

Therapeutic Patient Education in West Africa: A Literature Review

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Abstract

Background: In developed countries, therapeutic patient education or patient education helps people with chronic diseases to manage their health conditions and produces health and financial benefits. However, there are few data available on educational practices in Africa. We conducted this study in order to identify the characteristics of patient education in West Africa. **Methods:** A literature review was conducted. The search strategy generated 488 results from four databases (PubMed, BDSP, Web of Science, PsycINFO). **Results:** All the articles were evaluated for their relevance to the selection criteria. Fifteen were retained. Most had been published in English-language journals. They covered various chronic diseases, notably diabetes and HIV/AIDS, and focused mainly on educational interventions. None addressed the negotiation of educational objectives. They presented satisfactory results in terms of efficacy but little detail on teaching methodologies. Patient education is reduced to the transmission of information exclusively targeting the acquisition of self-care skills. **Conclusion:** This review confirms that patient education is only of minor interest in West Africa. However, in view of the rapidly increasing number of people needing chronic care services in developing countries, there is a need for scientific research data for the formulation and implementation of patient education policies adapted to West African countries.

Keywords

Therapeutic Patient Education, Chronic Illness, Chronic Disease, Chronic Condition, West Africa, Literature Review

1. Introduction

Therapeutic patient education (TPE) is an ongoing process, integrated into a care approach, centered on the patient, aiming to make the patient autonomous in managing their chronic disease [1]. Operationally, it is a coordinated set of activities, including the development of shared educational assessments (patient needs assessment or educational diagnosis), the co-construction of educational objectives (or educational contracts) with definition of learning priorities, the planning and implementation of personalized or collective learning sessions and the evaluation of acquired skills to recognize the patient's efforts, develop their self-assessment abilities, and readjust as needed [2]. It is fundamentally different from information (transmission of knowledge), advice (ad hoc recommendations) and compliance support (all actions and devices aimed at helping a patient to faithfully follow their medical prescriptions) through its main objective: the acquisition of self-care and adaptation or psychosocial skills [3]. Patient education, or therapeutic patient education (TPE), is now an integral part of managing patients with chronic illnesses. It represents a field of practice that lies at the intersection of medicine, care and education [4] and is based on a shift in focus away from the illness to the patient and their future as a unique subject [5]. The patient is increasingly being given a central role as an informed, decision-making, proactive subject [6]. As one of the responses to the management of chronic illnesses, TPE aims both to develop medical, psychological and educational skills in the patient and to establish an effective partnership with the caregiver. It has obvious benefits for the patient in terms of quality of life, fewer complications and hospitalisations and better compliance in terms of taking medication and following hygiene and dietary recommendations [7]. It also responds to the need to control health expenditures. Despite its medical and economic value, however, there are few data available on educational practices in Africa. Indeed, there has been so little written on this matter in the accessible literature that it is difficult to objectivise how TPE has been implemented. This situation could be linked either to a failure to publish or to a failure on the part of the main bibliographic reference databases to index publications. However, an improvement in scientific research conditions in Africa since the emergence of HIV/AIDS and a growing focus on chronic noncommunicable illnesses such as diabetes, cancers and cardiovascular diseases may have contributed to an increase in studies on TPE. Moreover, a rise in the number of national medical journals (e.g. *Mali Médical*, *Maroc Médical*) and pan-African medical journals (e.g. *The Pan African Medical Journal*) being indexed in bibliographic databases (e.g. PubMed, Banque de Données en Santé Publique [BDSP]) as well as the fact that African authors have benefitted from publication fee grants and exemptions from international medical journals (e.g. journals sponsored by the Agence Universitaire de la Francophonie [AUF]) could have facilitated the publication of these studies.

It therefore seems apposite to take stock of the scientific studies that have been

carried out in Africa. This literature review on TPE in West Africa contributes to this effort. Such information is essential for guiding the implementation of genuine national and regional policies to promote the practice of TPE within the context of chronic illness management and to assess the need for future educational interventions that are better adapted to the African context generally and to West Africa in particular.

2. Method

2.1. Data Sources

This systematic review was conducted following the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) [8]. Four bibliographic databases were used for the research: PubMed, Web of Science (WOS), PsycINFO and Banque de données en santé publique (BDSP). For PubMed, Web of Science (WOS), and PsycINFO, we used keywords in English. As for BDSP, a French-language database, we used keywords in French, especially since 8 of the 15 West African countries are French-speaking (Benin, Burkina Faso, Côte d'Ivoire, Guinée, Mali, Niger, Sénégal, Togo). In fact, unlike the other three databases, which are primarily focused on English, BDSP (a database specializing in public health) provides easy access to a vast body of scientific and academic literature in French. The Boolean operators AND and OR were used to combine these keywords to refine the search and obtain the most relevant responses (Table 1).

