

Evaluation of Knowledge in Therapeutic Education for Hypertensive Patients among General Practitioners in Libreville: An Action Research Approach

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Abstract

Background: Therapeutic patient education (TPE) is an essential component of hypertension management, contributing to improved treatment adherence and prevention of cardiovascular complications. However, the level of knowledge of general practitioners regarding TPE for hypertensive patients remains insufficiently documented in Libreville, limiting the identification of training needs and the optimization of clinical practices. **Objective:** To assess the knowledge of general practitioners in Libreville regarding therapeutic patient education for hypertensive patients in order to identify training needs and guide a targeted educational intervention. **Methods:** This study corresponded to the diagnostic phase of an action-research approach and was based on a descriptive cross-sectional survey conducted from November 14 to 20, 2023. A self-administered online questionnaire adapted from a validated tool was distributed to volunteer general practitioners. Knowledge of TPE was assessed using a 12-item questionnaire, allowing classification into four levels of knowledge. The findings served as the basis for the subsequent implementation of a targeted TPE training workshop. **Results:** Out of 86 responses received, 59 were analyzed. The general practitioners had a mean age of 31.7 ± 5.9 years, with a male-to-female ratio of 0.96. The mean knowledge score was 5.6 ± 1.3 . Knowledge levels were classified as poor in 47.5% of participants,

insufficient in 47.5%, and moderate in 5.0%. No participant achieved a good level of knowledge. A frequent confusion between patient information and structured therapeutic education was identified. **Conclusion:** General practitioners in Libreville have overall insufficient knowledge of therapeutic patient education for hypertensive patients. The action-research approach provides a relevant framework to guide targeted training interventions and improve hypertension management in primary care.

Keywords

Hypertension, Therapeutic Patient Education, General Practitioners, Action Research, Cardiovascular Prevention

1. Introduction

Arterial hypertension (AH) is the most important modifiable risk factor for morbidity and all-cause mortality worldwide [1]. It constitutes a major public health issue, particularly in low-resource countries [2] [3]. Despite the availability of effective antihypertensive treatments, blood pressure control remains inadequate in a significant proportion of patients, exposing them to preventable cardiovascular complications [3]. Among the causes of poor blood pressure control are poor knowledge of the disease and therapeutic non-adherence [4].

The management of AH relies not only on the adoption of hygienic-dietetic measures and pharmacological treatment, but also on therapeutic adherence and the active involvement of the patient in managing their disease [1] [3]. In this context, therapeutic patient education (TPE), as defined by the World Health Organization, aims to enable the patient to acquire the necessary skills to live as best as possible with a chronic disease [5]. By promoting a better understanding of AH, the action of medications, and hygienic-dietetic measures, it contributes to improving therapeutic adherence, blood pressure control, and, indirectly, to reducing the risk of cardiovascular complications [1] [3] [6].

The general practitioner, as the patient's first point of contact with the healthcare system, plays a central role in the implementation of therapeutic patient education (TPE). However, in routine practice, TPE for hypertensive patients is often reduced to sporadic information, without a structured approach or clearly defined educational objectives. This confusion between information and therapeutic education can limit the effectiveness of the overall management of AH.

In sub-Saharan Africa, data on the knowledge and practices of general practitioners regarding TPE for hypertensive patients are scarce. In this context, an evaluation of these practitioners' skills appears necessary in order to identify training needs and propose appropriate interventions.

This study is part of an action research approach. Its objective, in its diagnostic phase, was to access the knowledge of general practitioners practicing in Libreville

regarding TPE for hypertensive patients, in order to guide targeted training.

2. Methods

2.1. Type and Framework of the Study

This was the diagnostic phase of a research-action approach, based on a descriptive cross-sectional study conducted in Libreville (Gabon).

2.2. Study Population

The target population consisted of general practitioners working in public or private facilities in the city of Libreville. Physicians who agreed to participate in the study were included. To ensure a homogeneous sample, specialists and those living outside Libreville were excluded.

