



# State of the Art of Patient Therapeutic Education in Morocco: A Systematic Literature Review

Maha El Habchi<sup>1,\*</sup> , Abdelghani Elouardi<sup>1</sup>, Yassine El Aatik<sup>1</sup> and Kamal Doghmi<sup>2</sup>

<sup>1</sup>Research Laboratory of Psychiatry, Medical Psychology and History of Medicine, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat 10100, Morocco

<sup>2</sup>Department of the Clinical Hematology, Military Hospital Mohammed V 10045 Rabat / Mohammed V University, Rabat 10100, Morocco

## Abstract:

**Introduction:** This article examines the current state of Therapeutic Patient Education (TPE) in Morocco through a systematic literature review. With the rising prevalence of chronic diseases in the country, TPE is pivotal in aiding patients to manage their conditions and treatments, thus enhancing their quality of life. Despite the efforts of Moroccan authorities to promote TPE, its utilization remains largely constrained, partly due to the lack of structured programs and accessible data.

**Objective:** In this manuscript, we explore the current state of existing TPE, focusing on various therapeutic education interventions for patients in Morocco. This study aims to enhance public health policies and practices in Morocco by exploring existing TPE interventions.

**Results:** The systematic review analyzed 11 studies from 2010 to 2024. Recommendations from the World Health Organization (WHO) and other relevant bodies could facilitate the integration of TPE into healthcare systems. However, challenges persist, including region-specific obstacles in Morocco and the need for enhanced training of healthcare professionals.

**Conclusion:** This systematic review underscores the importance of investing in TPE and offers insights into research, clinical practice, and health policies in Morocco. Despite its potential, sustained attention and further efforts are necessary to ensure the comprehensive integration of TPE into Moroccan healthcare settings.

**Keywords:** Therapeutic education, Quality of life, Chronic disease, Public health, Self-management, Observance.

© 2024 The Author(s). Published by Bentham Open.

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International Public License (CC-BY 4.0), a copy of which is available at: <https://creativecommons.org/licenses/by/4.0/legalcode>. This license permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

\*Address correspondence to this author at the Research Laboratory of Psychiatry, Medical Psychology and History of Medicine, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat 10100, Morocco;  
E-mail: maha\_elhabchi@um5.ac.ma

Cite as: El Habchi M, Elouardi A, El Aatik Y, Doghmi K. State of the Art of Patient Therapeutic Education in Morocco: A Systematic Literature Review. Open Public Health J, 2024; 17: e18749445333873.  
<http://dx.doi.org/10.2174/0118749445333873240730040519>



Received: June 15, 2024  
Revised: July 10, 2024  
Accepted: July 24, 2024  
Published: August 19, 2024



Send Orders for Reprints to  
[reprints@benthamscience.net](mailto:reprints@benthamscience.net)

## 1. INTRODUCTION

Over the past decade, therapeutic patient education (PTE) has gradually taken root within healthcare systems worldwide. Defined by the World Health Organization (WHO) [1] as “a set of activities aimed at empowering patients with the skills and attitudes necessary to better manage their lives with their illness and treatment,” PTE

aims to assist patients and their families in better understanding their condition and treatment. This empowers them to gain autonomy and improve their quality of life in the face of illness.

The implementation of PTE in the healthcare system aims to improve the health and quality of life of patients with chronic diseases, including progressive chronic

diseases and non-communicable diseases (NCDs) [2]. In Morocco, as in many other countries, the incidence of chronic diseases is increasing, posing significant challenges to the healthcare system [3, 4]. According to the 2018 National Survey on Population and Family Health (NSPFH), approximately 21% of the Moroccan population is affected by at least one chronic disease, a figure expected to continue rising with population aging [5].

The ongoing demographic and epidemiological transition in Morocco is resulting in a significant increase in the burden of morbidity and mortality related to chronic diseases, such as cardiovascular diseases, diabetes, cancers, and chronic respiratory conditions [6]. These diseases now represent a significant portion of the disease burden in the country, with considerable social, economic, and public health consequences.

Despite the provisions of Articles 7 and 12 of the law on the healthcare system and provision of care dating back to 2011 [7], as well as Royal directives [8], and the state's commitment to a healthcare system revolution based on principles of equity, solidarity, individual and collective accountability, and quality of care to promote a more inclusive and preventive healthcare system, PTE remains largely underutilized in the country. The absence of structured patient education programs and lack of available data are major obstacles to the effective management of chronic diseases in Morocco.

Faced with these challenges and the observation that Morocco currently lacks any structured PTE programs and limited data are available on the subject, the objective of this literature review is to explore the current state of existing PTE by focusing on the crucial roles of doctors and nurses in the implementation of patient education. Hence, this study aims to provide valuable insights to enhance public health policies and practices in the country.

