

Engagement strategies for self-care and safety in the use of medicines: Synthesis of qualitative evidence

Estratégias de engajamento para o autocuidado e a segurança no uso de medicamentos: síntese de evidências qualitativas

Estrategias de participación para el autocuidado y la seguridad en el uso de medicamentos: síntesis de evidencia cualitativa

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ABSTRACT The role of patients is an essential component for medication safety, involving error prevention and informed decision-making. This study aimed to identify strategies for engaging patients in self-care related to medication safety. This synthesis of qualitative evidence was registered in the Open Science Framework and followed the recommendations of the Standards for Reporting Qualitative Research checklist. The scientific databases used in the search were the Biblioteca Virtual em Saúde, Embase, Medline via PubMed, Scopus, and the Cochrane Library. Nine articles were selected for synthesis. The strategies for engaging patients in self-care were mostly associated with health education through workshops, training, and spaces for sharing experiences about medication use, followed by reminders that also used digital devices. It is understood that a patient-centered approach, with active listening and respect for sociocultural contexts, strengthens participation in care, promotes autonomy, and contributes to comprehensive and safe health.

KEYWORDS Patient participation. Self care. Patient safety. Medication adherence. Drug utilization.

RESUMO O papel de pacientes é um componente essencial para a segurança no uso de medicamentos, envolvendo a prevenção de erros e tomada de decisões informadas. Este estudo objetivou identificar as estratégias para o engajamento de pacientes no autocuidado relacionado à segurança no uso de medicamentos. Esta síntese de evidências qualitativas foi registrada na Open Science Framework e seguiu as recomendações da lista de verificação Standards for Reporting Qualitative Research. As bases científicas utilizadas na busca foram Biblioteca Virtual em Saúde, Embase, Medline via PubMed, Scopus e Cochrane Library. Nove artigos foram selecionados para a síntese. As estratégias de engajamento no autocuidado associaram-se, na sua maioria, à educação em saúde por meio de oficinas, treinamentos e espaços de troca de experiências sobre o uso de medicamentos, seguidas por lembretes que também utilizaram dispositivos digitais. Entende-se que a abordagem centrada no paciente, com escuta ativa e respeito aos contextos socioculturais, fortalece a participação do cuidado, promove a autonomia e contribui para uma saúde integral e segura.

PALAVRAS-CHAVE Participação do paciente. Autocuidado. Segurança do paciente. Adesão à medicação. Uso de medicamentos.

RESUMEN El papel del paciente es un componente esencial para la seguridad en el uso de medicamentos, incluyendo la prevención de errores y la toma de decisiones informadas. Este estudio tuvo como objetivo identificar estrategias para involucrar a los pacientes en el autocuidado relacionado con la seguridad en el uso de medicamentos. Esta síntesis de evidencia cualitativa se registró en el Open Science Framework y siguió las recomendaciones de la lista de verificación de los Estándares para la Notificación de la Investigación Cualitativa. Las bases de datos científicas utilizadas en la búsqueda fueron la Biblioteca Virtual em Saúde, Embase, Medline a través de PubMed, Scopus y la Biblioteca Cochrane. Se seleccionaron nueve artículos para la síntesis. Las estrategias para involucrar al paciente en el autocuidado se asociaron principalmente con la educación para la salud a través de talleres, capacitación y espacios para el intercambio de experiencias sobre el uso de medicamentos, seguidos de recordatorios que también utilizaron dispositivos digitales. Se entiende que el enfoque centrado en el paciente, con escucha activa y respeto por los contextos socioculturales, fortalece la participación en la atención, promueve la autonomía y contribuye a una salud integral y segura.

PALABRAS CLAVE Participación del paciente. Autocuidado. Seguridad del paciente. Cumplimiento de la medicación. Utilización de medicamentos.

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Introduction

Patient safety is one of the central pillars in comprehensive care, with increasing relevance in political and care agendas at the global level¹. According to a recent report by the Organization for Economic Cooperation and Development (OECD), it is estimated that about 1 in 10 patients experiences some damage during treatment in health services, causing more than 3 million annual deaths worldwide². In low and middle-income countries, the scenario is even more critical, since 4 out of 100 people may die due to unsafecare². In Latin America, the prevalence of adverse events related to health care remains high, around 10.5% among hospitalized patients, especially in institutions of medium and high complexity, and a significant portion of these events is considered avoidable, which shows structural weaknesses, organizational limitations and persistent challenges in the implementation of safe practices in health systems³. In Brazil, drug-related adverse events are among the most frequent incidents in the hospital environment, with rates ranging between 2.5% and 18.4% of hospitalizations, in addition to the involvement resulting from morbidity and mortality, the prolongation of hospitalization and the increase in care costs^{4,5}.

