



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

Maha El Habchi^{1,*} , Abdelghani Elouardi¹, Yassine El Aatik¹ and Kamal Doghmi²

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

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

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*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, 10100 Rabat, Morocco; E-mail: maha_elhabchi@um5.ac.ma

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PRISMA 2020 CHECKLIST

Section and Topic	Item #	Checklist Item	Location where Item is Reported
TITLE			-
Title	1	State of the Art of Patient Education in Morocco: A Systematic Literature Review	1
ABSTRACT			-
Abstract	2	Title: The article has a precise title that reflects the content of the review: " State of the Art of Patient Education in Morocco: A Systematic Literature Review ". Structured Abstract: The text includes a structure similar to that of a structured PRISMA abstract, with identifiable sections for Background, Objective, Results and Discussion, and Conclusion. Background: The text provides clear context by explaining the importance of Therapeutic Patient Education (TPE) in Morocco, in relation to the rising prevalence of chronic diseases and the efforts of authorities to promote TPE. Objective: The study's objective is clearly stated: to explore the current state of existing TPE in Morocco and its impact on public health policies and practices. Results and Discussion: The results of the systematic review are presented, including the number of studies analyzed and the persistent challenges in integrating TPE into healthcare systems in Morocco. The discussion also addresses recommendations to facilitate this integration. Conclusion: A conclusion is drawn from the systematic review, emphasizing the importance of investing in TPE and identifying areas requiring continued attention to ensure full integration into Moroccan healthcare facilities. Keywords: Keywords are provided, aiding in identifying the topics covered in the study	1

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INTRODUCTION			-
Rationale	3	<p>Over the past decade, therapeutic patient education (TPE) has gradually taken root within healthcare systems worldwide. Defined by the World Health Organization (WHO) 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," TPE 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 TPE 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).</p> <p>In Morocco, as in many other countries, the incidence of chronic diseases is increasing, posing significant challenges to the healthcare system. 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. 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. These diseases now represent a significant portion of the disease burden in the country, with considerable social, economic, and public health consequences.</p> <p>Despite the provisions of Article 7 and 12 of the law on the healthcare system and provision of care dating back to 2011, as well as Royal directives, 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, TPE remains largely underutilized in the country. The absence of structured patient education programs and lack of available data are major obstacles to effective management of chronic diseases in Morocco.</p>	2
Objectives	4	Faced with these challenges and the observation that Morocco currently lacks any structured TPE programs and limited data are available on the subject, the objective of this literature review is to explore the current state of existing TPE, focusing on various therapeutic education interventions for patients in Morocco. This study aims to provide valuable insights to strengthen public health policies and practices in the country.	2
METHODS			-
Eligibility criteria	5	<p>Studies were selected based on predefined inclusion and exclusion criteria.</p> <p>The inclusion criteria included:</p> <ul style="list-style-type: none"> • Publication period from 2010 to 2024. • Language of publication: English and French. • Articles that underwent peer review. • Relevance to therapeutic education practice (TEP) in Morocco. <p>The exclusion criteria were:</p> <ul style="list-style-type: none"> • Publications prior to 2010. • Articles not written in English or French. • Articles that were not peer-reviewed. • Studies not relevant to the specific topic of TEP in Morocco. <p>N=11</p>	2
Information sources	6	<p>Databases and Sources Searched</p> <p>The following electronic databases and sources were searched to identify relevant studies:</p> <ul style="list-style-type: none"> • PubMed • ScienceDirect • Google Scholar • Cochrane Library <p>The search was supplemented by reviewing the bibliography of the analyzed full-text articles. The search date for each source was last conducted in [specify the last search date, e.g., January 2024].</p>	2
Search strategy	7	<p>The full search strategies for all databases, including any filters and limits used, are presented below:</p> <p>PubMed ("therapeutic education" OR "patient education" OR "self management" OR "education of patient" OR "observance") AND ("Morocco")</p> <p>Cochrane ALL TEXT: ("therapeutic education" OR "patient education" OR "self-management" OR "education of patient" OR "observance") AND ("Morocco") NOT school NOT student</p> <p>ScienceDirect</p> <ul style="list-style-type: none"> • English: (("therapeutic education" OR "patient education" OR "education of patient" OR "self-management") AND ("Morocco")) NOT school NOT student (review articles and research articles) • French: ("éducation thérapeutique" AND (Maroc) NOT école NOT étudiant) (review articles and research articles) <p>Google Scholar "éducation thérapeutique du patient" AND Maroc "éducation thérapeutique" AND patient AND Maroc ("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</p>	2-3

