

## Therapeutic Patient Education in Community Pharmacies in Morocco: Current Status and Implementation Opportunities

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### Abstract

### Original Research Article

**Introduction:** Chronic diseases represent a major global public health challenge. Therapeutic patient education (TPE), recognized by the World Health Organization (WHO) as essential for enhancing autonomy and improving adherence, is already integrated into healthcare systems in several countries. In Morocco, the rise in chronic diseases and high rates of non-adherence underscore the need to involve community pharmacists, as local healthcare providers, in the implementation of TPE programs tailored to the national context. **Objective:** This study aimed to assess community pharmacists' knowledge of TPE and to examine their potential willingness to engage in the implementation of this practice within their pharmacy practice. **Materials and Methods:** Data collection took place over 4 months using a questionnaire distributed both online and handed out directly to selected pharmacists in the city of Rabat. The questionnaire included 16 closed-ended, open-ended, or multiple-choice questions. Responses collected online via Google Forms were exported to Google Sheets and combined with those collected in the field into an Excel file, with missing data coded as "no response." All data were analyzed using simple sorting and pivot tables. **Results:** Among the surveyed community pharmacists, 58.58% associated TPE with the general concept of health education, indicating a partial understanding of TPE's objectives and specific characteristics. Furthermore, 72% were unable to identify the concrete steps necessary for its implementation, highlighting a gap in the practical understanding of this approach. Nevertheless, 84% of participants expressed a willingness to engage in educational activities with patients. **Conclusion:** TPE is increasingly being integrated into the management of chronic diseases, but its implementation remains limited, particularly due to a lack of funding and cooperation among healthcare professionals. In Morocco, community pharmacists, as local healthcare providers, could play a key role in TPE, requiring training in communication and pedagogy as well as the use of tools such as the pharmaceutical record or the shared medication review.

**Keywords:** Therapeutic education, community pharmacist, chronic disease, treatment follow-up.

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## INTRODUCTION

Globally, chronic diseases represent a major public health challenge due to their rising incidence and significant impact on patients' quality of life as well as on healthcare systems. In response to this challenge, the WHO recommends TPE as an indispensable tool for enhancing autonomy, improving treatment adherence, and optimizing care. In several countries, particularly in Europe, TPE is institutionalized through multidisciplinary programs that are structured and regulated by legal frameworks.

In Morocco, the continued rise in the prevalence of chronic diseases, coupled with an alarming rate of non-adherence to treatment, highlights the need to develop innovative patient support strategies. In this context, the community pharmacist, due to their proximity, availability, and central role in dispensing treatments, emerges as a key player in the implementation and development of TPE programs tailored to the national healthcare system.

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## MATERIALS AND METHODS

### Survey Objectives

The main objective of this survey was to assess community pharmacists' knowledge of TPE (approaches and objectives of its implementation, scope of application), and to examine community pharmacists' willingness to engage in this practice.

### Survey Procedure

Data collection lasted four months and was conducted by distributing the "Google Forms" questionnaire online to community pharmacist associations via the profession's various social media platforms, as well as by distributing the questionnaires to a number of community pharmacists in the city of Rabat.

### Selection of Questionnaire Items

The questionnaire, consisting of 16 questions, focused on identifying pharmacies and pharmacists, their knowledge and commitment to TPE, the motivations and barriers to its practice, the role and required

competencies, as well as continuing education and satisfaction with academic training.

### Creation of a database and sorting of responses

To sort the responses collected on the "Google Forms" platform, the online data was exported via the "Google Sheets" interface to generate spreadsheets, copy the data, and create a workbook in Microsoft Excel.

Responses collected in the field were organized in the same workbook alongside the other responses collected online.

The created database includes "No response" entries for cases where no response was provided.

The received data is sorted either using "simple sorting" or "cross-sorting" via pivot tables.

## RESULTS

### Participation Rate

The total number of pharmacists who responded to the questionnaire is 100 (Figure 1):