Table 1. Keywords and Boolean operators used in different databases.

PubMed, WOS, PsycINFO	("therapeutic patient education" OR "therapeutic education" OR "patient education" OR "self management" OR "self-care" OR "Chronic Disease Management") AND ("West Africa" OR "Benin" OR "Burkina Faso" OR "Cape Verde" OR "Côte d'Ivoire" OR "Gambia" OR "Ghana" OR "Guinea" OR "Guinea-Bissau" OR "Liberia" OR "Mali" OR "Niger" OR "Nigeria" OR "Senegal" OR "Sierra Leone" OR "Togo")
BDSP	("éducation thérapeutique du patient" OU "éducation thérapeutique" OU "éducation du patient" OU "autogestion" OU "auto-soins" OU "gestion des maladies chroniques") ET ("Afrique de l'Ouest" OU "Bénin" OU "Burkina Faso" OU "Cap-Vert" OU "Côte d'Ivoire" OU "Gambie" OU "Ghana" OU "Guinée" OU "Guinée-Bissau" OU "Libéria" OU "Mali" OU "Niger" OU "Nigeria" OU "Sénégal" OU "Sierra Leone" OU "Togo")

2.2. Selection of Articles

In this literature review, the selection of sources (articles, studies) was conducted in a structured and transparent manner to minimize the risk of bias by two authors (the first two authors) of the six authors with proven experience in literature reviews. After querying the four bibliographic databases, the 508 results generated were exported to Zotero, a bibliographic management software. After the removal of 20 duplicates, they proceeded to a progressive selection of sources (articles, studies) among the 488 results selected for analysis and evaluation, applying consensus at each stage of filtering (title, summary, full text). The first stage was based

on titles, the second on abstracts, and the third on a full read-through of the remaining articles to determine the final list to be exploited and analysed. At the end of the step-by-step filtering, only the sources (articles, studies) that best addressed the issue of this literature review were selected. Finally, the reading of the final full texts selected allowed for a thorough and critical analysis, while taking into account the inclusion criteria, namely the articles and studies published before 01/01/2018 in an English- or French-language journal, relating to an educational activity of the patient with chronic diseases in at least one West African country and with a full text accessible online. A total of 255 references were retained based on their titles, and 24 were retained based on their abstracts. Reading these 24 texts in full allowed us to check their fit with the objective of the study. This final stage in the selection process resulted in 15 articles that met all the inclusion criteria (**Figure 1**).