## 2. METHODS

### 2.1. Search Strategy

This systematic review was conducted following the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) [9]. A comprehensive search was conducted in various electronic databases, such as PubMed, ScienceDirect, Google Scholar, and Cochrane, using relevant keywords such as "therapeutic education," "Morocco," "adherence," and "self-management." The Boolean operators AND and OR were used to combine these keywords to refine the search and obtain the most relevant responses (Table 1). These searches were also supplemented by the bibliography of the articles analyzed in full text.

### 2.2. Search Criteria

The goal of this study is to include the most recent literature covering the period from 2010 to 2024, focusing on the current state of TEP in Morocco in English and French.

**Table 1. Keywords and boolean operators used in different databases.**

<b>Pubmed</b>	("therapeutic education" OR "patient education" OR "self management" OR "education of patient" OR "observance") AND ("Morocco")
<b>Cochrane</b>	ALL TEXT: ("therapeutic education" OR "patient education" OR "self-management" OR "education of patient" OR " observance")AND ("Morocco")NOT school NOT student
<b>Science direct</b>	- English: (("therapeutic education" OR "patient education" OR "education of patient" OR "Morocco")AND ("Morocco") NOT school NOT student)) (review articles et research articles) - French: ("éducation thérapeutique" AND (Maroc) NOT école NOT étudiant (review articles andresearch articles))
<b>Googlescholar</b>	"éducation thérapeutique du patient" AND Maroc 1. "éducation thérapeutique" AND patient AND Maroc 2. ("éducation thérapeutique du patient" OR "observance") AND Maroc "Therapeutic patient education" AND Morocco "Therapeutic education" AND patient AND Morocco ("Therapeutic patient education" OR "observance") AND Morocco

### 2.3. Inclusion and Exclusion Criteria

The studies were selected based on predefined inclusion and exclusion criteria. Inclusion criteria included the publication period (2010-2024), language (English and French), peer review of articles, and relevance to the practice of ETP in Morocco. Exclusion criteria applied to publications before 2010, articles not written in English or French, those not peer-reviewed, and studies irrelevant to the specific topic.

All articles found through the mentioned search engines were referenced using the Zotero bibliographic management software.

### 2.4. Study Selection and Data Extraction

The study selection process, including the number of studies screened, those assessed for eligibility, and those included in the review, is presented in a flow diagram following PRISMA guidelines [9]. After an initial screening based on titles and abstracts, the authors independently evaluated full texts based on inclusion and exclusion criteria, and discrepancies were resolved through discussion and consensus, with the option of involving a third arbitrator if needed (Fig. 1).

### 2.5. Quality Assessment

Each selected study was subjected to a rigorous assessment to evaluate its methodological robustness and risk of bias. This process ensured the reliability and validity of the synthesized results from the selected studies. Any disagreements between assessors were resolved through discussion.

### 2.6. Data Synthesis

Data from the selected studies were extracted and synthesized to provide a comprehensive overview of the current state of PTE in Morocco. This synthesis was accompanied by a thematic analysis to identify common themes and patterns emerging from all studies (Table 2).