2.3. Data Collection

Data collection took place from November 14 to 20, 2023, using an anonymous online self-questionnaire (Google Forms*). The questionnaire link was distributed via professional platforms bringing together local physicians. The questionnaire covered:

- sociodemographic data: age and gender;
- professional data: year of thesis defense, place of practice (university hospital center (CHU), regional hospital center (CHR), health center, medical office, private structure, or other), internship in cardiology or in another medical specialty during basic medical training;
- information on training and experience in TPE: participation in TPE sessions, training in TPE;
- evaluation of knowledge in TPE.

2.4. Evaluation of Knowledge

Knowledge in TPE was evaluated using 12 questions adapted from a questionnaire previously used by May Fiani [7] (Table 1). Each correct answer was scored 1 point, for a maximum score of 12. A contextual adaptation was made to take into account the local setting. Responses to questions 1 to 6 were dichotomized as yes/no. For multiple-choice questions, an answer was considered correct only when all the expected options were selected in cases without specification, or when the main expected answer was provided. In both cases, no incorrect option had to be selected.

Table 1. Judgment criteria for the knowledge of general practitioners on therapeutic education in the city of Libreville (Gabon) in 2023.

Question posed	Expected answer
Answer yes or no	
1. Therapeutic patient education is an integral part of the management of patients with chronic diseases.	Yes

Continued

2. Advising a patient to quit smoking, lose weight, or reduce salt intake constitutes therapeutic education.	No (it is information/an advice, not a structured TPE approach)
3. Providing information on arterial hypertension and its management constitutes therapeutic education.	No (TPE goes beyond information alone)
4. Therapeutic education can be carried out by a general practitioner alone.	No (it must be structured and often multidisciplinary)
5. Is it necessary to be trained in therapeutic education to practice it?	Yes
6. In your opinion, is therapeutic education the responsibility of the general practitioner?	Yes (but shared with a team)
QCM	
7. Who can conduct a therapeutic education session?	
Psychologist	Yes
Organ specialist	Yes
Occupational physician	Yes
General practitioner	Yes
Nurse	Yes
Well-informed patient	Yes (in some peer aid programs)
Multidisciplinary team	Yes (main expected answer)
Pharmacist	Yes
Any well-informed person	No (requires training)
8. Where can therapeutic education be conducted?	
In outpatient consultation	Yes
During hospitalization	Yes
In group sessions	Yes
At the patient's home	Yes
Everywhere	Yes (if the organization is well adapted)
9. When should therapeutic education sessions be offered?	
At any stage of the disease	Yes
From the announcement of the diagnosis	Yes
In case of therapeutic non-compliance	Yes
In case of chronic illness	Yes
In case of acute illness	No
At the patient's request	Yes
In case of treatment failure	Yes
All answers	No (acute illness is incorrect)

Continued

10. What type of therapeutic education sessions can you lead?	
Individual session	Yes
Group session	Yes
Both	Yes (main answer)
11. To whom are therapeutic education sessions addressed?	
To patients with chronic diseases	Yes (main expected answer)
To patients' families	Yes
To adult patients only	No
To children	Yes
To healthcare staff	No (this is not the main target)
12. What are the diseases targeted by therapeutic education?	
Arterial hypertension	Yes
Diabetes	Yes
Heart failure	Yes
Asthma	Yes
Epilepsy	Yes
Cancer	Yes
All types of chronic diseases	Yes (main expected answer)
Do you wish to be trained in therapeutic education?	Free response

Knowledge levels were defined as follows: poor (0 - 5), insufficient (6 - 7), average (8 - 10), and good (11 - 12).

2.5. Data Analysis

The data were analyzed descriptively. Quantitative variables were expressed as mean \pm standard deviation, and qualitative variables as frequencies and percentages. Data extraction from Google Forms was performed in an Excel file, and the analysis was conducted using EPI INFO 7*. At the end of the study period, the database was cleaned by excluding non general practitioners, practitioners working outside Libreville and incomplete questionnaires. Duplicates were checked based on sociodemographic characteristics, place of training and responses to the questionnaire.