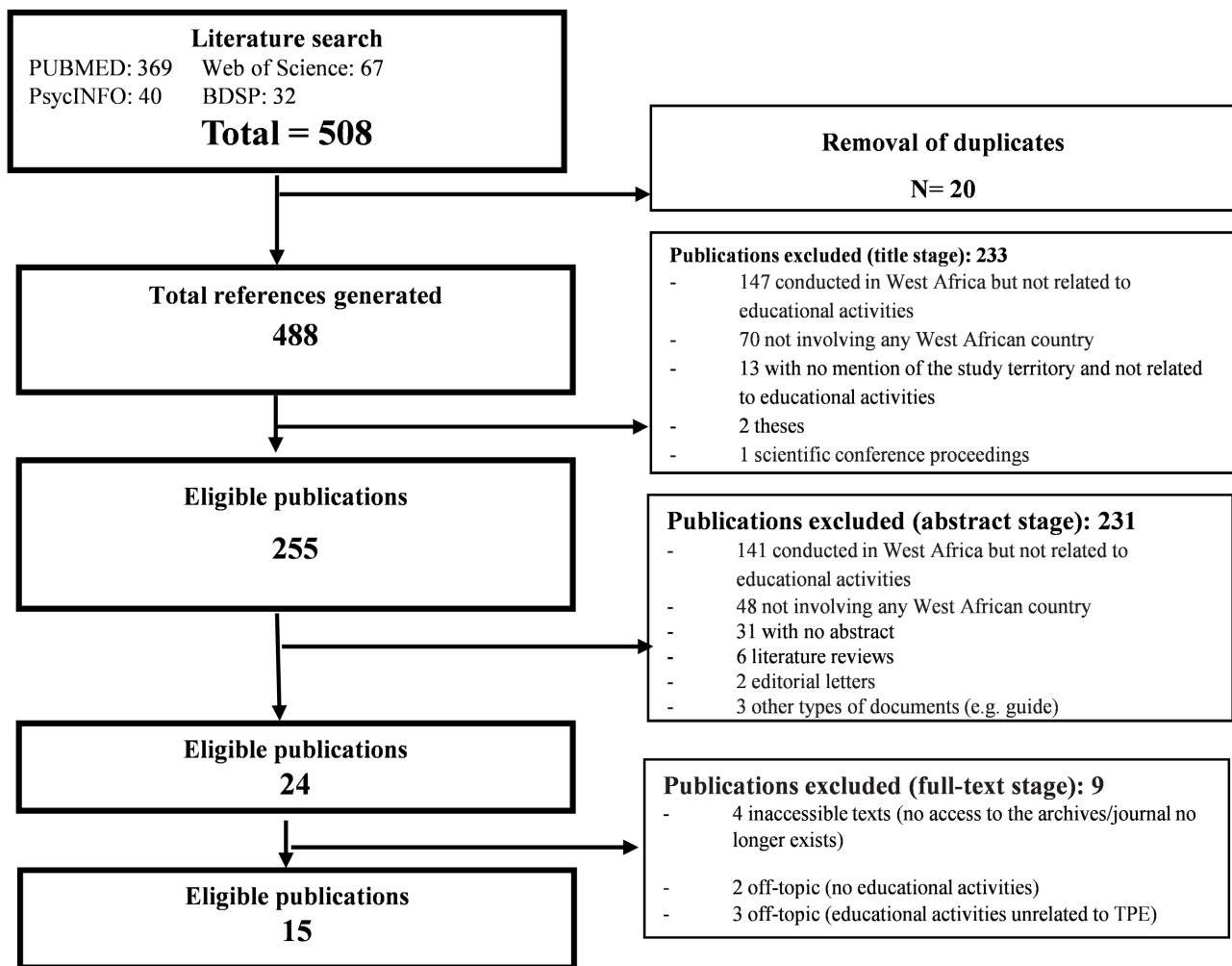


Figure 1. PRISMA flow diagram of article selection process.

2.3. Data Extraction and Analysis

A standardised interpretative framework was used to analyse each article in order

to extract the relevant data structured around the following themes:

- general descriptive elements (references, language, year, country, other countries, organisation, partners, article type, study type, duration, study subjects, illness, funding);
- components of the educational process addressed (educational diagnosis, educational contract, educational activities, evaluation);
- objectives of the studies and educational interventions;
- descriptive elements of the educational interventions (objectives, educators, session contents, methods used, materials used, session locations, session types, number of sessions, session durations, intervention durations);
- results of the evaluations (study results, educational intervention results);
- other aspects addressed in some of the articles.

In order to ensure the reliability and validity of the data collected, a comparative approach using double coding was carried out. However, we would like to point out that this double coding was applied to the analysis of the definitive full-text texts used for this literature review.

3. Result

3.1. General Descriptive Elements of the Articles Retained (Table 2)

In all, 15 articles [9]-[23] were retained, most of which had been published in English-language journals [9]-[12] [14]-[18]. Five of the 15 West African countries were represented in these studies, namely Nigeria [9] [10] [12] [14]-[16] [18], Benin [11] [13], Senegal [17] [21] [23], Mali [20] [22] and Côte d'Ivoire [19]. Funding was mentioned in 10 of the articles [9]-[12] [14] [17] [18] [20] [23]. Of these, only one study received financial support (albeit only partial) from national structure in the country in which it was conducted [14]. In fact, these were projects or works generally based on external financing (United Kingdom, India, Belgium, France, USA, Switzerland, Netherlands and Vietnam) to compensate for the insufficiency or even lack of local resources. Beyond these aspects, we retained from this analysis general descriptive elements: that the initial studies (before 2010) were essentially randomized trials [16]-[18] and cross-sectional studies [14] [15]. On the other hand, recent literature from 2010 to 2017 highlights a diversity of studies: quantitative analysis [10] or qualitative [12] [13], cross-sectional survey [19] or longitudinal (cohort study) [11] and randomized trial [9]. The selected studies mainly focused on experiments aimed at supporting knowledge production approaches in order to test the scope of the ETP in terms of utility, effectiveness and effect. The diversity of studies selected, with the small share of randomized trials, the inclusion of study protocols and field experience reports increases the risk of bias. Moreover, educational interventions show a marked heterogeneity (variability). Indeed, their content, approaches, themes and subjects of study, target audiences (especially patients) and target diseases (mainly non-communicable diseases, but also infectious dis-

eases) vary considerably. This makes it difficult to standardize educational interventions and assess their overall impact, even though some authors have reported some promising significant results, particularly regarding self-management of blood sugar in diabetics [9], self-management of non-glycemic diabetes parameters [15], self-efficacy of urinary incontinence [11] and adherence to treatment [16].

Table 2. General descriptive elements of the articles retained.