Among the failures that threaten patient safety, the occurrence of medication errors stands out. The National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP) defines these errors as preventable events that can provoke or lead to inappropriate use of medicine, resulting in potential harm to the patient while the medicine is under the responsibility of the professional, the patient or the consumer⁶. Corroborating this warning, the World Health Organization (WHO) points out that medication errors are among the most common causes of avoidable adverse events, leading to high costs, waste of resources and inefficiency in health services^{7,8}. In the Brazilian

context, the National Health Surveillance Agency (ANVISA) has stressed the need to implement measures aimed at safety in the use of medication, especially after the establishment of the National Patient Safety Program (PNSP), through Ordinance No. 529/2013, of the Ministry of Health, and RDC No. 36/2013, which establishes actions for patient safety in health services^{9,10}.

Against this backdrop, the Global Patient Safety Action Plan 2021-2030 proposed by the WHO sets ambitious targets for reducing preventable harm from unsafe care through coordinated policies, strategies and actions. Among the seven strategic objectives defined, objective S04 stands out, which emphasizes the need to involve and empower patients and families to actively participate in the establishment of safer care¹¹.

In this sense, patient and family involvement should be understood as a structured partnership between users, professionals and health managers, ranging from direct care to governance processes, planning and formulation of public policies^{12,13}. This perspective stresses the importance of empowering individuals, enabling joint action aimed at improving health outcomes.

At the same time, the concept of self-care has been consolidated as a necessary strategy for health promotion and prevention of adverse events. According to Martínez et al.¹⁴, self-care involves the ability to manage one's own health through awareness, self-control and self-sufficiency, especially in the context of chronic diseases, in which patients need to make complex and frequent decisions about their treatment¹⁵.

In addition, interventions that foster self-care and patient engagement have been associated with significant benefits, including greater therapeutic adherence, prevention of medication errors and reduction of health costs^{16,17}. However, effective citizen participation still faces substantial barriers, such as low information on rights, technical difficulties and limitations in the use of already

established social participation instruments¹⁸. In the Brazilian scenario, such challenges become even more relevant in the face of social and educational inequalities, which can compromise health literacy and hinder the safe engagement of users in the management of pharmacotherapy⁴.

Considering these gaps, it is essential to strengthen patient and family engagement as a strategy to reduce risks related to pharmacotherapy. Although there are national policies aimed at patient safety, there is still little evidence on effective strategies for engaging patients and families in self-care related to the safe use of medication, especially in the Brazilian and Latin American context. Thus, the current study aims to identify strategies for the engagement of patients and families in self-care related to safety in the use of medicines, contributing to the advancement of pharmacovigilance practices and to the consolidation of a culture of safety in health services.

Material and methods

Study design

This qualitative evidence synthesis study followed the recommendations of the Standards for Reporting Qualitative Research (SRQR) checklist and was conducted with the purpose of informing decision-making in order to deepen the analysis of patient self-care engagement in the context of safety in the use of medicine¹⁹. This synthesis was registered on the Open Science Framework (OSF) international platform.

Eligibility criteria

As inclusion criteria, original qualitative research articles were selected with full text, in any language and without temporal restriction, including adult patients with any condition or

aggravation, using drug therapies, self-care/self-monitoring approaches, patient safety regarding medication errors, as well as involvement and satisfaction of adult patients regarding the use of medicines.

Exclusion criteria were: incomplete articles, reports, congress minutes, newspaper comments, editorials, case reports, quantitative studies and narrative, integrative and systematic reviews, as well as those that exclusively addressed the pediatric or elderly population, medical devices and health procedures.

Database search

The guiding question of the research was developed with the acronym PICOS, where P – Population (adult patients with any condition or aggravation in use of drug therapies); I – Intervention (engagement of adult patients in their self-care related to safety in the use of medicines); C – Comparator (not applicable); O – Outcome (safety in the rational use of medicines); and S – Study (qualitative research). Therefore, the question of this study was: ‘What are the strategies for engaging adult patients in their self-care related to the use of medications?’.