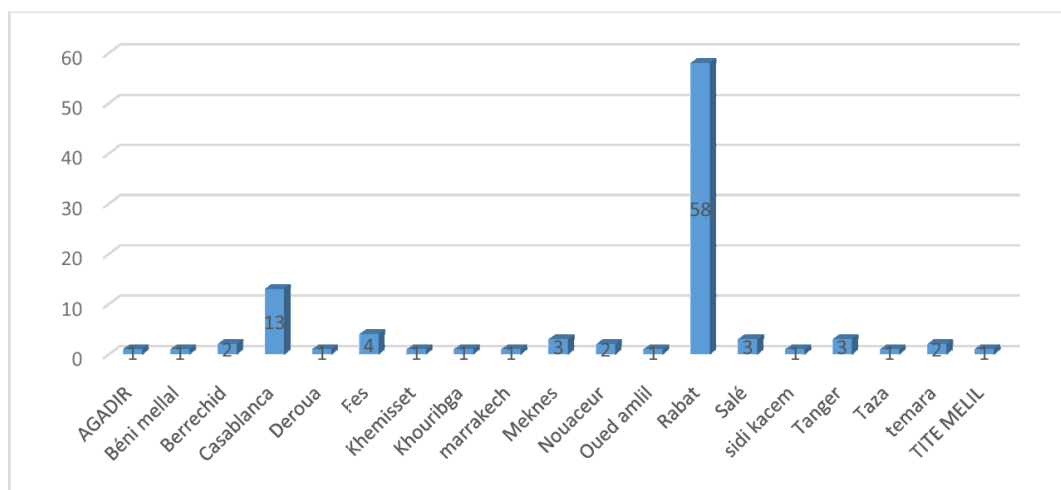


Figure 1: Participation rate of pharmacists by city or province.

### Awareness of the concept of TPE

58.58% of the pharmacists in our sample are familiar with the concept of TPE. The results are presented in Figure 2.

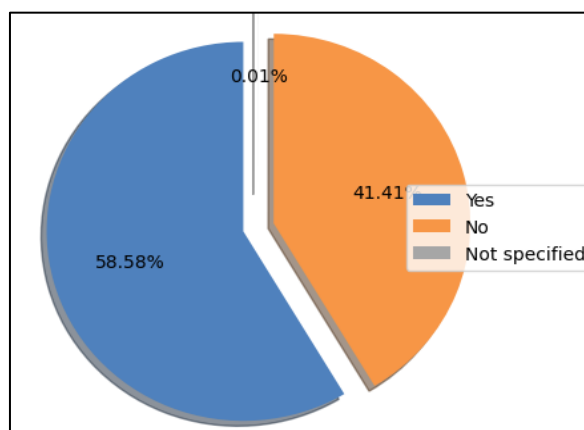
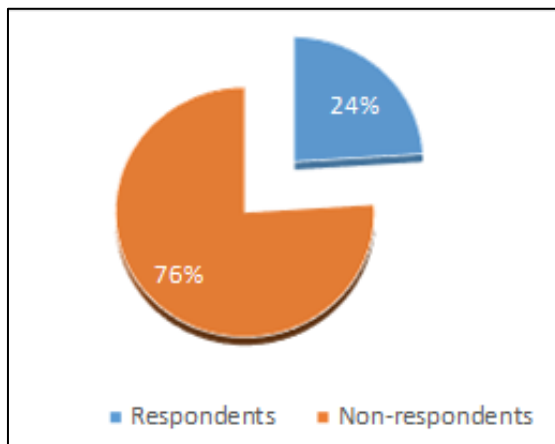


Figure 2: Representation of community pharmacists' knowledge of the concept of patient therapeutic education and (n=100)

**Objectives of TPE in community pharmacies**

24% of pharmacists reported knowing the objectives of TPE. The responses are presented in Table

1. The percentage of responding pharmacists is illustrated in Figure 3.



**Figure 3: Estimated awareness of TPE objectives (n=100)**

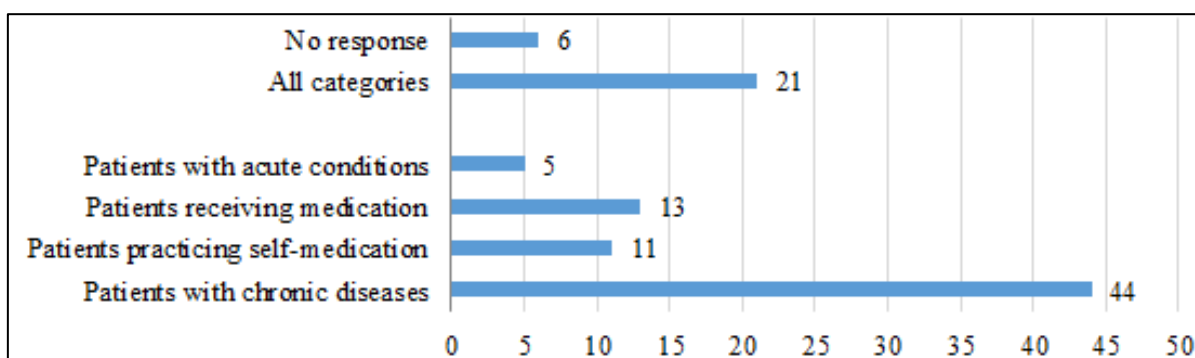
**Table 1: Pharmacists’ responses regarding the objectives of implementing TPE**