References	Language	Year	Country	Other countries	Organisation (lead author)	Partners	Article type	Study type	Study subjects	Illness	Funding
Essien [9]	English	2017	N	UK	U/R	U/R, H, PL	NA	Randomised control trial	Patients	Diabetes	PL
Nwankwo [10]	English	2015	N	I	U/R	U/R	Evaluation	Quantitative	Nurses, dieticians	Diabetes	U/R
Castille [11]	English	2015	B	BEL, F, USA, SWI	U/R	U/R, NFP	Research (Investigation)	Cohort or follow-up	Female patients	Obstetric Fistula	NFP
Odusola [12]	English	2011	N	NETH, V	U/R, OPS	U/R, H, OPS	Protocol	Qualitative	Patients, HP, IM	CVD	OPS
Juré E [13]	French	2010	B	F	U/R	U/R, H, NFP	Evaluation	Qualitative	Caregivers	HIV	NK
Gerten [14]	English	2009	N	USA	U/R	U/R, H	Pilot study	Cross-sectional	Female patients	VVF	NIDDKD
Kolawole [15]	English	2009	N		U/R	U/R, H, NFP	Evaluation	Cross-sectional	Patients	Diabetes	NK
Agara [16]	English	2007	N	UK	H	H	NA	Randomised control trial	Patients	Psychotic disorders	No funding
Thiam [17]	English	2007	S	E (UK), F	U/R, HProg	U/R, HProg, HD (H)	NA	Randomised control trial	Patients	Tuberculosis	French Ministry of Research (PAL+)
Oladepo [18]	English	1996	N		U/R, OPS	U/R, H, OPS	NA	Randomised control trial	Patients	Onchocerciasis	OPS
Abrogoua [19]	French	2015	CI		U/R	U/R, H	Evaluation	Cross-sectional	Patients	CVD	NK
Besançon [20]	French	2016	M	F	NFP	NFP, U/R, H	Report	NA	Patients	Diabetes	OPS
Iguenane [21]	French	2007	S	F	NFP	NFP, H, U/R, TPEP, PL	Evaluation	Qualitative documentary	NA	HIV	NK
Debussche [22]	French	2015	M	F	U/R, H	NFP, U/R, H	Evaluation	NA	NA	Diabetes	NK

Continued

Ndour Mbaye [23]	French	2015	S	F, SWI	H	NFP, U/R, H	Report	NA	Population s, patients, HP	Diabetes	OPS
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Note: N = Nigeria, B = Benin, S = Senegal, CI = Côte d'Ivoire, M = Mali, UK = United Kingdom, I = India, BEL = Belgium, F = France, USA = United States of America, SWI = Switzerland, NETH = Netherlands, V = Vietnam, E = England, U/R = university/research institute, H = hospital, PL = pharmaceutical laboratory, NFP = NFP organisation (NGO), OPS = other private structure, HProg = health programme, HD = health district, TPEP = TPE programme, NIDDKD = National Institute of Diabetes and Digestive and Kidney Diseases, CVD = cardiovascular disease, VVF = vesicovaginal fistula, HIV = human immunodeficiency virus, HP = health professionals, IM = insurance managers, NA = not applicable, NK = not known.

3.2. Components of the Educational Process Targeted

The equations elements of the educational process were identified in twelve of the articles [9] [11]-[20] [23]. Two of these made reference to a preliminary assessment or educational diagnosis [13] [19], which involved an analysis of family dynamics using a genogram [13] and an assessment of knowledge to explore the cognitive dimension [19]. None of the articles looked at the negotiating educational objectives stage. Ten of the articles discussed the educational intervention itself [9] [11] [12] [14]-[18] [20] [23], and five looked at the essential stage of outcome evaluations [9] [11] [15] [16] [18]. The articles that did not address any of the stages of the educational process did provide useful information in terms of nurses' and dieticians' perceptions on diabetes self-management education (DSME) [10], evaluative approach of TPE programmes for patients living with HIV [21] and lessons learned from educational interventions conducted [22].

3.3. Objectives of the Studies and Educational Interventions

The studies conducted covered a number of objectives, namely comparing an intervention to a usual procedure [9] [18], evaluating the feasibility and/or efficacy of an intervention [12] [17], evaluating the effect of an educational action [11] [15] [16], evaluating the usefulness and/or feasibility of a tool in the educational process [13,14], evaluating health workers' perceptions of an educational programme [10], carrying out an initial assessment of patients' knowledge [19], reporting the results of educational actions carried out [20], evaluating the integration and implementation of TPE in the management of patients [21], identifying the barriers and facilitators to developing TPE [22] and presenting an assessment of the pilot phase of the mDiabetes programme [23]. The mDiabetes programme here refers to the implementation in Senegal of the global programme 'Be He@lthy, Be Mobile', which was launched jointly by the WHO and the International Telecommunication Union. It involves the use of mobile phones to improve the prevention and management of non-communicable illnesses like diabetes [23]. The objectives of the educational interventions were self-management [9] [11] [14] [20] [23], adherence [12] [16]-[18] [23], self-care [18] [23], self-efficacy [11], prevention [18] and knowledge [14].

3.4. Description of the Educational Interventions (Table 3)

Table 3. Descriptive elements for the pedagogical methodologies of the educational interventions.