2.6. Phase Action

The results of this diagnostic phase were presented during a scientific meeting. They enabled the design and facilitation, during the same meeting, of a training

workshop on TPE intended for general practitioners, fitting into the continuity of the research-action approach. This workshop included an informational session on the principles of therapeutic patient education as well as practical exercises in the form of role-playing (educational diagnosis and training in self-measurement of blood pressure). However, this workshop was not formally evaluated in the present study.

2.7. Ethical Consideration

This study was based on an anonymous questionnaire that did not collect any identifying data. Participation was voluntary. Participants were informed to the study objectives in the introduction to the questionnaire and informed consent was considered obtained upon submission on the form. Data confidentiality was strictly maintained throughout the entire process.

3. Results

3.1. General Data of Participants

A total of 86 physicians completed the online questionnaire. Fifty-nine of them met the inclusion criteria and were analyzed (**Figure 1**).

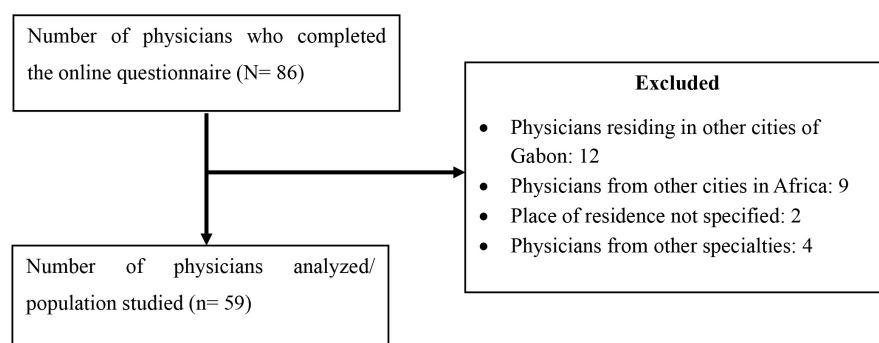


Figure 1. Flow diagram of participants in the study on the knowledge of general practitioners regarding therapeutic education in the city of Libreville (Gabon) in 2023.

The mean age was 31.7 ± 5.9 years. The sex ratio was 0.96. The median duration of medical practice was two years, with extremes of zero and 31 years.

In 59.0% of cases, the participants practiced in university hospital centers (**Table 2**).

Table 2. Distribution of participants according to place of practice.

Place of practice	Number	Percentage (%)
University Hospital Center	35	59
Medical center or private clinic	13	22
Health center	5	9
Other	6	10

During their hospital internships, the physicians had rotated in cardiology and in certain other services managing chronic pathologies (**Table 3**).

Table 3. Distribution of participants according to internships completed in services managing chronic diseases.

Internship Service: n (%)	Yes	No
Cardiology	38 (64.5)	21 (35.6)
Neurology	40 (67.8)	19 (32.2)
Endocrinology	34 (57.6)	25 (43.4)
Infectiology	26 (44.1)	33 (55.9)
Internal Medicine	43 (72.9)	16 (27.1)

The participants reported not having benefited from formal training in TPE during their initial or continuing education in 74.6% of cases (n = 44).

Twenty physicians (33.8%) stated that they had already practiced TPE sessions.

3.2. Knowledge of General Practitioners on TPE

In 86.5% of cases, physicians recognized that therapeutic education is part of the management of chronic diseases. There was confusion between advising on hygiene-dietary measures (91.5%) or providing information (96.6%) and conducting therapeutic education. Physicians knew that ideally, TPE is designed within the framework of a multidisciplinary team (n = 34; 57.6%). In 39.0% of cases (n = 23), they thought that TPE could be performed by any well-informed person. They believed they could lead an individual session (n = 36; 37.2%) or a group session (n = 1; 1.6%). They knew that TPE concerns, among others, patients with chronic pathologies in 91.5% of cases (n = 54) (**Table 4**).

Table 4. Perception of therapeutic education by general practitioners.