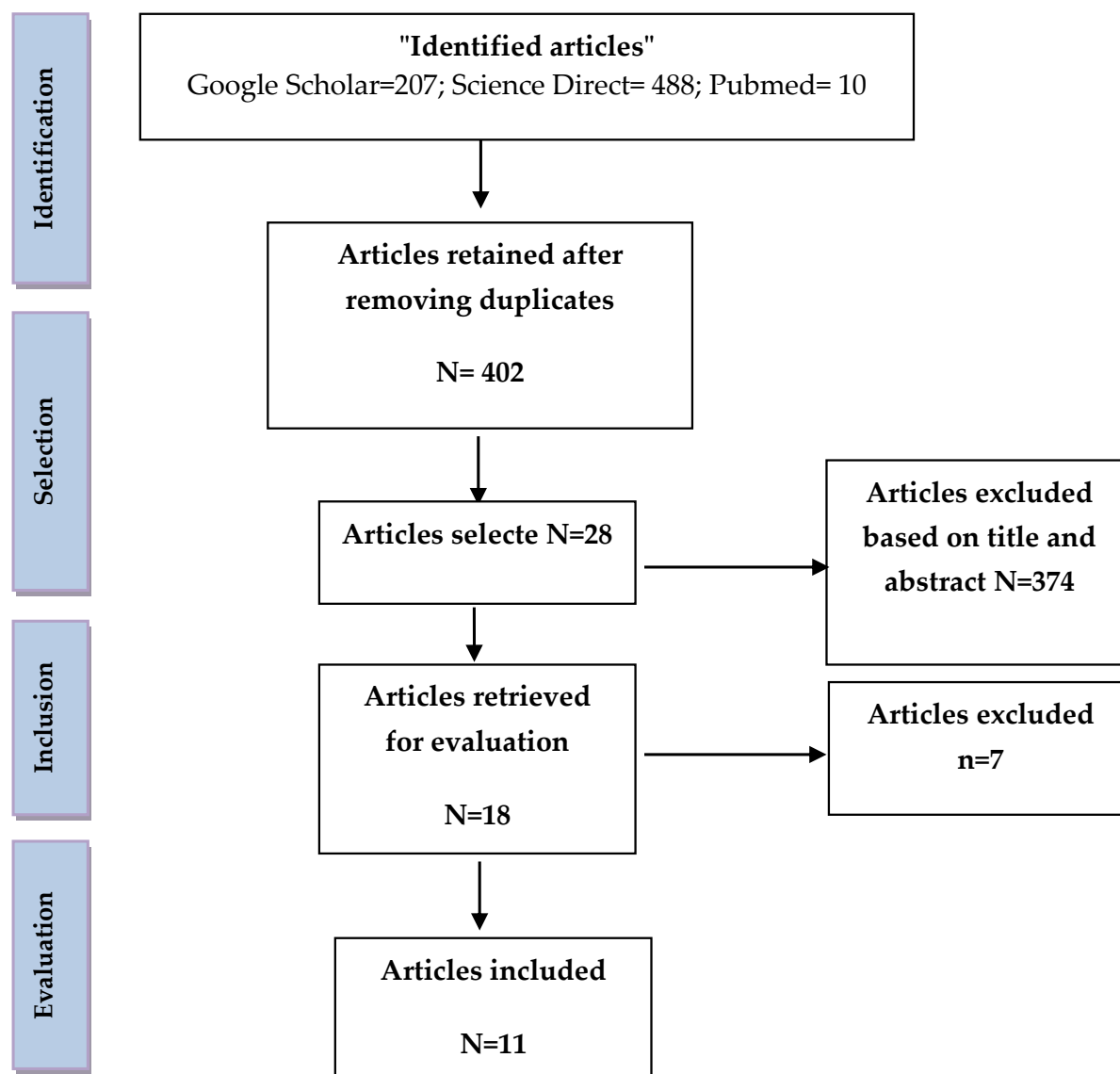


Fig. (1). Flowchart of selected articles according to PRISMA 2020 recommendations.

Table 2. Thematic synthesis and recurring motifs throughout the studies.

Author	Year	City	Study Type	Sampling	Objective	Specialty
H. lamiaa <i>et al.</i> [10]	2012	Casablanca	Prospective	100	Identify the main obstacles influencing medication adherence among type 2 diabetic patients on OADs and their role in glycemic control.	Diabetes
S. laidi <i>et al.</i> [11]	2017	Casablanca	Prospective	190	Evaluate the effect of pre-Ramadan therapeutic education on the decision to fast.	Diabetes
F. El alami <i>et al.</i> [12]	2021	Casablanca	Prospective observational and descriptive	193	- Estimate the adherence rate to medical treatment among glaucoma patients. - Study the factors contributing to poor adherence. -Determine the significance and consequences of improper eye drop instillation.	Ophthalmology
N. amraoui <i>et al.</i> [13]	2015	Fès	Cross-sectional	200	-Assess adherence among patients undergoing dermatology treatment. - Investigate factors associated with poor adherence.	Dermatology

(Table 4) contd....

Author	Year	City	Study Type	Sampling	Objective	Specialty
Z. abouzid <i>et al.</i> [14]	2023	Rabat	Prospective	211	Evaluate the value of patient education in acquiring knowledge regarding chronic kidney disease (CKD) and renal replacement methods, as well as in guiding towards personalized therapeutic choices.	Nephrology
I .Bentaleb <i>bold&gt;et al.</i> [15]	2022	Salé	Randomized clinical trial	80	Evaluate the effectiveness of patient education programs on the knowledge and safety skills of patients with rheumatoid arthritis (RA) under biologic therapy and assess its effectiveness on disease activity and quality of life.	Rhumatologie
R. El harraqui <i>et al.</i> [16]	2014	Oujda	Prospective interventionnel	93	Determine the prevalence and risk factors for hypertension among chronic hemodialysis patients and attempt to reduce them by implementing a therapeutic education strategy.	Hypertension
A .Elyacoubi <i>et al.</i> [17]	2013	Marrakech, Tiznit, Laâyoune and Boujdour	Prospective	199	Implement an interactive educational workshop focused on diabetic foot care and evaluate its effectiveness.	Diabetes
N. Nezha <i>et al.</i> [18]	2022	Essaouira	Observational	78	Study the practice of patient education.	Asthma
M. Najoua <i>et al.</i> [19]	2022	Maroc	Guide	N/A	Training course proposal aimed at assisting educators in acquiring useful French language skills, enabling them to attain the required linguistic proficiency to succeed in their actions.	Diabetes
Doubi <i>et al.</i> [21]	2014	Fès	Cross-sectional	100	Determine diabetic patients who have benefited from therapeutic education.	Diabetes