Responses provided	Number of respondents
To help patients better manage their lives with a chronic illness and to help patients achieve relative autonomy by developing their skills.	6
Optimize medication use (avoid side effects and combinations that are not recommended or contraindicated), and provide proper guidance to patients regarding self-medication.	7
The pharmacist’s contribution to public health services.	1
Provide patients with information about their condition.	1
Providing guidance and support to the patient	2
Improving the therapeutic and psychological care of the patient	1
Ensure a more effective quality assurance system, involve and empower all members of the pharmacy staff, and implement the principles of good pharmacy practice.	2
Achieve optimal communication with the patient and provide them with information.	2
Save time on each visit—an informed patient is worth two	1
Address the very high rates of ignorance and illiteracy, especially in working-class neighborhoods.	1

**Beneficiaries, procedures, and TPE activities**

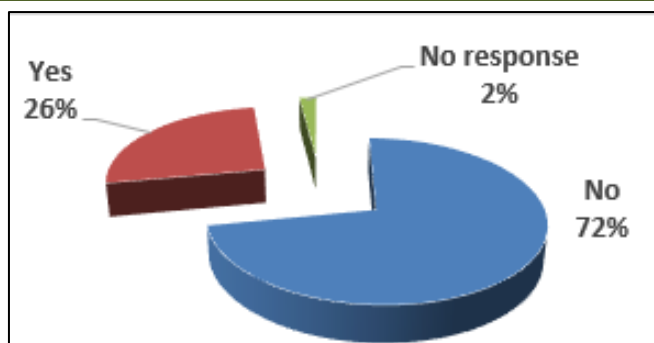
44% of responding pharmacists indicated that TPE is primarily intended for patients with chronic

diseases. Other indications for TPE are presented in Figure 4.



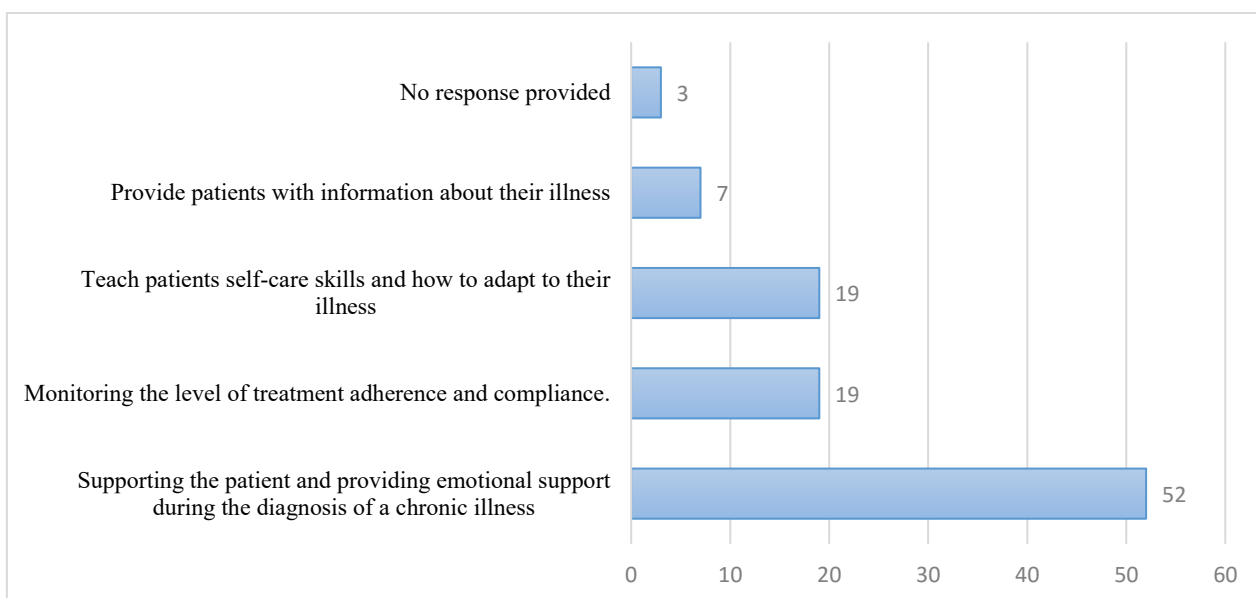
**Figure 4: Beneficiaries of TPE services in community pharmacies.**

Figure 5 illustrates the percentage of pharmacists who are familiar with the procedures for providing TPE.