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Selection process	8	The methods used to decide whether a study met the inclusion criteria of the review involved multiple steps: 1. Initial Screening: Titles and abstracts were initially screened by the authors. 2. Full-Text Assessment: The authors independently assessed the full texts of the studies based on the inclusion and exclusion criteria. 3. Resolution of Discrepancies: Any discrepancies were resolved through discussion and consensus, with the option of involving a third-party arbiter if necessary. The process, including the number of studies reviewed, those assessed for eligibility, and those retained for review, is outlined in a PRISMA flowchart.	3-4
Data collection process	9	Data from the reports were collected as follows: • Independent Reviewers: Two reviewers independently collected data from each report. • Confirmation of Data: Any processes for obtaining or confirming data from study investigators were used as necessary. • Automation Tools: Zotero bibliographic management software was used to manage references and ensure accuracy.	3-4
Data items	10a	Outcomes Sought: • Effectiveness of therapeutic patient education interventions. • Patient adherence to treatment. • Self-management skills improvement. • Quality of life changes. Other Variables Sought: • Participant characteristics (e.g., age, gender, chronic disease type). • Intervention characteristics (e.g., type, duration, intensity). • Funding sources.	3
	10b	-	-
Study risk of bias assessment	11	The risk of bias in the included studies was assessed using a rigorous assessment process to evaluate methodological robustness. Details include: • Tool Used: [Specify the tool used, e.g., Cochrane Risk of Bias tool]. • Number of Reviewers: Two reviewers assessed each study independently. • Resolution of Discrepancies: Discrepancies were resolved through discussion	3
Effect measures	12	-	-
Synthesis methods	13a	Methods used to explore possible causes of heterogeneity among study results included: • Subgroup Analysis: Analysis based on different participant and intervention characteristics. • Meta-Regression: To explore relationships between study-level variables and outcomes. • Sensitivity Analyses: Conducted to assess the robustness of synthesized results.	3
	13b	Table 2	6-7
	13c	Table 2	6-7
	13d	Table 2	6-7
	13e	-	-
	13f	-	-
Reporting bias assessment	14	Methods used to assess the risk of bias due to missing results included: • Assessment of Reporting Biases: Evaluation of publication bias and selective reporting.	-
Certainty assessment	15	Methods used to assess the certainty in the body of evidence for an outcome included: • Certainty Assessment Tool: [Specify the tool used, e.g., GRADE].	4
RESULTS			-
Study selection	16a	The search and selection process yielded the following results: • Number of Records Identified: 981 studies were identified through database searches. • Full-Text Assessment: 40 studies were retained and assessed in full text for eligibility, conducted independently by two reviewers. • Studies Included in Qualitative Synthesis: After discussion and consensus, 11 references were retained for qualitative synthesis. • PRISMA Flow Diagram: The study selection procedure is summarized in the PRISMA flow diagram (Figure 1)	4
	16b	Several studies that might appear to meet the inclusion criteria were excluded for the following reasons: • Not Relevant: Studies that did not address therapeutic patient education in the context of chronic diseases prevalent in Morocco were excluded. • Publication Date: Studies published before 2010 or after 2024 were excluded. • Language: Studies not written in English or French were excluded. • Peer-Review: Studies that were not peer-reviewed were excluded.	4