### 3. RESULTS

#### 3.1. Reference Selection

A total of 981 studies were identified through database searches. Of these, 40 were retained and assessed in full text for eligibility, conducted independently by two reviewers. Of these 40 studies, 14 were selected and discussed until a consensus was reached. Finally, 11 references were retained for qualitative synthesis. The study selection procedure is summarized in the PRISMA flow diagram (Fig. 1).

#### 3.2. Study Settings and Patient Population

The studies were conducted in various localities in Morocco, with 03 studies in Casablanca [10-12], 02 in Fez [10-13], 02 in Rabat-Salé [14, 15], 01 in Oujda [16], one covering four southern cities (Marrakech, Guelmim, Laâyoune) [17], 01 in essaouira [18], and one covering the entire country [19]. These selected studies included patients with various chronic conditions, including diabetes (5 studies) [10, 11, 17, 19, 20], asthma (1 study) [18], hypertension (1 study) [16], glaucoma (1 study) [12], chronic kidney disease (1 study) [14], dermatoses (1 study) [13], and rheumatoid arthritis (1 study) [15].

#### 3.3. Study Types and Focus

Among the 11 selected articles, one was a methodological guide [19], and the others were empirical studies. The majority of the research focused on evaluating the effectiveness of Patient Education Programs, the practice, and interest in TEP [10-14, 17, 18, 20], ainsi, and the implementation and adoption of this practice [16, 17]. The TEP provided was mainly aimed at patients, with the exception of one study targeting educators [19]. Only one study designed and evaluated a specific program [10].

#### 3.4. Publication Trends and Study Designs

The publications spanned from 2010 to 2024, with a median in 2017. There was a gradual increase in the number of studies on patient education over time. Among these studies, one was randomized, eight were descriptive, one was observational, and one was a methodological guide.

#### 3.5. Data Extraction Table

To synthesize the data on TEP in Morocco, a data extraction table was developed from the 11 studies. This table includes the objectives of each study, its results, the target population, the specialty involved, and the nature of the study.

### 4. DISCUSSION

This systematic review highlights the importance of TEP in Morocco, emphasizing its effectiveness in improving patient outcomes. It also underscores its role in helping patients make informed decisions about their treatment and enhancing their safety. However, despite its benefits, this practice remains underutilized in the country.

TEP represents a highly effective tool for optimizing clinical outcomes in patients. Several studies listed in this systematic review [11, 17, 19-21] have shed light on the ability of this practice to promote glycemic control in diabetic individuals, reduce blood pressure in hypertensive subjects [16], and strengthen self-management skills in patients with chronic conditions [18]. Patient education regarding a chronic disease encompasses various aspects, ranging from treatments to management of complications to the impact on daily and social life. It aims to improve patients' understanding of their disease and treatment, thus enabling them to preserve their quality of life.

Scientific evidence attests that, when implemented appropriately, TEP can lead to a reduction in hospitali-

zations, acute episodes, and medical complications, while improving patients' quality of life [22, 23]. A study conducted in France [24] demonstrated that the practice of patient education in the field of type 2 diabetes and hypertension produced positive results. This practice proved beneficial in improving biological parameters and adherence to treatment prescriptions without incurring additional costs. Additionally, another study by Debaty et al [25], considers TEP a fundamental right for patients, particularly in the context of high costs associated with the treatment of chronic diseases.

Several studies have shown that patient education for self-management of diabetes has a positive impact on HbA1c levels. A meta-analysis involving 31 studies conducted by Norris *et al.* [26] on 31 studies highlights that patient education for type 2 diabetes immediately improves HbA1c levels during follow-up. Similarly, in another meta-analysis conducted in 2004, Warsi et al. [27] emphasized that diabetic patients participating in self-management education programs experience a significant decrease in their HbA1c levels. Furthermore, other studies [28-32] have revealed that improving glycemic control and managing other cardiovascular risk factors reduces the incidence of complications.