The following descriptors were identified via Descriptors in Health Sciences (DeCS) and Medical Subject Headings (MeSH); synonyms were obtained in Portuguese, English, Spanish and French, contained in the titles, abstracts or keywords of the studies: “Drug Utilization”[Mesh], “Treatment Adherence and Compliance”[Mesh], “Medication Adherence”[Mesh], “Self Care”[Mesh], “Patient Safety”[Mesh]. Based on these descriptors, the scientific literature was searched in the Virtual Health Library (VHL), Embase, Medline via PubMed, Scopus and Cochrane Library databases. The elaboration of the strategies and the final execution of the searches in the databases took place in July 2024. Manual search and contact with specialists were carried out to provide larger scope to the findings.

Data extraction and analysis

For the organization of articles and removal of duplicates, the Mendeley reference manager version 1.18 was used; and for article selection, the Rayyan QCRI platform was used to read the title and abstract by two independent researchers (MAKR and FTSE). Disagreements were resolved independently by a third researcher (AMA).

Data extraction was performed independently by two reviewers (MAKR and FTSE) using an extraction form in Microsoft Excel 2016, and disagreements were resolved by consensus with a third researcher (AMA). The authors of the selected articles, when necessary, were contacted to provide additional information.

The analysis of the published articles considered the variables author/year author, country, type of study, participants/population, aggravation/disease/condition (chronic, acute disease, specific condition), context of care (specialized, primary, hospital, home), medicine treatment, study objective, patient engagement/involvement strategy and main results.

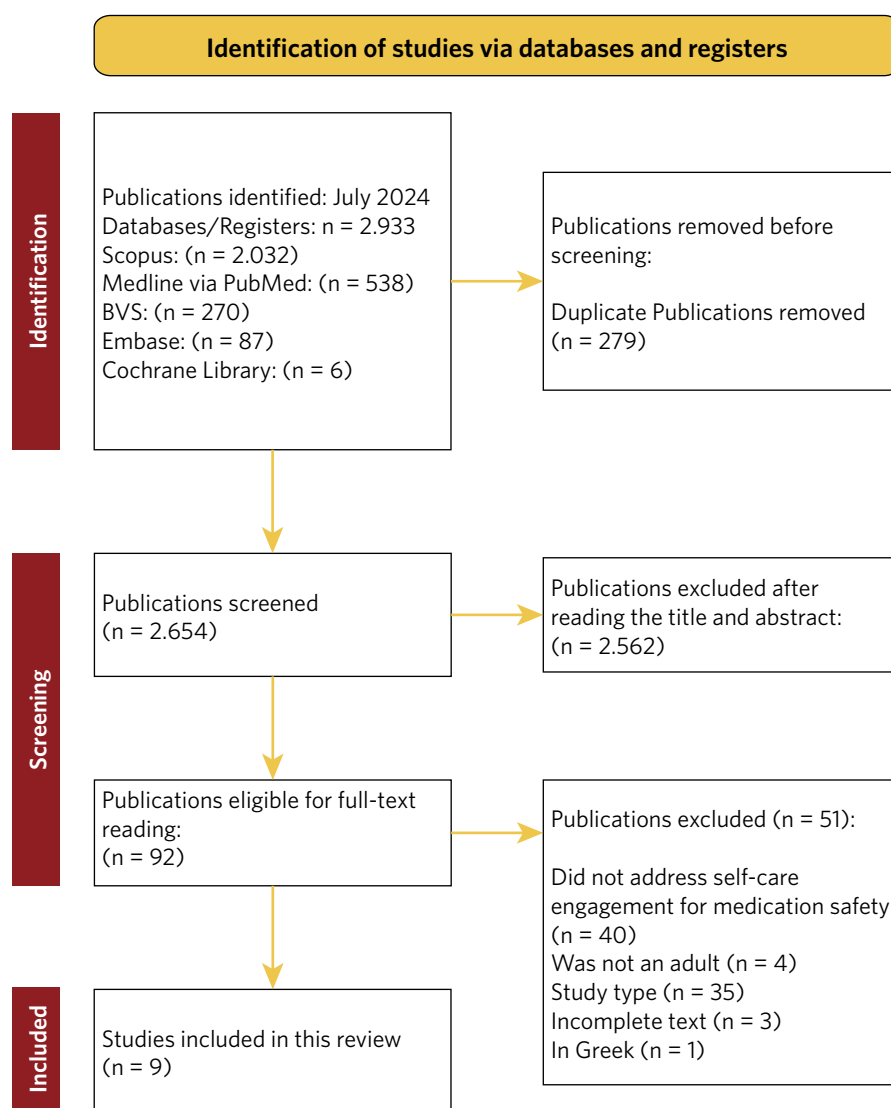
Quality evaluation

The quality of the studies was evaluated by two authors (AMA and MAKR) through the Checklist for Qualitative Research Critical Appraisal, a tool of the Joanna Briggs Institute (JBI) Systematic Reviews. This tool is originally made of 10 questions that assess the quality of the qualitative study information (each 'yes' answer was given 1 point; 'no', 'not clear' and 'not applied' answers were not scored)²⁰. The quality categories were adapted according to the study by Mendes et al.²¹, in: high (10-8 points), moderate (7-5 points) and low (4-1 point). A third reviewer (FTSE) decided on the disagreements in the studies.