(a)

References	Educators	Contents (themes)	Sessions						Total duration
			Methods	Materials	Locations	Type	Number	Duration	
Essien [9]	N, D	1) diet and nutrition, 2) adherence to treatment, 3) physical activity, 4) foot and skin care, 5) self-monitoring of blood sugar, 6) smoking cessation, 7) monitoring of blood pressure and cholesterol levels	1) Presentations and group discussions focused on basic educational elements, 2) Interactive sessions	Use of videos and pamphlets	Hospital	Group sessions (6 - 8 participants per session)	12 (1 session/15 days)	2 hours	6 months
Nwankwo [10]	NA	NA	NA	NA	NA	NA	NA	NA	NA
Castille [11]	N	Educational activities followed: 1) Recommended postures and movements (permitted), 2) Prohibited postures and movements (to be avoided)	Home visits	Use of videos and pamphlets	Home	Individual sessions	3 (1 session at 3, 6 and 12 months)	NK	1 year
Odusola [12]	N	1) Treatment objectives, 2) Treatment compliance, 3) Nutrition and diet, 4) Weight reduction, 5) Sodium intake reduction, 6) Patient perceptions of cardiovascular risk factors and treatment (cultural and specific aspects)	NK	Information leaflets and audiovisual documents	Hospital	Group sessions	3 sessions	NK	12 months

Continued

Juré E [13]	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gerten [14]	NK	1) Causes, 2) treatment, 3) prevention of vesicovaginal fistulas	NK	Educational booklets on VVF	Hospital	NA	NA	NA	NK
Kolawole [15]	HP, DE	NK	NK	Training manual	Hospital	Group sessions	At least 12 (1/month)	1 - 2 hours	1 year minimum
Agara [16]	CP, SW, Ther, PN, Psy	1) Characteristics of the disorder, 2) Treatment options available for the disorder, 3) Cultural aspects of the disorder, 4) Psychosocial aspects and stigmatisation, 5) Duration of treatment	1) Reading of each patient's file 2) Presentation 3) Interactive Forum	NK	Hospital	Group sessions	At least 4 (5 - 8 participants per session)	NK	9 months

Note: N = nurse, D = doctor, HP = health professional, DE = diabetes educator, CP = clinical psychologist, SW = social worker, Ther = therapist, PN = psychiatric nurse, Psy = psychiatrist, VVF = vesicovaginal fistula, NK = not known, NA = not applicable.

(b)

References	Educators	Sessions							Total duration
		Contents (themes)	Methods	Materials	Locations	Type	Number	Duration	
Thiam [17]	N, HCA, CHW	1) Patient information on the illness and treatment (nurses), 2) Supervision of daily medication intake (nurse at the beginning and then caregiver), 3) fortnightly allocation of medication (caregivers), 4) Encouragement of continued treatment in cases of adverse reactions (CHW)	NK	NK	Hospital, home	NK	NK	NK	8 months
Oladebo [18]	NK	1) Subcutaneous nodules, 2) Leopard skin, 3) Severe itching 4) Blurred vision	Local dissemination of messages	posters, hand-held megaphones, town criers	Public places (places of worship, market)	NA	NA	NA	1 week
	Members of CBOs			NK	CBO meetings	NA	NA	NA	1 week
Abrogoua [19]	NA	NA	NA	NA	NA	NA	NA	NA	NA

Continued

Besaçon [20]	PPE	1) Learn how to manage cardiovascular risk, 2) Learn how to manage physical activity, 3) Learn how to manage fats in diet, 4) Learn how to manage insulin use	Peer learning	Educational booklets	NK	Group sessions (groups of 10 patients)	3 full cycles of education	NK	1 year
Iguenane [21]	NA	NA	NA	NA	NA	NA	NA	NA	NA
Debussche [22]	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ndour Mbaye [23]	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: N = nurse, HCA = healthcare assistant, CBO = community-based organisation, CHW = community health worker, PPE = Patient Peer Educator, NK = not known, NA = not applicable.

The number of descriptive elements provided ranged from between three [14] and nine [9]. Our analysis of the descriptive elements of the educational interventions revealed that only one article reported on all the elements [9]. The most frequently reported were participants' professions or identities [9] [11] [12] [15]-[18] [20], session content [9] [11] [12] [14] [16]-[18] [20], session location [9] [11] [12] [14]-[18] and intervention duration [9] [10] [12] [15]-[18] [20]. The duration of the educational sessions was the least reported element [9] [15]. The educators were generally nurses [9] [11] [12] [16]. The activities reported were rarely part of a multidisciplinary approach [16], and they rarely involved patients as peer educators (*i.e.*, patients trained to deliver educational sessions) [20]. Hospitals were the main venues for the educational sessions [9] [12] [14]-[17], which were delivered more in group [9] [12] [15] [16] [20] than in one-to-one [11] contexts.