TEP proves to be an essential tool for enabling patients to make informed decisions about their treatment. A study cited in this review [16] illustrated that this approach can significantly help individuals with chronic kidney disease understand the various treatment options available to them, thus promoting informed decision-making about their care. Patients with chronic diseases, as well as their loved ones, have expressed specific knowledge acquired through their experience with the disease. They recognize the crucial importance of making their voices heard in decision-making, a dimension often underestimated and neglected [33, 34]. A patient research community (COMPARE) conducted participatory research involving 1636 patients, generating 3613 ideas related to 147 areas for improvement concerning various medical, hospital, and overall healthcare system aspects. Among these suggestions, several focused on improving the quality of communication between doctors and patients, the need for adequate information during medical decision-making, and the adaptation of treatment based on patient preferences and context [35].

The evolution of chronic disease management, in line with advances in medical knowledge about pathologies and new treatments, necessitates constant adaptation of professional practices. The patient now occupies a central position in this process, particularly due to the imperative of TEP. In the study by Bentaleb *et al.* [15], TEP demonstrated that they could improve safety-related knowledge and skills in patients on biotherapy. Chronic conditions, such as rheumatoid arthritis, with their significant physical, psychological, and social repercussions, perfectly illustrate the evolution of therapeutic modalities [36, 37]. The introduction of biotherapies for the treatment of these diseases has profoundly modified their trajectory and impact on patients. The challenges

associated with these treatments in terms of therapeutic efficacy, their complexity both in terms of administration and monitoring, and the adverse effects generated require meticulous management of these medications by both healthcare professionals and patients on a daily basis [38, 39]. It is in this context that TEP can play a preponderant role and offer the means to achieve this.

Recommendations from the HAS [40] and the National Institute for Prevention and Health Education (INPES) present various examples of skills that patients should acquire during the therapeutic education process. These skills can be grouped into three distinct categories. One of the categories includes safety skills. These skills must be acquired by the patients for safety reasons related to their disease or treatment to save their lives [41].

However, TEP remains underutilized in Morocco, requiring better training of healthcare professionals. Among the studies examined, only the one conducted by Najoua M [19] presented a guide for trainers aimed at educating diabetic patients. A problematic aspect raised by this guide is its orientation towards training in French rather than the country's native language. On the other hand, most of the studies do not describe a structured or evaluated program. Only one study proposed a complete TEP process, including all its TEP [15]. Education practice should be structured and follow a defined process based on a program that integrates knowledge, skills, material, and human resources and clearly established objectives, according to WHO guidelines 1996. It is an ongoing process that is integrated into patient-centered care [42]. A TEP program serves as a framework for implementing a personalized educational approach [40], including educational activities and tools, as well as qualified material and human resources [27, 41, 43, 44]. Many countries attach crucial importance to TEP by fully integrating them into their healthcare systems [1]. WHO Europe [45] is a reference in terms of guidelines for the development of therapeutic education. In France, the latter represents a priority objective to improve the management of chronic diseases, even being supported by laws aimed at formalizing this practice [46]. For example, the Île-de-France region has more than 900 patient education programs [47].

The successful integration of PTE into Moroccan healthcare requires additional resources and adequate training. Recommendations from the WHO and other organizations can guide this process. However, questions remain about the specific obstacles to implementing PTE in Morocco and ways to improve its integration into existing healthcare systems.

This systematic review significantly contributes to the literature by identifying and analyzing the main obstacles to implementing PTE in different regions of Morocco. By exploring specific contextual and structural barriers, such as resource constraints, gaps in the training of healthcare professionals, and challenges related to the cultural acceptability of PTE, this study provides valuable information for policymakers and practitioners.

Furthermore, our results offer practical recommendations to overcome these obstacles, such as increasing investments in the continuous training of healthcare professionals, improving access to educational resources, and raising awareness among patients and communities about the importance of PTE. By asking crucial questions about how to improve the integration of ETP into existing healthcare systems, this review paves the way for targeted future research and more effective policy interventions.

In essence, this study not only highlights current challenges but also suggests concrete action points to strengthen ETP in Morocco, thereby contributing to better patient care and improving the quality of healthcare in the country.

## 5. LIMITATIONS

This systematic review has some limitations. First, the bibliographic search was restricted to the previously mentioned databases. It is possible that other studies have been published in other databases or in languages other than French and English. Second, only studies published in peer-reviewed journals were considered in this review. It is likely that other relevant studies have emerged in the form of gray reports or conference presentations. Additionally, the WHO's definition of TEP remains relatively general, focusing primarily on its ultimate goal: "to maintain and improve quality of life." Furthermore, little information is provided on the international framework for its implementation.

## CONCLUSION

This systematic review has made a significant contribution to understanding the integration of patient education in the Moroccan healthcare system. The conclusion of this analysis has shown that this practice represents a promising approach to improving patient health outcomes. However, it is imperative to address several challenges to enable a more extensive and effective implementation of patient education.