Results

Of the total of 2,933 documents resulting from the search in the databases, 279 were excluded due to duplication, 92 studies went through the full text reading stage, and 9 studies were eligible (*figure 1*).

Figure 1. Flowchart for article selection adapted from the 2020 PRISMA Statement



Source: Compiled by the author.

Characterization of the included studies

The qualitative studies found in this research were published in the last decade, with 33.3% of them published in 2022²²⁻²⁴. In the case of the study site, the majority was carried out in Brazil^{22,25-27} (table 1).

Considering that all the studies analyzed were qualitative, the most applied theoretical framework (22.2%) was content analysis^{22,23},

and the most used data collection method was the interview²²⁻²⁹. The population ranged from 18 to 86 years of age, consisting mainly of patients who were treating some chronic disease/infection (Chronic Obstructive Pulmonary Disease – COPD, Diabetes Mellitus – DM, mental disorders, HIV and chronic renal failure)²²⁻²⁸. The sample of the studies totaled 405 individuals, among men and women, however, Spicer et al.³⁰ analyzed only the female population, and Gonçalves and Campos²⁷ only the male population (table 1).

Table 1. Characterization of the studies selected for the qualitative evidence synthesis (n = 9)

Author/Year	Country	Objective	Study design	Theoretical reference	Data collection	Population (N sampling)	Aggravation/Health condition
Câmara et al., 2016 ²⁵	Brazil	To describe the experience of nurses in developing learning strategies and resources on immunosuppression for kidney transplant patients, with the aim of promoting adherence to medication regimens and empowering patients to take charge of their own care.	Qualitative descriptive	Convergent Care Research (CCR)	Workshops and individual interviews	Patients with a mean age of 41.4 years who underwent kidney transplantation. (n = 151)	Chronic kidney disease
Nasser e Nemes, 2016 ²⁶	Brazil	To analyze how patients with Human Immunodeficiency Virus (HIV) experienced and perceived a psychosocial intervention designed to improve their adherence to antiretroviral therapy (ART).	Qualitative descriptive	Scenes from Everyday Life – Conversations in Scenes	Individual interviews and dialogic meetings	Patients aged 26 to 72 who have been on ART for more than 6 months and had a detectable viral load at their last test. (n = 29)	HIV
Gonçalves e Campos, 2017 ²⁷	Brazil	To evaluate the effects of the pilot program for the Self-Management Guide for Medication (SMGM) on these users' relationship with their treatments and on their political participation.	Qualitative descriptive	A process of mediation between lived experience and the possibility of situating it within the social context	Focus groups and individual interviews	Patients between the ages of 31 and 50 from Psychosocial Care Centers (PSCC) with severe mental disorder and a history of political participation in the field of mental health. (n = 7)	Mental Disorders
Kumsa e Tucho, 2019 ²⁸	Ethiopia	Assess resources, as well as personal and institutional activities, that can increase adherence to ART.	Qualitative descriptive	Salutogenic approach	Individual interviews	Patients aged 18 to 51+ who visited the clinic to refill prescriptions. (n = 35)	HIV
Spicer et al., 2020 ³⁰	USA	To understand whether adult patients perceive the risks of antibiotics differently and to determine whether other risks associated with antibiotic use, such as adverse events, would be understood more effectively in public health messaging.	Qualitative, descriptive and exploratory	Not listed	Focus group	Women aged 22 to 45 who reported having received at least one antibiotic prescription in the previous 12 months. (n = 31)	Ear infections, sinusitis, respiratory tract infections
Kotwani et al., 2021 ²⁹	India	To explore consumers' knowledge, practices, and behaviors regarding antibiotics, antibiotic use, and antimicrobial resistance, as well as the determinants associated with antibiotic use and consumers' antibiotic purchasing behavior.	Qualitative exploratory	Not listed	Individual interviews	Individuals between the ages of 18 and 70 who were taking antibiotics to treat possible infections. (n = 72)	Cold; cough; fever; flu-like symptoms; acute diarrhea; throat infections
Lima e Lima, 2022 ²²	Brazil	Adherence to diabetes mellitus (DM) treatment among patients in primary care.	Qualitative descriptive	Content Analysis	Individual interviews	Patients aged 18 to 86 who had been diagnosed with diabetes mellitus 6 months prior. (n = 30)	DM