**Figure 5: Percentage of pharmacists familiar with the procedures of a TPE program (n=100).**

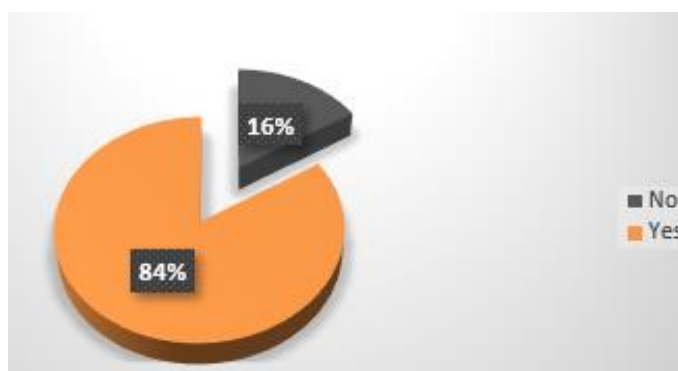
The activities of the TPE are presented in Figure 6.



**Figure 6: Procedures performed by a community pharmacist in a TPE program.**

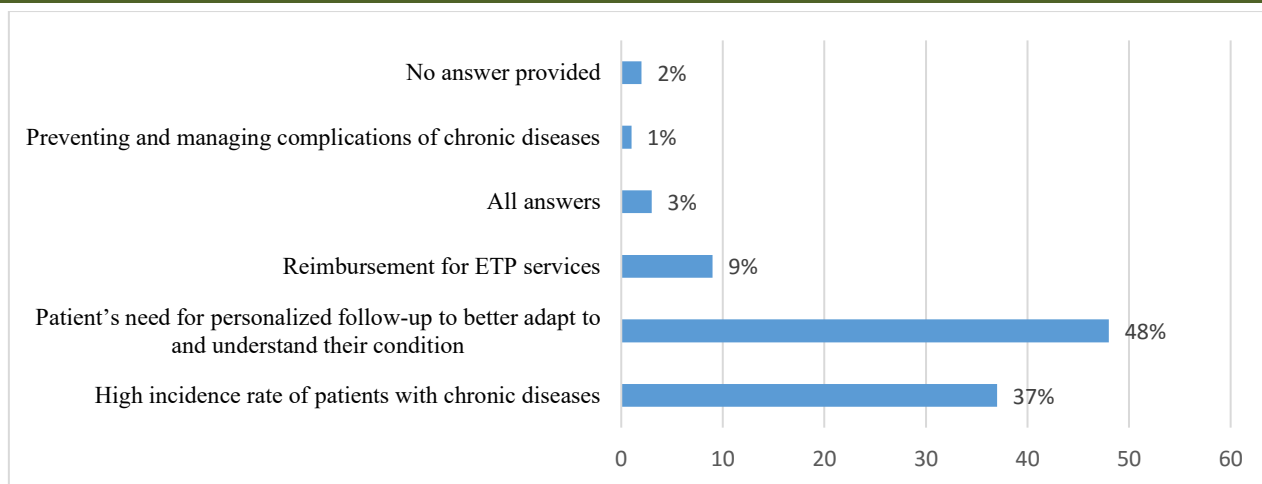
**TPE in community pharmacies: Agreement to participate, motivational factors, and constraints**

84% of pharmacists expressed their agreement to participate in TPE. The results are presented in Figure 7.



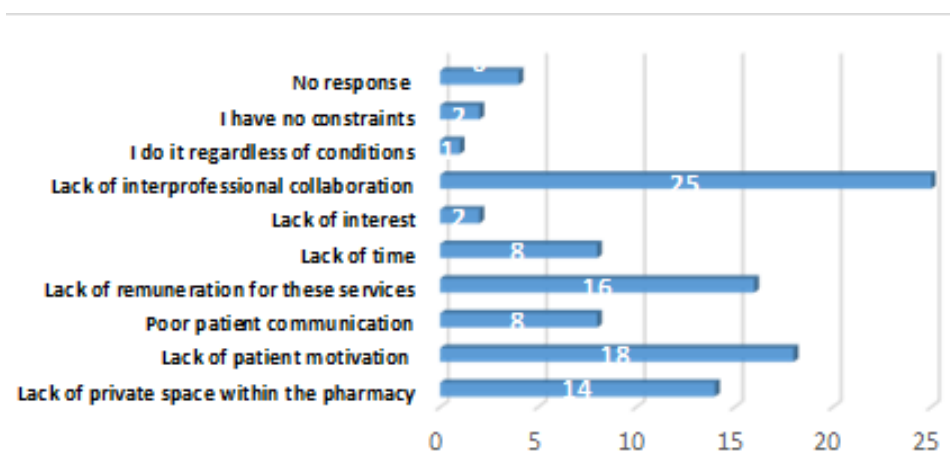
**Figure 7: Community pharmacists' assessment of TPE practice (n=100).**

The motivational factors for implementing TPE in community pharmacies are presented in Figure 8.



**Figure 8: Motivational factors for implementing TPE**

The barriers to implementing TPE in community pharmacies are illustrated in Figure 9.