3.5. Evaluation Results (Table 4)

Table 4. Results of the studies and educational interventions.

References	Study results	Educational intervention outcomes
Essien [9]	This DSME intervention was more effective than the usual procedure. Statistically ($P < 0.0001$) and clinically significant difference, with participants in the intensive education group averaging -1.8 HbA1c (95% CI: -2.4 to -1.2) lower than participants in the conventional education group	This DSME intervention (structured programme) contributed to better blood sugar self-management in diabetics (improved blood sugar control). As a result, it helped to improve diabetes management, reduce the frequency of complications and lower associated costs through the acquisition of self-care skills.

Continued

Nwankwo [10]	The nurses and dieticians had a positive perception of DSME in terms of its contribution to reducing diabetes complications, but they lacked skills and resources.	NA
Castille [11]	This physiotherapy and health education programme maintained results one year after obstetric fistula surgery.	This programme contributed to better self-management through self-efficacy of urinary incontinence. This had a beneficial effect on residual stress incontinence and improved quality of life.
Odusola [12]	NA	NA
Juré E [13]	The genogram was a useful educational diagnostic tool in the collection of information among children living with HIV. It allowed the researchers to investigate family and community dynamics and to analyse the family structure. They were also able to identify filiations, breakdowns in relationships and transgenerational weaknesses linked to either social problems, the onset of an illness or other types of family events. The genogram also allowed the researchers to select resource people for the children and determine the care skills to be mobilised within the families.	NA
Gerten [14]	This pilot study demonstrated that the use of an educational booklet had the capacity to educate women on the causes, treatment and prevention of VVF.	NA
Kolawole [15]	This structured group education programme was more effective than the usual procedure. There was a statistically significant difference for all the parameters studied. Beneficial effects were observed at the level of various non-glycaemic parameters.	A better self-management of the non-glycaemic parameters of diabetes in diabetics was noted. This was evidenced by a higher level of knowledge of diabetes, better compliance with treatment, a higher satisfaction level and greater use of monitoring devices.
Agara [16]	GPE was an effective intervention in the management of neuropsychiatric illnesses.	GPE improved compliance with treatment and adherence to scheduled patient appointments
Thiam [17]	This intervention programme, which was based on improved patient counselling and communication, decentralisation of treatment, choice of DOT strategy and strengthening of supervision activities, was found to improve patient outcomes compared to the usual procedures. This approach can be generalised within the context of tuberculosis control programmes in resource-limited countries.	NA
Oladebo [18]	Both educational methods (social networks, information media) proved disappointing. Neither intervention was effective in increasing the number of patients attending onchocerciasis screening or seeking treatment or in improving compliance with treatment.	Neither method significantly increased the number of people attending screening or seeking treatment or improved patients' compliance with treatment.

Continued

Abrogoua [19]	Patients had little knowledge of the key elements of therapeutic follow-up for AVK. While the majority were aware of the different aspects of treatment and compliance (81.25%) and followed the precautions and instructions they were given (75%), only 43.75% of patients were aware of the different elements of treatment monitoring.	NA
Besançon [20]	NA	NA
Iguenane [21]	NA	NA
Debussche [22]	1) Conducting TPEP was both feasible and reproducible in Africa and the Indian Ocean. 2) Multi-professionalism during the design and structuring stages of the interventions made it possible to optimise access to TPE and the care pathway in limited-resource contexts. 3) The structuring of TPE and adapted training made it possible to involve field professionals and peer educators. 4) Adaptation to cultural and linguistic contexts was essential, as was integration into existing care policies and organisations. 5) Coupling TPEP with mixed research methods was beneficial to the intervention.	NA
Ndour M [23]	This assessment of the pilot phase of the mDiabetes programme in Senegal showed the feasibility of such a programme in limited-resource countries. This programme contributed to the fight against diabetes through its four complementary intervention areas (mAwareness for the population, mEducation for diabetic patients, mTraining for health professionals and mDiabeticfoot for the technical aspects relating to the dissemination of messages).	NA

Note: DSME = diabetes self-management education, HbA1c = glycated haemoglobin, HIV = human immunodeficiency virus, VVF = vesicovaginal fistula, DOT = directly observed therapy, GPE = group psychoeducation, AVK = Antivitamin K, TPE = therapeutic patient education, TPEP = TPE programme, NA = not applicable.