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Author/Year	Country	Objective	Study design	Theoretical reference	Data collection	Population (N sampling)	Aggravation/Health condition
O'Toole et al., 2022 ²³	USA	To explore patients' perspectives on medication adherence in chronic obstructive pulmonary disease (COPD) and to gather information on facilitators and barriers to medication adherence, as well as strategies reported by patients to maintain adherence.	Qualitative exploratory	Content Analysis	Individual interviews	Patients with a mean age of 70 COPD years, with stage II-IV COPD, who are taking medication. (n = 30)	
Van Emmenis et al., 2022 ²⁴	United Kingdom	To explore the views of patients and healthcare professionals on nonadherence to hypertension medication and a complex intervention designed to support medication adherence.	Qualitative exploratory	Focus on Perceptions and Practicality	Individual interviews and focus groups	Patients aged 47 to 79 with diabetes or hypertension (prescribed one or more anti-hypertensive medications for at least 3 months prior to the study; without records from a general practitioner, with blood pressure above 140/90 mm Hg, who use SMS or smart-phone apps.) (n = 20)	High Blood Pressure and Diabetes

Source: Compiled by the author.

Quality evaluation

Most studies (90%) showed high quality, according to the Checklist for Qualitative

Research Critical Appraisal, from JBI Systematic Reviews (table 2).

Table 2. Quality Assessment Using the Checklist for Qualitative Research - JBI Systematic Reviews

Author/Year	Checklist for Qualitative Research - JBI Systematic Reviews										Quality assessment
	1	2	3	4	5	6	7	8	9	10	
Câmara et al., 2016 ²⁵	Y	Y	Y	N	N	Y	N	N	Y	Y	Moderate
Nasser & Nemes, 2016 ²⁶	Y	Y	Y	Y	Y	Y	N	Y	N	Y	High
Gonçalves & Campos, 2017 ²⁷	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	High
Kumsa & Tucho, 2019 ²⁸	Y	Y	Y	Y	Y	Y	N	N	Y	Y	High
Spicer et al., 2020 ³⁰	N	Y	Y	Y	Y	Y	N	Y	Y	Y	High
Kotwani et al., 2021 ²⁹	N	Y	Y	Y	Y	Y	N	Y	N	Y	High
Lima & Lima, 2022 ²²	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	High
O'Toole et al., 2022 ²³	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	High
Van Emmenis et al., 2022 ²⁴	Y	Y	Y	Y	Y	Y	UN	Y	Y	Y	High

Source: compiled by the author.

Y = Yes, N = No, UN = Unclear.

Self-care engagement strategies

Self-care engagement strategies regarding medicines were mostly identified in 55.5% of the studies^{22,25,27,29,30}, addressing health education through educational workshops, training and shared spaces for the exchange of experiences, followed by reminders^{23,24,26,28}, in 44.4%, with the use of digital devices, applications, among other forms of daily records (table 3).

The most evident medicine treatments were: antiretroviral therapy (art)^{26,28}, antihypertensives^{24,25} and antimicrobials^{29,30}, found in six of the nine studies. Regarding the type of care, primary care^{22,24,30} and secondary care²⁶⁻²⁸ presented higher parity (33.3% each), and the most reported outcome of interest was medicine adherence through self-care^{24-26,28} (table 3).

The main results showed that educational, psychosocial and technological interventions strengthen self-care, adherence to medicine and therapeutic bonding in different clinical

contexts^{22,25,27,29,30}. In renal transplant recipients, educational actions facilitated the management of immunosuppressants, even in patients with cognitive or visual limitations²⁵. In people living with HIV, strategies such as dialogue with professionals, reminders, social support and reorganization of daily life overcame barriers such as stigma and economic difficulties^{26,28}. Mental health users benefited from the recognition of their own knowledge, political participation and use of guides for empowerment²⁷. In the use of antibiotics, there was an overestimation of benefits, low perception of risks and inappropriate use, aggravated by self-medication and limited knowledge^{29,30}. When analyzing chronic diseases in general, pharmaceutical support, community resources and routines adapted for adherence stood out, with a positive impact on clinical indicators²³. Customized digital technologies have shown high potential to support complex regimes as long as they respect individual preferences and ensure confidentiality^{24,26} (table 3).