In conclusion, this study not only provides an overview of the current challenges of patient education in Morocco but also offers practical recommendations to structure this essential practice. By contributing to a better understanding and improvement of patient education, this systematic review aims to have a lasting impact on the quality of healthcare and patient well-being in Morocco. Through this contribution, we hope to pave the way for more informed health policies and clinically relevant practices tailored to patient needs.

## AUTHORS' CONTRIBUTIONS

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

## LIST OF ABBREVIATIONS

PTE = Patient Therapeutic Education

WHO = World Health Organization

PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analyses

## CONSENT FOR PUBLICATION

Not applicable.

## STANDARDS OF REPORTING

PRISMA guidelines and methodologies were followed.

## AVAILABILITY OF DATA AND MATERIAL

All the data and supportive information are provided within the article.

## FUNDING

None.

## CONFLICT OF INTEREST

The authors declared no conflict of interest, financial or otherwise.

## ACKNOWLEDGEMENTS

Finally, the author would like to acknowledge the contributions of all those who have directly or indirectly supported this research endeavor. Their encouragement and belief in this project have been a source of motivation throughout the journey.

## SUPPLEMENTARY MATERIAL

PRISMA checklist is available as supplementary material on the publisher's website along with the published article.

Supplementary material is available on the publisher's website along with the published article.

## REFERENCES

- [1] Therapeutic patient education: Introductory guide. Available from: <https://www.who.int/europe/fr/publications/item/9789289060219>
- [2] Baudier F, Leboube G. Patient education and disease management: A potential third avenue, "French-style"? *Sante Publique* 2007; 19(4): 335-40. <http://dx.doi.org/10.3917/spub.074.0335> PMID: 17933385
- [3] Life expectancy has increased by 5 years since 2000, but health inequalities persist. 2000. Available from: <https://www.who.int/fr/news/item/19-05-2016-life-expectancy-increased-by-5-years-since-2000-but-health-inequalities-persist>
- [4] WHO lifts the veil on the main causes of mortality and disability in the world: 2000-2019. Available from: <https://www.who.int/fr/news/item/09-12-2020-who-reveals-leading-causes-of-death-and-disability-worldwide-2000-2019>
- [5] National Survey on Population and Family Health (ENPSF -2018). 2019. Available from: <https://www.unicef.org/morocco/rapports/enqu%C3%AAtation-nationale-sur-la-population-et-la-sant%C3%A9-familiale-enpsf-2018>
- [6] Launch of the national multisectoral strategy for the prevention and control of noncommunicable diseases. World Health Organization - Regional Office for the Eastern Mediterranean. Available from: <http://www.emro.who.int/fr/mor/morocco-news/lancement-de-la-strategie-nationale-multisectorielle-de-prevention-et-de-controle-des-maladies-non-transmissibles.html>