An analysis of the results from the different studies showed that only the two educational methods based on social networks and information media [18] failed to produce satisfactory results in terms of efficacy. The study carried out among nurses and dieticians revealed that these two professional groups perceived diabetes self-management education (DSME) to be contributing to a reduction in complications from diabetes [10]. The educational diagnosis study [19] noted little or no knowledge among patients of the key elements of therapeutic follow-up for antivitamin K treatment (AVK). An analysis of the interventions carried out in Africa (Burundi, Botswana and Mali) and in the Indian Ocean (Mauritius, Réunion and Mayotte) revealed the barriers and facilitators to developing therapeutic education actions [22]. Educational interventions have contributed not only to

better self-management of blood sugar [9] and non-glycaemic parameters in diabetics [15] and of urinary incontinence following obstetric fistula surgery through self-efficacy [11] but also to an improvement in patients' adherence to treatment and appointments [16]. The two educational methods based on social networks and information media [18] failed to increase the number of patients attending onchocerciasis screening and seeking treatment and did not contribute to improving compliance with treatment.

3.6. Other Aspects Addressed

Three articles [10] [21] [22] in this literature review did not address any of the components or stages of the educational process. However, they did provide useful information. The study of nurses' and dieticians' perceptions identified barriers to the implementation and deployment of DSME in south-eastern Nigeria and proposed a strategic investment in human and material resources for an effective DSME intervention [10]. The study on the implementation of TPE programmes for patients living with HIV in four limited-resource countries, including Senegal, set out a protocol for evaluating TPE programmes [21]. In terms of promoting access to TPE and reducing inequalities, the study analysing interventions carried out in Africa (Burundi, Botswana and Mali) and the Indian Ocean (Mauritius, Réunion and Mayotte) revealed barriers and facilitators to developing TPE activities [22].

4. Discussion

4.1. Explanation for Findings in This Systematic Review

This literature review confirms that, despite the copious medical literature on clinical studies of therapeutic education reported by Lager *et al.* [24], there has been very little research conducted on TPE in West Africa to affirm its scientific validity. Aantjes *et al.* [25] also noted a lack of literature on self-management interventions for people diagnosed with HIV. Our results highlight the need to identify the obstacles to the production of scientific data on patient education practices in West Africa. The literature on patient education in West Africa comes primarily from English-language journals. This observation was also made by Heyden *et al.* [26] in their literature review on home education for patients in Belgium. With an increasing number of francophone African researchers [11] [17] now publishing their scientific articles in English (as is the case with this review), Hamel [27] noted that the scientific community finds itself at a transition point between reduced multilingualism and the total monopoly of English. In fact, researchers, whose scientific capital depends on the potential audience, tend to maximize the impact of their studies by publishing in English journals [28]. Moreover, as already discovered by Heyden *et al.* [26], the literature reported in this review comes mainly from academic publications. This could mean that very few non-academics relate their experiences on the ground of collaborative educational activities with hospital teams. The importance of multidisciplinary action carried out within

the framework of a partnership dynamic is therefore recognised. However, as Dreux and Blanchet [29] pointed out, it will be essential to ensure that the implementation of TPE programmes is not too complex and restrictive so that they are not limited to just a few specialised structures. This literature review has also revealed that the educational activities carried out rarely received financial support from national structures [12] [14]. This is an obstacle to the deployment of TPE in West Africa. It is important that funding for TPE activities and programmes in each country is guaranteed by a national fund or by the state budget with the support of national and international partners. This will make it possible to assemble and identify all the national, international, public and private funding sources allocated to the design, coordination, implementation and evaluation of TPE programmes and training. From this perspective, francophone countries generally limited to a single partner country (France) must diversify their partners in the same way that Nigeria, with its multiplicity of partners (European, American and Asian), does, since this is essential for the deployment of TPE.

While the articles in this review were all recent, published mostly from 2010 onwards [9]-[13] [19] [20] [22] [23], the concept of TPE is not a new one. In 1986, in the journal *Patient Education and Counseling*, Bartlett cited Par Tourette-Turgis C and et Thievenaz J [4] retraced the origins of patient education to Philadelphia in the USA with the creation of the first tuberculosis prevention society in 1892. However, it was not until 1998 that the WHO [30] defined it as a process for helping patients to acquire or maintain the skills they need to manage their lives as well as possible. Diabetes, the classic disorder requiring an educational management approach, was the most targeted illness in the articles [9] [10] [15] [20] [22] [23]. In France, it is the leading TPE programme authorised by the “Agences Régionales de Santé” (Regional health agency). This confirms, as Gagnayre *et al.* [31] pointed out, that diabetes is a complex disease, which mobilises a number of skills repertoires in the patient and consists in mentally palliating the disruption of an endocrine function. **Table 2** reveals that only one article referred to caregivers [13], in this case parents of children living with HIV. While TPE is patient-centred, the involvement of family and friends should lead to educational sessions that best correspond to patients’ support needs. Indeed, in the African context, HIV remains a collective and family affair. Family solidarity is both real and polymorphic for patient management in Africa, potentially combining material, economic, psychological and caregiving support [32]. The therapeutic itinerary followed is not therefore always the one desired by the patient themselves, but it has very often been decided on by their family or support network [33]. Consequently, in the context of TPE, the involvement of family and friends (family in particular) deserves special consideration if educational interventions are to be successful.