Table 3. Description of medicine treatment, type of care, strategies aimed at engagement, outcome of interest and main results (n = 9)

Author/Year	Drug treatment	Assistance type	Engagement Targeted Strategies	Outcome of interest	Main Results
Câmara et al., 2016 ²⁵	Immunosuppressants and antihypertensives	Tertiary Care	Educational health workshops for the knowledge and handling of immunosuppressants, as well as understanding of schedules, doses and effects	Treatment adherence and self-care capacity	At hospital discharge, patients demonstrated therapeutic bonding capacity and active participation for self-care and understanding the use of immunosuppressants, even those with cognitive and visual difficulties. The implementation of health educational actions awakened in renal transplant recipients the most effective exercise for self-care activities, favoring adherence and preparation for discharge.

Table 3. Description of medicine treatment, type of care, strategies aimed at engagement, outcome of interest and main results (n = 9)

Author/Year	Drug treatment	Assistance	Engagement Targeted Strategies	Outcome of interest	Main Results
		type			
Nasser e Nemes, 2016 ²⁶	ART	Secondary Care	Doctor-patient dialogue and use of reminders	Adherence to treatment monitored through Medication Event Monitoring System (MEMS); psychosocial variables related to engagement and self-care	Patients living with HIV face barriers to adherence, such as stigma, isolation, and disorganized routines. The intervention promoted self-awareness, dialogue with professionals, reorganization of daily life and use of reminders, strengthening self-care and co-responsibility in treatment, despite the emotional, social and economic difficulties that impact therapeutic engagement. The psychosocial intervention made it possible to understand the importance of self-care and the dialogue between doctor and patient as an instrument for building and/or improving adherence.
Gonçalves e Campos, 2017 ²⁷	Psychopharmaceuticals	Secondary Care	Guide and shared spaces of experiences on drug use	Patient engagement in treatment, personal experience, interaction with health professionals, participation and activism	Mental health users face stigma and medicalization centered on the disease, and it is important to recognize their own knowledge, political participation and claim rights, strengthening autonomy, co-responsibility in care and coping with the limitations imposed by services and professionals. The use of the guide proved to be an important tool for empowering users regarding their treatments. There is a need for investment in spaces for sharing experiences on illness and drug use.
Kumsa e Tucho, 2019 ²⁸	ART	Secondary Care	Personal factors: previous experience with medications; acceptance of HIV status; use of reminders; regular eating patterns; stop using alcohol/substances. Social/family factors: family and community support; religious practice. Institutional factors: free provision of art; transportation reimbursement; nutritional support; home care services; employment assistance programs.	Level of adherence to art and factors influencing adherence	Adherence to antiretrovirals was high associated with family, community and institutional support, use of reminders, self-acceptance and religious practices. Barriers included stigma, financial hardship, work, and forgetfulness. Strategies such as nutritional support, paid transportation, continuous counseling and participation in associations reinforced self-care and consistent use of art.

Table 3. Description of medicine treatment, type of care, strategies aimed at engagement, outcome of interest and main results (n = 9)

Author/Year	Drug treatment	Assistance type	Engagement Targeted Strategies	Outcome of interest	Main Results
Spicer et al., 2020 ³⁰	Antimicrobials	Primary Healthcare	Public health communication (Clear communication, symptomatic guidance and risk education)/Physician training.	Knowledge and perception of the risks of antibiotics; Expectations regarding treatment; communication with health professionals; response to campaigns with public health messages on the subject	Adults overestimate benefits and underestimate risks of antibiotics, prioritizing immediate relief. Limited understanding of resistance and adverse effects reduces caution in use. Perceived severity, emotion, and trust in the physician influence decisions. Several factors affected the perception of antibiotic indication, including type of disease, severity of symptoms, and emotional responses. When weighing the risk/benefit ratio, participants prioritized the potential benefit of antibiotics over the risk, often focusing on the presence or absence of antibiotic benefits in their discussions. Most participants were willing to follow medical recommendations. Public health communication should focus on educating patients about the frequency and severity of adverse events. Training physicians in communicating the risk-benefit ratio to patients could reduce inappropriate antibiotic use.
Kotwani et al., 2021 ²⁹	Antimicrobials	Nothing on record	Consumer knowledge and practices regarding antibiotics; Consumer awareness of current regulations regarding the purchase of antibiotics in retail pharmacies.	Knowledge and behavior of individuals regarding antibiotic consumption	Patients resort to self-medication, pharmacies and old prescriptions for common diseases. Knowledge about antibiotics is limited, misuse is frequent, driven by barriers to access, cost, trust in pharmacy attendants/professionals, and little awareness of antimicrobial resistance and sales regulations.
Lima e Lima, 2022 ²²	Insulin and metformin	Primary Healthcare	Multi-professional support, continuous guidance, education for self-care, encouragement of physical activity and healthy diet	Barriers to treatment; knowledge about self-care actions	Patients face barriers such as limited access to appointments and medications, forgetfulness, side effects, and poor adherence to lifestyle changes. Effective strategies on prevention of complications, such as diabetic foot. Overvaluation of drug treatment in the face of the adoption of healthy habits and actions that promote self-care. Need for guidance on foot self-care.
O'Toole et al., 2022 ²³	Nothing on record	Nothing on record	Pharmaceutical care, physician to patient information and daily records (reminders)	Challenges in disease self-management; resources to support adherence to glycemia treatment and foot care.	Patients face barriers in drug self-management, such as knowledge gaps, forgetfulness, cost, and stigma. Pharmaceutical support, medical summaries, community resources, daily routines, visual cues, social support and economic measures stood out in self-care, such as assistance from manufacturers, substitutions and cross-border purchases. Patients who have greater adherence to food have lower HbA1c values.