- [7] Framework law n° 34-09 relating to the health system and the provision of care. Available from: <https://www.sante.gov.ma/Reglementation/SYSTEMEDESANTEETOFFREDESAINS/la%20loi%20cadre%20n%C2%B02034-09%20relative%20au%20syst%C3%A8me%20de%20sant%C3%A9%20et%20C3%A0%20l'E2%80%99offre%20de%20soins.pdf>
- [8] Message sent by HM the King to participants in the celebration of World Health Day. Available from: <https://www.maroc.ma/fr/discours-royaux/message-adresse-par-s-m-le-roi-aux-participants-la-celebration-de-la-journee-mondiale>
- [9] The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions. Available from: <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000100>
- [10] Doubi S, Ouahabi HE, Dakkar O, Ajdi F. The evaluation of a therapeutic education program for diabetic patients in a Moroccan University Hospital Center: Preliminary results of a pilot survey. *Pan Afr Med J* 2014; 18: 258. <http://dx.doi.org/10.11604/pamj.2014.18.258.3054> PMID: 25489363
- [11] Laidi S, El Aziz S, Chadli A. Therapeutic education in pre-Ramadan: Can it change the beliefs of Moroccan diabetic patients and dissuade them from fasting? (Prospective study of 190 patients). *Metab Dis Med* 2017; 11(4): 360-5. [http://dx.doi.org/10.1016/S1957-2557\(17\)30081-0](http://dx.doi.org/10.1016/S1957-2557(17)30081-0)
- [12] Alami FE, Sidki K, Zrikem K, Mchachi A, Benhmidoune L, Chakib A. Compliance and quality of instillation of eye drops in Moroccan glaucoma patients. *Journal of the Moroccan Society of Ophthalmology* 2021; 30(2): 54-7.
- [13] Amraoui N, Gallouj S, Berraho MA, Najjari C, Mernissi FZ. Adherence to treatment in chronic dermatosis: about 200 cases. *Pan Afr Med J* 2015; 22: 116. PMID: 26848363
- [14] Abouzid Z, Sebti K, Ouzeddoun N, Bayahia R, Benamar L. Impact of therapeutic education on the choice of replacement treatment. Moroccan monocentric experience. *Nephrol Ther* 2023; 19(7): 555-67. <http://dx.doi.org/10.1684/ndt.2023.50> PMID: 38059845
- [15] Bentaleb I, Rostom S, El Binoune I, Hmamouchi I, Amine B, Bahiri R. Randomized study evaluating a therapeutic education program concerning the safety of biotherapies in patients with rheumatoid arthritis: Preliminary results at M6. *Rev Rhum* 2022; 89: A274. <http://dx.doi.org/10.1016/j.rhum.2022.10.439>
- [16] El Harraqui R, Naima A, Yassamine B, Haddiya I. Management strategy for hypertension in chronic hemodialysis: A model applied to patient education (FTE). *Pan Afr Med J* 2014; 19: 86. PMID: 25722759
- [17] Elyacoubi A, Amine M. Contribution of a therapeutic education program in improving the care of type 2 diabetics. 2013.
- [18] Nacer N, Rkha S, Ouzennou N. Therapeutic education of asthmatic patients in the province of Essaouira, Morocco. *Journal of Nursing Sciences and Health Technologies* 2022; 1(1): 6-13.
- [19] Najoua MDU. French on specific objective for the benefit of therapeutic education on diabetes - case of sanofi-aventis from Morocco - Training offer guide. 2022; 4 (10).
- [20] Lamiaa H, Chadli A, Nsame D, El Aziz S, El Ghomari H, Farouqi A. P74 Role of therapeutic compliance on glycemic balance in Moroccan type 2 diabetics. *Diabetes Metab* 2012; 38: A49. [http://dx.doi.org/10.1016/S1262-3636\(12\)71176-X](http://dx.doi.org/10.1016/S1262-3636(12)71176-X)
- [21] Doubi S, El Ouahabi H, Dakkar O, Ajdi F. Evaluation of a therapeutic education program in diabetic patients in a Moroccan university hospital: Preliminary results of a pilot survey. *Pan Afr Med J* 2014; 18: 258. PMID: 25489363
- [22] Gallois P, Vallée J-P, Le Noc Y. Therapeutic patient education - Is the doctor also an "educator"? *Medicine* 2009; 5(5): 218-24.
- [23] Ruiz J. Therapeutic support: the path to long-term follow-up. *Swiss Medical Review* 2008.
- [24] Bourgueil Y. General practitioner/nurse cooperation improves the monitoring of type 2 diabetic patients. 2008.
- [25] Debaty I, Uhlenbusch S, Robin E, Baudrant M, Benhamou PY, Halimi S. Telephone support after group outpatient therapeutic education sessions in type 2 diabetic patients: Results of a pilot study. *Metab Dis Med* 2010; 4(2): 197-201.
- [26] Norris SL, Lau J, Smith SJ, Schmid CH, Engelgau MM. Self-management education for adults with type 2 diabetes: A meta-analysis of the effect on glycemic control. *Diabetes Care* 2002; 25(7): 1159-71. <http://dx.doi.org/10.2337/diacare.25.7.1159> PMID: 12087014
- [27] Warsi A, Wang PS, LaValley MP, Avorn J, Solomon DH. Self-management education programs in chronic disease: A systematic review and methodological critique of the literature. *Arch Intern Med* 2004; 164(15): 1641-9. <http://dx.doi.org/10.1001/archinte.164.15.1641> PMID: 15302634
- [28] Pirart J. Diabetes mellitus and its degenerative complications: a prospective study of 4,400 patients observed between 1947 and 1973 (3rd and last part) (author's transl). *Diabete Metab* 1977; 3(4): 245-56. PMID: 598565
- [29] Nathan DM, Genuth S, Lachin J, *et al.* The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med* 1993; 329(14): 977-86. <http://dx.doi.org/10.1056/NEJM19930303291401> PMID: 8366922
- [30] Stratton IM, Adler AI, Neil HA, *et al.* Association of glycaemia with macrovascular and microvascular complications of type 2 diabetes (UKPDS 35): Prospective observational study. *BMJ* 2000; 321(7258): 405-12. <http://dx.doi.org/10.1136/bmj.321.7258.405> PMID: 10938048
- [31] Bauduceau B, Monnier L. Impact of new classes of antidiabetics on cardiovascular risk in type 2 diabetes. *Med Metab Dis* 2019; 13(1): 42-9. [http://dx.doi.org/10.1016/S1957-2557\(19\)30023-9](http://dx.doi.org/10.1016/S1957-2557(19)30023-9)
- [32] Bauduceau B, Bordier L. Type 2 diabetes: Hypoglycemic drugs and their cardiovascular risks. *Bull Acad Natl Med* 2017; 201(7-9): 1209-25. [http://dx.doi.org/10.1016/S0001-4079\(19\)30390-5](http://dx.doi.org/10.1016/S0001-4079(19)30390-5)
- [33] Legrain S, Roelandt JL. The power to act "empowerment" of patients questions therapeutic education and its actors. Rennes: School of Advanced Studies in Public Health (EHESP) 2018.
- [34] France Assos Santé 2018 annual activity report. 2020. Available from: [https://www.france-assos-sante.org/publication\\_document/rapport-annuel-dactivite-2018-de-france-assos-sante/](https://www.france-assos-sante.org/publication_document/rapport-annuel-dactivite-2018-de-france-assos-sante/)
- [35] Tran VT, Riveros C, Péan C, Czarnobroda A, Ravaud P. Patients' perspective on how to improve the care of people with chronic conditions in France: A citizen science study within the Compare e-cohort. *BMJ Qual Saf* 2019; 28(11): 875-86. <http://dx.doi.org/10.1136/bmjqs-2018-008593> PMID: 31015376
- [36] Sany J. Rheumatoid arthritis in adults: Current conception. *John Libbey Eurotext* 2003.
- [37] Rheumatoid Arthritis: 100 questions to better manage the disease - Arthritis Foundation. Available from: <https://fondation-arthritis.org/soutenir/boutique/livre-la-polyarthrite-rhumatoide-100-questions-pour-mieux-gerer-la-maladie/>
- [38] Nau JY. Rheumatoid arthritis: Strategies for biotherapies. *Rev Med Suisse* 2012; 8(358): 1988-9. [http://dx.doi.org/10.53738/REVMED.2012.8.358.1988\\_1](http://dx.doi.org/10.53738/REVMED.2012.8.358.1988_1) PMID: 23198655
- [39] Laurent B, Damien L, Chary-Valckenaere I, *et al.* Prognostic factors for a good therapeutic response at 6 months from the introduction of intravenous biotherapies in patients with rheumatoid arthritis. *Rev Rhum* 2020; 87: A143. <http://dx.doi.org/10.1016/j.rhum.2020.10.252>
- [40] High Authority of Health - Structuring a therapeutic patient education program in the field of chronic diseases. Available from: [https://www.has-sante.fr/jcms/c\\_601290/fr/structuration-d-un-programme-d-education-therapeutique-du-patient-dans-le-champ-des-maladies-chroniques](https://www.has-sante.fr/jcms/c_601290/fr/structuration-d-un-programme-d-education-therapeutique-du-patient-dans-le-champ-des-maladies-chroniques)