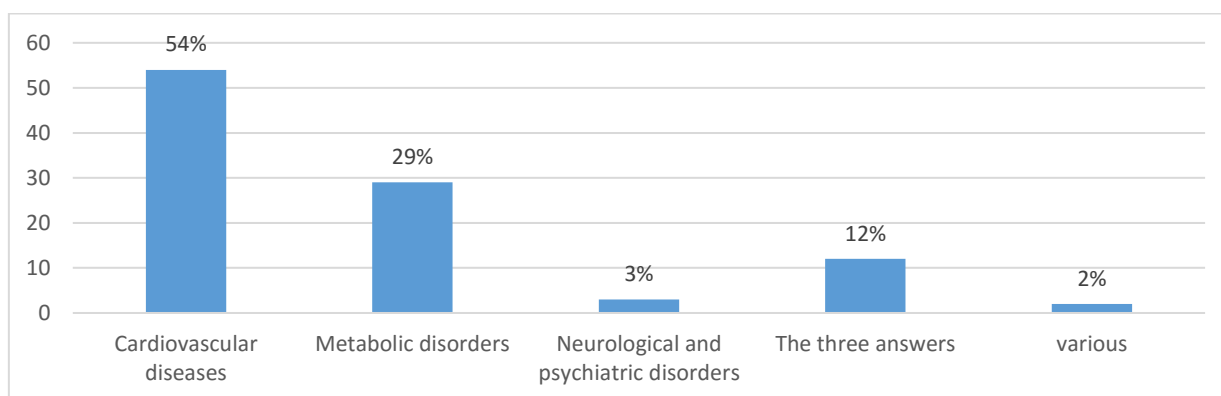


**Figure 9: Distribution of constraints on implementing TPE**

**Chronic conditions for which the TPE is considered during the pharmacist's practice**

Respondents indicated that that cardiovascular conditions are the chronic diseases they most frequently

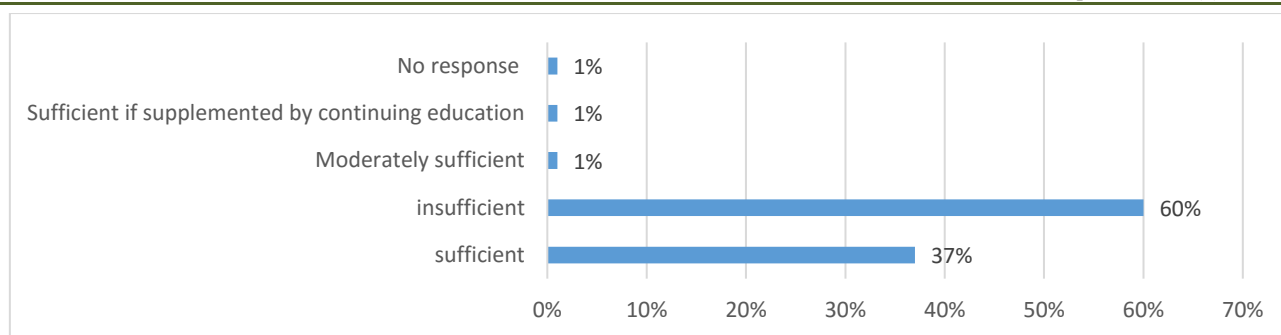
encounter in their daily practice. The results are presented in Figure 10.



**Figure 10: Chronic conditions most frequently encountered in the practice of community pharmacists**

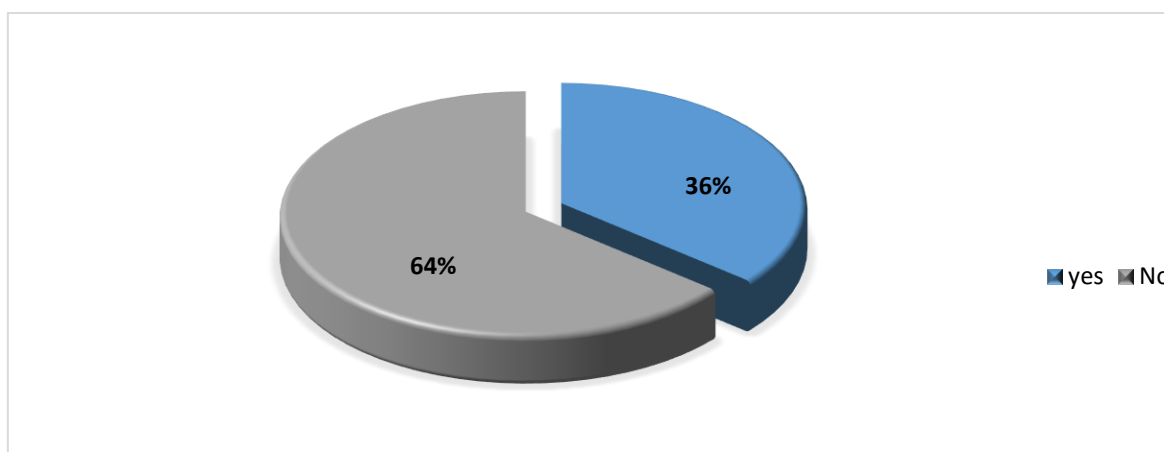
**Initial and continuing education for community pharmacists and the skills required to implement TPE**

60% of the pharmacists in our sample stated that initial training alone is not sufficient for pharmacists to practice TPE (Figure 11).