Table 3. Description of medicine treatment, type of care, strategies aimed at engagement, outcome of interest and main results (n = 9)

Author/Year	Drug treatment	Assistance	Engagement Targeted Strategies	Outcome of interest	Main Results
		type			
Van Emmenis et al., 2022 ²⁴	Antihypertensives	Primary Healthcare	Personalized reminders, 'snooze' function, automatic medication reordering and visual feedback	Patients' perception of medication adherence and the possibility of using applications to assist adherence.	Patients accepted the use of digital devices or applications, with simple reminders and feedback messages, safeguarding the confidentiality of their personal data, with greater likelihood of use if the messages were adapted to their preferences and their individual medication regimen, in terms of frequency and time of doses. Adaptability of the application to the patient's regimen and preferences was considered important.

Source: Prepared by the authors.

Discussion

The set of selected qualitative evidence demonstrated strategies for engaging in self-care, largely aimed at health education through workshops, training and spaces for exchanging experiences on the use of medicines, followed by reminders also based on digital devices. Such strategies depend on different sociocultural perspectives regarding the use of medications. One of them relates to the role of the patient and the family as a form of active partnership between them and health professionals and providers, including opportunities for health education at various times, such as direct care, the organization process and governance in health care^{12,31}. With this in mind, health education stands out in this research as a common and specific standard in engaging in patient self-care for assertive decision-making. It is understood that patient safety does not depend exclusively on institutional protocols, but also on the ability of individuals to understand, participate and share decisions related to pharmacotherapy³².

Educational interventions have emerged as central strategies for strengthening self-care, especially in kidney transplant recipients and people living with HIV. Workshops,

structured dialogues and the use of guides favored the understanding of the therapeutic regime, the bond with professionals and the co-responsibility for the treatment^{22,25-27,30}. These findings corroborate Saki et al.³³, who pointed out that health education, when centered on the patient, fosters greater adherence and improves clinical indicators. In addition, Karakurt et al.³⁴ demonstrate that educational programs focused on health literacy significantly contribute to the reduction of home medication errors, increased therapeutic adherence and strengthening of the safety culture, especially when associated with effective communication between professionals, patients and family members. However, it is important that such actions are continuous and not restricted to specific moments, ensuring the maintenance of long-term gains³⁵.

The use of reminders and digital technologies was identified in 44.4% of the studies as a relevant tool to assist in self-care adherence^{23,24,26,28}. As Sato et al.³⁶ highlighted, customized solutions, with messages adapted to the patient's regimen and profile, tend to be more effective. MHealth interventions, especially when customized, can increase therapeutic adherence in chronic diseases³⁷, which is in line with the results of Van Emmenis et al.²⁴, who demonstrated good acceptance

of applications adapted to the regimen and patient preferences. Additionally, the incorporation of digital technologies in the context of patient safety has been considered strategic by international organizations, especially due to the possibility of real-time monitoring, therapeutic traceability and strengthening of participatory pharmacovigilance³⁸. However, unequal access to technologies and the need for training in their use are still challenges to be overcome, especially among vulnerable populations³⁹. In the Brazilian context, regional inequalities in internet access and digital literacy may limit the effectiveness of these interventions, stressing the need for strategies adapted to local and socially vulnerable realities⁴.

