symptoms such as polyuria with nocturia, polydipsia, asthenia, and weight loss.

**Treatment:** In our survey, 93.14% of the patients recognized that the treatment for diabetes consists of a combination of dietary modifications, physical activity, and medication. However, only 4.90% of the patients acknowledged medication as the sole component of the treatment.

**Knowledge about foods that can be freely consumed by a diabetic:** In our study, 76.47% of the surveyed patients were aware that individuals with diabetes can freely consume certain foods such as vegetables, fish, poultry, and raw vegetables.

**Knowledge about foods not recommended for diabetics:** Regarding foods that are not recommended, 93.14% of the patients acknowledged the existence of certain foods (sugar and sugar-related products) that are not recommended for diabetics, while 4.90% believed that individuals with diabetes can consume any food without restrictions.

### Dietary habits

**Dietary patterns of diabetic patients:** Among the interviewed patients, 69.61% of them consume their meals by serving themselves from a common family dish. On the other hand, 19.61% have a specially prepared meal due to their diabetes. The remaining 10.78% of patients state that they have a mixed diet (family and outside sources).

**Beverage consumption:** During our survey, 23.53% of the participants reported consuming beverages other than water. These beverages primarily consisted of sugary drinks (33.33%), especially

during episodes of hypoglycemia, and alcoholic beverages (66.67%), with 78.65% consuming them on an occasional basis.

**Food quantification:** In this study, 98% of the patients reported not measuring their food before consuming it. However, the remaining 2% stated that they do measure their food before eating. The commonly used units of measurement include tablespoons, handfuls, cups, bowls, ladles, or a small plate chosen by each individual.

**Meal frequency:** Regarding the frequency of meals, 71.57% of the patients reported having three meals per day, while 28.43% reported having one to two meals per day.

**Modification of diet based on blood sugar levels:** During the survey, 52.94% of diabetics stated that they loosen their adherence to the diet if their blood sugar control is good. The remaining portion (47.06%) affirmed that they always follow the diet regardless of their blood sugar levels.

**Challenges in following the dietary regimen:** During the survey, it was found that 40.20% of patients find adhering to the dietary regimen to be a problem in their daily life, while for 59.80%, following the dietary regimen is not a problem. The challenges reported by patients include financial constraints, as the diet can be expensive for them, as well as social and professional constraints, such as being obligated to eat outside of their home environment. These factors contribute to the difficulties faced by patients in effectively following their prescribed dietary regimen.

**Nature and composition of consumed foods:** During the last three days of the survey, the meals consumed by diabetics for breakfast, lunch, and dinner were composed as follows:

- For breakfast, the respondents predominantly consumed porridge as a source of carbohydrates (66.67%), meat as a source of protein (26.47%), and oil as a source of fat (57.84%). Nearly all respondents, 98.04%, did not consume any fruits for breakfast.
- For lunch, the respondents mainly consumed cereals, with rice being the most common (56.86%), and tubers such as yam (26.47%) as sources of carbohydrates. Beans were consumed by 17.65% of respondents as a source of protein, and oil was used in sauces by 98.04% of respondents as a source of fat. More than half of the patients (93.14%) did not consume any fruits or vegetables during lunch.
- For dinner, the respondents primarily consumed cereals, including cornmeal (25.49%) and rice (16.67%), as well as tubers such as yam (13.73%) as sources of carbohydrates. Fish was the main source of protein for 26.47% of respondents, and oil was used in sauces and cooking by 97.06% of respondents as a source of fat. 66% of respondents did not consume any fruits or vegetables during dinner.

## Discussion

### Sociodemographic features

Our study revealed a predominance of females, accounting for 54.96% of the participants, with a male-to-female ratio of 0.82. This finding can be attributed to the higher representation of women in the general population of Togo. Similar results were found by Ouedraogo [5], who reported a female predominance of 59% in a study on the dietary habits of diabetics conducted in Ouagadougou in 2002, and Abdou Razak Moukaila [6], who found a female predominance of 51.4% in a study conducted in Togo.