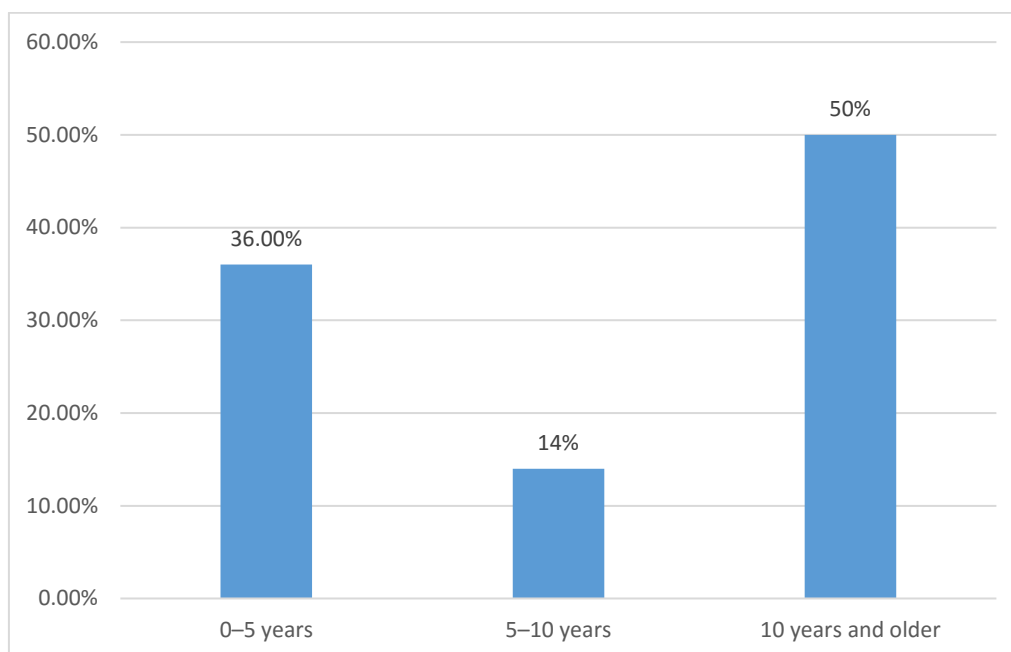
**Figure 11: Role of initial pharmacist training in TPE (n=100).**

The distribution of continuing education practices among pharmacists and their pharmacy teams is presented in Figure 12.



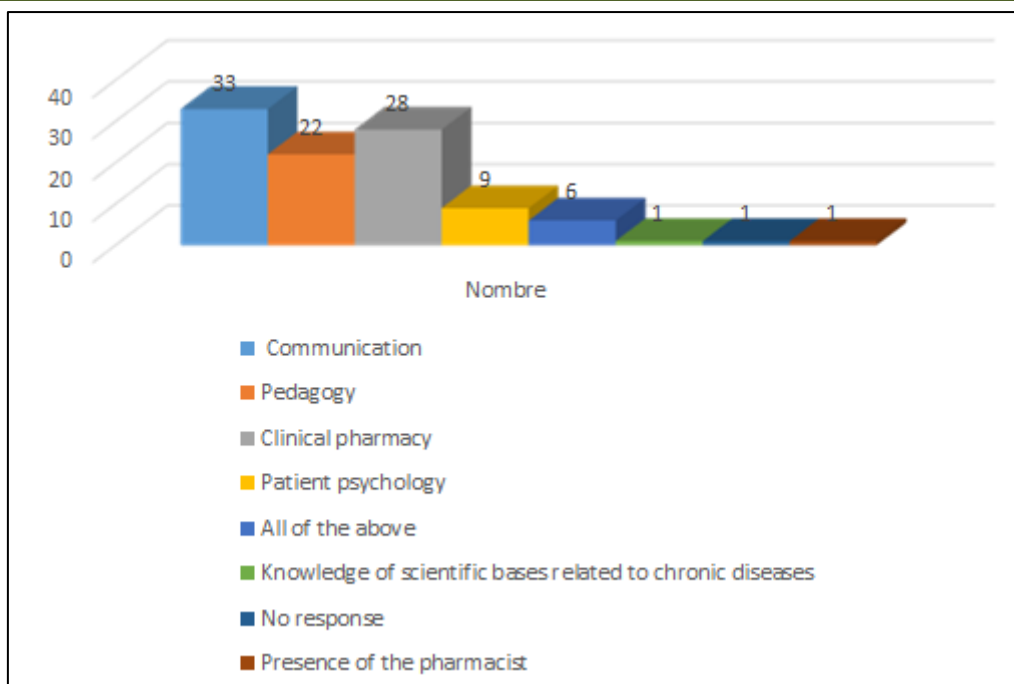
**Figure 12: Scale of continuing education practice among pharmacists and their pharmacy teams (n=100)**