To be effective, patient education must meet quality criteria and must therefore follow a structured approach. Like any field dealing with health practices, it has to be the subject of a structured research effort to continuously improve efficacy, efficiency and equity [34]. However, none of the articles in this review focused on

all four stages of the educational process. Furthermore, none examined the stage in which educational objectives are negotiated through the definition of a care plan, personalised programme or educational contract. We are therefore left wondering, like Heyden *et al.* [26], whether these studies have actually dealt with the concept of patient education involving a structured and planned approach to the care of patients with chronic illnesses. Our analysis of these articles also showed that there was little description of any educational interventions [9] [11] [12] [14]–[18] [20] [23], which represented the most frequently reported stages of the educational process. Only one study [9] provided a pedagogical methodology that would allow the educational sessions to be reproduced. Given this lack of detailed description, it is difficult to link efficacy with the type and quality of the interventions carried out [24], although, with the exception of one intervention [18], the efficacy of patient education was clearly demonstrated [9] [11] [15] [16]. So, could this efficacy be linked to a basic level of knowledge [24] or even a total lack of knowledge at the control group level or perhaps to an absence of control groups altogether? Could it be linked to the educators (represented mainly by nurses) or to the fact that the educational sessions were mainly located in hospitals? Despite the results obtained, however, it is important to stress that any educational process requires a quality approach [2] that takes into account not only the interventions of the main actors in patient education (including patient involvement) but also the teaching materials, methods and tools mobilised in patient education. The scant descriptions of the interventions also prevent us from defining an educational practice that no doubt shares similarities with educational practices in developed countries but which probably also highlights divergences and specificities. Finally, this review found that psychosocial competencies were not formulated or measured during the evaluation of educational interventions. Indeed, Fonte *et al.*'s [35] literature review showed that, in general, interventions place more emphasis on physiological outcomes and compliance with self-care instructions than on psychological variables.

4.2. Limitations and Strengths of the Study

The inclusion of articles available only online may have limited the exhaustiveness of this literature review. There may have been studies carried out in West Africa that we were not aware of (e.g., studies published in local non-indexed journals). However, the use of four large databases, including PubMed and BDSP, mitigated this limitation. Our review was limited to papers published in English and French. A systematic review of studies published in the Portuguese language is also needed to exclude potential bias. Indeed, West Africa has 15 countries, including eight French-speaking countries, five English-speaking countries and two Portuguese-speaking countries (Cape Verde, Guinea-Bissau). However, within an international context leading to a gradual “anglicization” of scientific publications, access to articles by researchers from these two Portuguese-speaking countries in English journals seems likely. Furthermore, this review presents strengths including the inclusion of studies covering various West African contexts and the use of a systematic method-

ology in line with PRISMA recommendations to ensure the reliability of the evidence and the validity of the synthesized results. Indeed, the editorial team followed guidelines corresponding to the recommendations used by other researchers to improve the quality and methodology of their scientific journals [36]-[38].

4.3. Implications for Patient Education Policy and Future Research

The formulation and implementation of appropriate patient education policies and programmes in West Africa should be based on the results of scientific research. As indicated by Aantjes [21], established educational practices for the long-term support of patients with chronic diseases are still the most valid basis for promoting patient education. This will be the case until there are more studies that assess those practices and their effect (improving quality of life, reducing expenditures, reducing complications and hospitalizations, improving compliance) and other studies which assess specific chronic care models adapted to West African context. To this end, it is important that researches provide the elements adapted to the local context for assessment and optimization of educational actions implemented in bioclinical, psychosocial and pedagogical fields. Researches apprehending patients with chronic diseases must be considered. Lastly, research in the field of health literacy must also be developed to assess the potential benefits in TPE practice.

5. Conclusion

This literature review on therapeutic education of the patient is marked by the predominance of experiences in English-speaking countries and the limited availability of studies and articles on the West African experience in this field. It highlighted the need to address the challenges that lie in demonstrating its medico-economic effectiveness, documenting its impact on biological health, Clinical and psychological aspects of patients, and the integration of patients' experiential knowledge into a rigorous scientific approach in the face of the diversity of approaches and subjects covered by studies and articles. However, it helps to fill an important gap that existed: the low availability of data on ETP in West Africa or the difficulties of access to research work on ETP in West Africa. Also, researchers in education will find research themes, both in terms of content and methodology.

Ethical Approval

This article does not contain any studies with human participants and therefore does not require ethical approval.

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Author Contributions

Konan, Y.E. and Kivits, J. conceived and designed the study. They were also independent researchers responsible for selecting articles. The other authors read the first draft and provided comments. All authors read and approved the final version of the manuscript. Guillemin supervised the research work.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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