The mean age in the current study was 57 years, ranging from 30 to 81 years. The most represented age group was between 51 and 60 years. These findings can be explained by the higher risk of developing diabetes when age grows. These results align with those of Razak Moukaila [6], who found that individuals over 50 years of age accounted for the majority (71.7%) of cases. Fehaima [7] also reported a similar average age of  $54.19 \pm 17.94$  years in their study on quality of life and diabetes in Algeria, with the most represented age group being between 45 and 60 years. Wanvoegbe et al. [8] found an average age of  $54.67 \pm 12.69$  years in their study on therapeutic compliance among diabetics in Benin.

The majority of our patients (79.4%) were married. This finding is consistent with the studies conducted by Ouedraogo [5], who found a marriage rate of 79.7%, and Kambou [9], who reported a rate of 80.77%. Marital status plays a role in the adherence to the diabetic diet, as being in a relationship often leads to increased attention and support from the spouse in following the doctor's instructions.

In our study, 82.4% of the subjects were educated (ranging from primary to university level), while 17.6% were uneducated. This result differs from the findings of Kambou [9] and Ouedraogo [5], who reported rates of educated individuals at 34.62% and 30.4%, respectively. Education level can contribute to a better understanding of the disease and, consequently, better adherence to the prescribed diet.

The majority of the participants (65.7%) were diagnosed with diabetes six years ago. This could be attributed to the fact that the diagnosis of diabetes is often made at a late stage, as it is a silent disease. This result is consistent with the findings of Dekkar [10] in Morocco in 2012, who reported that 69% of participants were diagnosed less than ten years ago in their study on Therapeutic Patient Education for diabetic patients.

### Knowledge about diabetes

The majority of patients, 98%, were able to provide an acceptable response. This result is comparable to that of Sidibe [11], who found a rate of 92%, and Alassani in Benin, who found a rate of 85.2% [1]. This could be explained by the fact that they receive information about the disease during their medical consultations.

### Dietary habits

In our study, 70.2% of patients reported consuming their meals from a shared dish. Meanwhile, 19% had meals specially prepared for them due to their diabetes. These findings are consistent with those of Ouedraogo [5], who found that 60.7% of patients consumed food from a shared dish, and 38% had meals specially prepared for them. Ben Abdel Aziz et al. [12] reported a higher rate of 89.8% for meals from a shared dish. Kambou [9] found that 47.11% of patients ate from a shared dish, while 46.15% had meals specially prepared for them. Consuming meals from a shared dish may pose challenges for patients in adhering to their prescribed diet.

The majority of patients, accounting for 98%, reported that they do not measure their food before consuming it. This finding is consistent with the study conducted by Sidibe et al. [11] in Mali, which reported a similar rate of 91.3%. However, it diverges from the results of Ouedraogo et al. [5], who found that 62% of diabetic patients actively measured their food before consumption. This disparity could be attributed to a lack of awareness regarding food measurement techniques and the limited availability of measuring tools among the participants.

The majority of patients, 76.5%, affirmed the existence of unrestricted foods that they can consume without measuring. On the other hand, almost all patients (93%) stated that there are strictly prohibited foods, such as sugary foods. This finding is in line with that of Ouedraogo et al. [5], who reported rates of 93.7% and 97.5%, respectively.

Slightly more than half (52.9%) of our patients reported adapting their diet based on their blood glucose control. This often leads to elevated blood glucose levels during subsequent monitoring. Patients tend to believe they are cured and relax their dietary restrictions when their blood glucose levels are satisfactory. This finding is consistent with that of Ouedraogo et al. [5], who found a similar rate of 53.1%.