Figure 13 illustrates the impact of years of practice on the practice of continuing education among community pharmacists.



**Figure 13: Pharmacists' participation in continuing education by number of years of practice (n=36).**

Figure 14 illustrates the competencies required to implement TPE in community pharmacies.



**Figure 14: Skills required to implement TPE in community pharmacies.**

## DISCUSSION

### Knowledge of the concept of TEP and its objectives

Among the pharmacists surveyed, 58.58% reported being familiar with TPE. However, when asked to provide a definition, the majority confuse it with health education. This confusion can be explained by the lack of a single, consensus-based definition of PCE. Indeed, according to the WHO, patient education encompasses three levels of activities, including a comprehensive approach addressing habits and lifestyle, whether or not related to a chronic disease.

Didier showed in 2016 that 74% of pharmacists surveyed reported being familiar with this practice [1]. This result is likely due to the regulation of PCE since 2011 through the implementation of the “Hospitals, Patients, Health, and Territories” (HPST) law and its structuring via the publication by the French National Authority for Health (HAS) of a methodological guide intended for healthcare professionals interested in this practice in the field of chronic diseases.

Regarding the objectives of its implementation, 24% of pharmacists identified at least one objective for establishing a TPE. (62.5%, n=24) of these objectives align with those cited in the WHO definition. Indeed, this result is consistent with that of Benoit *et al.*, who showed, following a survey of 20 pharmacists, that 65% of pharmacists provided a definition of the TPE and its objectives according to the WHO [2].

### Scope, Approaches, and Activities of PTC

In our survey, 44% of pharmacists indicated that TPE services in Morocco primarily concern people with chronic diseases. These conditions, which are often asymptomatic, incurable, and require restrictive

treatments, necessitate educational care aimed at helping patients better monitor and manage their disease as well as their treatment. While TPE programs primarily target patients with diabetes and hypertension, they have also proven effective in managing many other chronic conditions [3].

However, 72% of the pharmacists surveyed are unaware of the four steps defined by the HAS for implementing a multidisciplinary educational program. Their understanding is generally limited to providing information or dispensing advice. These results contrast with those of Lehmann *et al.*, who showed that in France, in 2016, 85.5% of educational initiatives followed the four steps of TPE as defined by the HAS. However, only 26% of community pharmacists actively participated in the educational sessions [4]. This lack of awareness observed in Morocco could be explained by the absence of a specific regulatory framework (law, decree, etc.) structuring TPE as a continuous process, as has been the case in France since the enactment of the “HPST” law.

These results highlight the importance of interprofessional collaboration for optimal patient education, in which the pharmacist plays a key role in the patient therapeutic education process.

52% of pharmacists consider their role central to TPE, focusing on accompanying and supporting the patient, while 38% emphasize treatment monitoring and management. Their position as “medication experts,” reinforced by their knowledge, proximity, and availability, explains this perception. However, to fully fulfill this mission, they must also develop communication and psychosocial skills.

### Participation, Motivational Drivers, and Barriers to Implementing TPE- s

In our study, 84% of pharmacists stated they were willing to participate in patient therapeutic education initiatives. This finding aligns with the results of a 2013 survey conducted by the French Society of Clinical Pharmacy, in which community pharmacists accounted for nearly a quarter of all educational initiatives carried out in France [5]. This willingness reflects community pharmacists' growing awareness of the importance of their role as local healthcare professionals, contributing to health promotion and supporting patients with chronic conditions in managing their illness and treatment.

According to the results of our study, 48% of pharmacists cite the need to provide treatment follow-up and support patients in managing their conditions to improve their quality of life as the reason for their willingness to engage in TPE. Furthermore, 37% cite the high prevalence of chronic diseases as the reason for this commitment, which requires greater involvement of pharmacists in their care.

Data from the national family health survey show a notable increase in chronic diseases in Morocco, with their prevalence rising from 18.2% in 2011 to 21% in 2018. This increase is particularly evident for diabetes (3.3% to 4.8%) and hypertension (5.4% to 6.8%) [6]. These trends are confirmed by our survey, in which pharmacists estimate that cardiovascular diseases account for 54% of cases encountered in the pharmacy, compared to 29% for metabolic conditions.