- [41] Fercot S, Fassbind E. Design and feasibility assessment of a therapeutic education educational tool for patients with chronic inflammatory rheumatism treated with biotherapy. Master Thesis, Grenoble Alpes University - UFR Pharmacy 2010.
- [42] Therapeutic education of the patient Introductory guide. Available from:  
<https://iris.who.int/bitstream/handle/10665/376404/9789289060875-fre.pdf?sequence=1&isAllowed=y>
- [43] Nahmiash A, Bertrand E, Roupret-Serzec J, *et al.* A priori risk management of a therapeutic education program for cancer patients at home: Concept and functional analysis. *Ther Patient Educ* 2012; 4(2): S409-18.  
<http://dx.doi.org/10.1051/tpe/2012013>
- [44] Rowier A, Aurélie J. Creation and implementation of educational materials in a context of strengthening the dynamic of therapeutic patient education in the hematology department at CHR Liège. 2020. Available from: [lib.uliege.be](http://lib.uliege.be)
- [45] Therapeutic patient education (TPE). High Authority of Health. Available from:  
[https://www.has-sante.fr/jcms/c\\_1241714/fr/education-therapeutique-du-patient-etp](https://www.has-sante.fr/jcms/c_1241714/fr/education-therapeutique-du-patient-etp)
- [46] Grenier B, Bourdillon F, Gagnayre R. The development of therapeutic education in France: Public policies and current care offers. *Sante Publique* 2007; 19(4): 283-92.  
<http://dx.doi.org/10.3917/spub.074.0283> PMID: 17933380
- [47] Therapeutic Patient Education Programs (ETP) and ETP resource platforms supported by the Agency. 2024. Available from:  
<https://www.iledefrance.ars.sante.fr/programmes-deduction-therapeutique-du-patient-etp-et-plateformes-ressources-en-etp-portes-par>