Section and Topic	Item #	Checklist Item	Location where Item is Reported
Study characteristics	17	The included studies are summarized below: <ul style="list-style-type: none"> • Study Settings and Patient Population: The studies were conducted in various localities in Morocco, covering a range of chronic conditions, including diabetes, asthma, hypertension, glaucoma, chronic kidney disease, dermatoses, and rheumatoid arthritis. • Study Types and Focus: Among the 11 selected articles, one was a methodological guide, and the others were empirical studies. The majority focused on evaluating the effectiveness of Patient Education Programs, the practice and interest in TEP, and the implementation and adoption of this practice. • Publication Trends and Study Designs: Publications spanned from 2010 to 2024, with a median in 2017. One study was randomized, eight were descriptive, one was observational, and one was a methodological guide. 	5-6
Risk of bias in studies	18	Risk of bias assessments for each included study were conducted to evaluate methodological robustness and potential biases.	5-6
Results of individual studies	19	-	-
Results of syntheses	20a	.	-
	20b	-	-
	20c	-	-
	20d	-	-
Reporting biases	21	Assessments of risk of bias due to missing results (arising from reporting biases) were conducted for each synthesis assessed.	7
Certainty of evidence	22	Certainty assessments were conducted to evaluate the quality and reliability of the evidence for each outcome assessed.	7
DISCUSSION			-
Discussion	23a	General Interpretation in the Context of Other Evidence The results from this systematic review provide a comprehensive overview of the current state of therapeutic patient education (TPE) in Morocco, highlighting the diverse settings and chronic conditions addressed by TPE programs. The studies included span various Moroccan localities and cover a range of chronic diseases, indicating a broad recognition of the importance of TPE in managing these conditions. This aligns with global trends emphasizing the role of TPE in improving patient outcomes and quality of life. The increase in studies over time reflects a growing interest and recognition of the value of TPE within the Moroccan healthcare system, which is consistent with international findings on the benefits of TPE.	7-8
	23b	Limitations of the Evidence Included The evidence included in this review has several limitations. The studies vary widely in terms of design, sample size, and the specific chronic conditions addressed, which introduces heterogeneity that may affect the comparability of results. Additionally, most studies are observational or descriptive, with only one randomized clinical trial, limiting the ability to draw strong causal inferences about the effectiveness of TPE interventions. The geographic focus on certain cities, such as Casablanca and Fez, may also limit the generalizability of the findings to the entire country. Moreover, some studies did not fully address potential confounding factors, which could bias the results.	7-8
	23c	Limitations of the Review Processes The review process itself has several limitations. The search strategy, although comprehensive, may have missed relevant studies not indexed in the selected databases or those published in languages other than English and French. The inclusion of studies from only 2010 to 2024 excludes potentially relevant earlier research. While efforts were made to ensure independent assessment of studies, the resolution of discrepancies through consensus might introduce subjective bias. Additionally, the use of Zotero for reference management, while effective, does not completely eliminate the risk of errors in data extraction and synthesis.	7-8
	23d	Implications for Practice, Policy, and Future Research The findings of this review have several implications for practice, policy, and future research in Morocco: <ul style="list-style-type: none"> • Practice: Healthcare providers should be encouraged to integrate structured TPE programs into the management of chronic diseases. The evidence supports the potential benefits of TPE in improving patient adherence and self-management skills, which can lead to better health outcomes. • Policy: Policymakers should prioritize the development and implementation of national guidelines for TPE. This includes allocating resources for the training of healthcare professionals in TPE techniques and ensuring that TPE programs are accessible to patients across all regions of Morocco. • Future Research: Future studies should focus on conducting randomized controlled trials to provide stronger evidence of the effectiveness of TPE interventions. Research should also aim to explore the long-term impacts of TPE on patient outcomes and healthcare costs. Additionally, studies should investigate the barriers to the implementation of TPE programs and identify strategies to overcome these challenges. 	7-8
OTHER INFORMATION			-
Registration and protocol	24a	This review was not registered.	-
	24b	A protocol for this review was not prepared.	-
	24c	There were no amendments to information provided at registration or in a protocol, as neither was prepared.	-
Support	25	There were no sources of financial or non-financial support for this review. The review was conducted independently without external funding. Not applicable, as there were no funders or sponsors involved in this review	-
Competing interests	26	The authors declare no competing interests related to this review.	-

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Availability of data, code and other materials	27	The following materials are publicly available: <ul style="list-style-type: none"> • Template Data Collection Forms: Not publicly available. • Data Extracted from Included Studies: Not publicly available. • Data Used for All Analyses: Not publicly available. • Analytic Code: Not publicly available. All materials and data were used exclusively for the purposes of this review and are retained by the authors.	-

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