The results of our survey reveal a strong commitment among pharmacists to patient care, despite the fact that these services are not reimbursed—a factor considered one of the main obstacles to implementing this education—as well as a lack of interprofessional collaboration (25%), lack of patient motivation (18%), and the absence of a private space (14%).

The lack of multidisciplinary cooperation in implementing TPE initiatives is the primary barrier identified among the pharmacists in our study sample. Furthermore, Didier has shown that this barrier is considered a minor issue by pharmacists (28.8%), 64.9% of whom state that they can participate in a TPE activity (information or therapeutic consultation) without collaboration with other healthcare professionals [1]. This is due to the lack of therapeutic monitoring tools in community pharmacies, such as the pharmaceutical record or the shared medical record, which provide the pharmacist with the patient's clinical, biological, and therapeutic data to better assist them in managing their condition.

In other studies, lack of time emerges as the main obstacle to implementing TPE in healthcare

facilities or pharmacy networks, followed by insufficient material resources and a lack of adequate training [7,8].

### Initial or continuing education for skill development and the implementation of therapeutic education

60% of the pharmacists in our study highlighted the inadequacy of university training leading to a Doctor of Pharmacy degree in relation to the practice of community pharmacy. Although university education provides pharmacists with both theoretical and practical knowledge and skills through various teaching methods, this training remains insufficient and must be supplemented by continuing education necessary for improving pharmacy practice. This result is believed to be due to the failure to adapt the academic training provided to community pharmacists to the realities of pharmacy practice. To assess the effectiveness of this training and its relevance to future pharmaceutical practice, several studies have been conducted, all of which showed only a non-significant improvement in reforms regarding the content and organization of training, internships, and exams[9].

Benoit *et al.*, found that half of pharmacists considered their training insufficient for the implementation of TPE or health education [2]. Similarly, Badran *et al.*, in a survey conducted in France between 2017 and 2018, reported that 83% of pharmacists (53% owners and 30% associates) felt that their training had not sufficiently prepared them for the roles they hold [9]. These results also confirm those of the Celtipharm study (2014), which highlighted the need for a better alignment between academic training and pharmacy practice [10].

Regarding continuing education, 64% of the pharmacists surveyed stated that they did not participate in such programs, whether in the form of university degrees, forums, congresses, or pharmaceutical conferences. However, such training is an essential investment to enable community pharmacists to provide high-quality pharmaceutical services. This low participation can be explained by several factors, notably the deteriorating financial situation of pharmacies in Morocco, which steers pharmacists' practice more toward commercial activities than toward the scientific aspects of their profession.

These findings align with those of a 2019 survey of Moroccan pharmacists, which showed that 32% of pharmacists do not participate in continuing education due to a lack of time[11].

86% of pharmacists consider continuing education essential for maintaining and improving their skills. Participation is higher among pharmacists who have been practicing for less than 5 years or more than 10 years, reflecting both the motivation of younger pharmacists to deepen their knowledge and the need for experienced pharmacists to update their skills.

The pharmacists who participated in our study consistently indicated that implementing patient therapeutic education requires the development of skills in clinical pharmacy, communication, and pedagogy. These areas are essential for effectively conveying the educational message in a technical manner, while establishing a relationship of trust and empathy with the patient. These results are consistent with the recommendations of the INPES (National Institute for Prevention and Health Education), which emphasizes in its competency framework for TPE the importance of developing technical, interpersonal, and pedagogical skills in the pharmacist as an “educator” [12].

### Recommendations

#### For the pharmacist:

- Leverage their pharmacy experience and participate in continuing education to update their knowledge and develop their skills, particularly in communication.
- Ensure patient follow-up and treatment adherence, especially for those with chronic conditions, using appropriate tools (pill organizers, apps, connected devices).
- Adopt an educational and collaborative approach with the patient.
- Promote collaboration between physicians and pharmacists within a multidisciplinary approach.

#### For regulatory bodies:

- Make continuing education mandatory for all pharmacists.
- Facilitate access to electronic patient records.
- Integrate therapeutic education into academic training and promote a culture of therapeutic education.
- Structure, fund, and compensate therapeutic education programs in the field of chronic diseases.

### CONCLUSION

TPE is becoming increasingly integrated into the management of chronic diseases. However, its implementation remains limited, due in particular to a lack of funding and cooperation among healthcare professionals. In Morocco, community pharmacists, as local healthcare providers, could play a key role in this area, provided they receive training in communication and teaching, as well as access to appropriate tools such as the pharmaceutical record or the shared medication review. TPE also represents a genuine enhancement of the pharmaceutical role, which deserves to be recognized, regulated, and fairly compensated.

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