Question posed	Expected answer n (%)
1. Therapeutic patient education is an integral part of the management of patients with chronic diseases.	51 (86.4)
2. Advising a patient to quit smoking, lose weight, or reduce salt intake constitutes therapeutic education.	5 (8.4)
3. Providing information on arterial hypertension and its management constitutes therapeutic education.	2 (3.3)
4. Therapeutic education can be carried out by a general practitioner alone.	26 (44%)
5. Is it necessary to be trained in therapeutic education to practice it?	26 (44%)
6. In your opinion, is therapeutic education the responsibility of the general practitioner?	39 (66.1)
7. Who can conduct a therapeutic education session?	3 (5.1)

Continued

8. Where can therapeutic education be conducted?	38 (64.4)
9. When should therapeutic education sessions be offered?	35 (59.3)
10. What type of therapeutic education sessions can you lead?	36 (61)
11. To whom are therapeutic education sessions addressed?	2 (3.3)
12. What are the diseases targeted by therapeutic education?	45 (76.3)

The majority of physicians (n = 57; 96.6%) wished to be trained in TPE.

The mean knowledge score in TPE was 5.6 ± 1.3 . The knowledge level was judged poor in 47.5% of participants, insufficient in 47.5%, and average in 5.0%. No participant had obtained a score corresponding to a good knowledge level.

4. Discussion

This study highlighted an overall insufficient level of knowledge in TPE among general practitioners practicing in Libreville, with no participant reaching a level of knowledge deemed good. These results are consistent with those reported in other African contexts, where deficiencies in knowledge and practices in the management of AH have also been described [8].

The knowledge deficiencies in TPE for hypertension observed among the general practitioners in this study may constitute a barrier to the effective implementation of this approach in routine practice. However, a properly structured TPE is associated with better therapeutic adherence and improved blood pressure control, key elements in the prevention of cardiovascular complications related to AH [4]-[6].

The frequent confusion between information, advice, and structured therapeutic education, observed in a significant proportion of physicians, indicates that they lack training in educational and behavioral techniques [9]. It underscores the need for specific and structured training. Informing the patient is not sufficient; TPE involves a pedagogical approach aimed at acquiring self-care and adaptation skills [5].

The low level of TPE training observed may explain the identified gaps, with nearly three-quarters of physicians reporting no specific training.

The knowledge deficiencies of practitioners have implications in clinical practice: several studies have shown that poor blood pressure control is closely linked to poor knowledge of the disease and therapeutic non-compliance [4] [10]. Conversely, TPE has demonstrated its effectiveness in improving these determinants. It notably enables increasing the knowledge level of hypertensive patients, improving therapeutic adherence, and promoting better blood pressure control [6] [11] [12]. Furthermore, it has been established that a good level of patient knowledge is associated with better treatment adherence, while poor understanding of the treatment and its complications constitutes a factor of non-compliance [13]-[15].

The strength of this work lies in its integration into an action research approach. The diagnostic phase presented here allowed for the identification of concrete needs but also for proposing an educational intervention adapted to the local context. It led to the implementation of a TPE training workshop, as a part of the continuity of the action-research approach, without formal evaluation within the scope of the present study. This link between research and action represents a relevant lever for sustainably improving the management of hypertension.

This study has certain limitations. The principal is the small sample size. The use of voluntary online sampling may introduce selection bias, as the most motivated physicians are more likely to participate. Furthermore, the predominance of respondents working in hospital setting may limit the representativeness of the results for all general practitioners in Libreville. Finally, since the data are self-reported, reporting bias cannot be excluded. These elements should be taken into account when interpreting and generalizing the results.

5. Conclusion

The knowledge of general practitioners on TPE for hypertension in Libreville is insufficient, with a persistent confusion between information and TPE. This diagnostic study, embedded in an action research approach, enabled the identification of training needs and the guidance of a targeted educational intervention. Strengthening the TPE skills of general practitioners appears essential for improving the prevention of cardiovascular complications related to arterial hypertension. Complementary studies would be useful to assess the impact of these strategies on professional practices and patient blood pressure control.

Conflicts of Interest

None.

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