Among the respondents, 59.8% did not find adhering to the prescribed diet burdensome in their daily lives. However, 40.2% considered following the diet a handicap. This finding aligns with Ouedraogo's study [5] in Ouagadougou, where 58.2% of patients reported that the dietary requirements were very demanding. These handicaps are attributed to the high cost of the diet, difficulty in breaking old habits, the desire to avoid discrimination during social events, and workplace challenges. These factors, combined with the expensive cost of certain foods (such as vegetables), make adherence to the diet difficult. In Sophie AZAMBOURG's study [13], most practitioners mentioned a lack of patient motivation in implementing dietary advice and emphasized the difficulty of changing patients' eating habits.

## Conclusion

Achieving diabetes control always relies on a proper diet, tailored physical exercises for diabetic individuals, in addition to antidiabetic medications. However, adhering to hygienic and dietary measures can be challenging for patients, as observed in our study where 40.2% of patients shared this opinion. It is crucial to emphasize therapeutic education to highlight the significant role of adhering to hygienic and dietary measures in maintaining diabetes control. Additionally, providing psychosocial support is essential for patient motivation in coping with the challenges of diabetes.

## References

1. Alassani A, Dovonou Ca, Gninkoun J, Wanvoegbe A, Attinsounon C, Codjo L, et al. Perceptions and practices of people with diabetes to diabetes mellitus at the Centre National University Hospital Hubert Maga Koutoucou Cotonou. *Mali Med.* 2017;32(3):23-7.
2. International Diabetes Federation. *IDF Diabetes Atlas*. 9<sup>th</sup> Ed. Brussels. 2019.
3. Ministry of Health Togo. Final report of the investigation steps TOGO 2010. P51-6. 2023;51-6.
4. Alimi S. Les diabètes: prise en charge thérapeutique de l'hyperglycémie. In: Benveniste O, Chaussade S, Coriat R, Lejoyeux M, Lévy P, Lipsker D, et al. editors. *Treatise on medicine*. 5<sup>th</sup> Ed. Paris: Tdm. 2019. p. S21-P08-C07 (1-11).
5. Ouedraogo A. Study of the diet of diabetics: Result of a qualitative and semi-quantitative survey. Ouagadougou: University of Ouagadougou; 2002. p. 83.
6. Moukaila AR, Mossi EK, Nemi KD, Kodjo K, Djagadou AK, Balaka A, et al. Evaluation of the level of knowledge and practice of hygieno-dietary measures in diabetic patients at the medical-surgical clinic of the Sylvanus Olympio University Hospital in Lomé (Togo). *Int J Diabetes Res.* 2020;9(1):5-11.
7. Fehaima S. Quality of life and diabetes [Memory]. Tlemcen: Université de Tlemcen; 2017. p. 91.
8. Wanvoegbe FA, Agbodande KA, Alassani A, Aviansou A, Gninkoun J, Amoussou-Guenou D, et al. Evaluation of therapeutic compliance among diabetics in Benin. *Med Afr noire.* 2018;65(7):355-61.
9. Kambou JL. Contribution to the study of the diet of diabetics in the internal medicine department of the Yalgado Ouedraogo national hospital center. Ouagadougou: Université de Ouagadougou; 1998. p. 92.
10. Dekkar O. Therapeutic education of diabetic patients (practices and educational messages about 100 cases) [thesis]. Maroc: Université Sidi Mohammed Ben Abdellah; 2012. p. 185.
11. Sidibe EH. Diabetes mellitus in sub-Saharan Africa. French-speaking study and research notebooks/Health. 1998;8(5):342-6.
12. Ben Abdel Aziz A, Thabet H, Soltane I, Gaha K, Gaha R, Tilli H, et al. Knowledge of patients with type 2 diabetes about their condition in Sousse, Tunisia. *East Mediterr Health J.* 2007;13(3):505-14.
13. Azambourg S. Diet of type 2 diabetic patients: How to approach it in general medicine? Rouen: Université de Rouen. 2015. p. 9.