Barriers such as stigma, social isolation, economic difficulties and adverse effects were recurrent in this synthesis, directly affecting self-care engagement^{22,23,26,28,29}. Facilitating factors, such as family, community and institutional support, were also ratified by Mbuthia et al.⁴⁰, who found that patient support networks foster motivation and the ability to maintain therapeutic routines^{41,42}. In this sense, interventions that include family members and caregivers in the educational and monitoring process can enhance self-care results. According to Oliveira and Silva⁴³, social support is directly associated with greater medicine safety, especially among the elderly and patients with multimorbidities, reducing failures in medicine administration and favoring the early recognition of adverse events.

Patient safety, especially with regard to antibiotic use and prevention of adverse events, was unevenly addressed. In some cases, there was a focus on risk perception and antimicrobial resistance education, but overall, safety-related engagement was less explored^{29,30}. There was also an overestimation of benefits and low perception of risks, leading to inappropriate practices, such as self-medication, often motivated by access barriers and limited knowledge^{29,30}. This scenario stresses the need for clear communication on

antimicrobial resistance and adverse events, as recommended by the WHO⁴⁴ and the study by Huttner et al.⁴⁵. In Brazil, this debate becomes particularly relevant in view of the high consumption of medicines and the persistence of self-medication, factors associated with the increase in incidents related to pharmacotherapy and antimicrobial resistance. In addition, ANVISA's National Patient Safety Policy and RDC No. 36/2013 emphasize the importance of user involvement in care risk prevention strategies, including the safe use of medicines. However, the results of this review suggest that patient engagement is still under-explored as a structuring axis of patient safety practices^{8,9}.

In the recovery-oriented care model, the patient's lived experience is valued and their active role in treatment is promoted, a person-centered approach that emphasizes hope, autonomy and meaning in life, moving away from the strictly medical paradigm⁴⁶. This humanistic approach stands in stark contrast to medicalization, in which decisions are predominantly clinical-centered, and user participation is limited. Practices based on shared decision-making and co-production of care transform the therapeutic relationship into a partnership of co-responsibility, thus overcoming the paternalistic model⁴⁷. In addition, the recovery-oriented practice highlights the importance of identifying the patient as a protagonist (not just a 'service user'), promoting social inclusion, rights, significant occupation and continuous support⁴⁸. This perspective expands the concept of patient safety by recognizing that more participatory and informed users tend to identify care failures early, communicate risks and actively contribute to the prevention of care-related incidents.

Limitations

This review presents a few limitations: 1) a small number of qualitative studies; 2) non-exhaustive public (the populations of children and adolescents were not investigated); 3) predominance of research in specific chronic

conditions, such as HIV and hypertension, which limits the generalization of the results to other contexts and pathologies; 4) Kotwani et al.²⁹ and Spicer et al.³⁰ did not inform the theoretical framework of the qualitative research, revealing a methodological weakness; 5) O'Toole et al.²³ did not inform the type of medicine used, restricting the analysis of patterns of narratives; 6) O'Toole et al.²³ and Kotwani et al.²⁹ did not inform the type of assistance, restricting the analysis of patterns of narratives; 7) despite the high methodological quality, the influence of the researcher/participant in qualitative research was not reported in the primary studies; and 8) absence of studies in certain geographical regions, such as in the oceanic continent.

Practical implications

Despite the limitations, there are practical contributions to the implementation of the identified strategies, such as the need to structure public health and pharmacovigilance engagement programs that integrate digital technologies, family and community support and training of professionals to communicate effectively about the risks and benefits of treatment. Such actions can provide patient-centered policies and improve drug safety. The findings also indicate the need to strengthen permanent health education actions and institutional policies that incorporate patients and families as active partners in the prevention of drug-related adverse events. In this sense, strategies of safe communication, health literacy and shared decision can contribute to greater effectiveness of patient safety actions at different levels of health care.

For the purpose of the research, it is recommended to expand studies that directly address safety in the use of medicines, the role of the family and the adaptation of strategies to different socioeconomic and cultural contexts. However, as highlighted by Braun and Clarke⁴⁹, qualitative analysis requires methodological rigor to avoid interpretive biases.

In this review, it was found that 90% of the studies presented high methodological quality, according to the JBI Checklist, stressing the robustness of the findings and the reliability of the conclusions¹⁹.

Conclusions

The findings of this qualitative synthesis reinforce that multimodal strategies, combining education, psychosocial support, technological resources and continuous monitoring, were mostly applied to promote self-care engagement, especially in chronic conditions. The patient-centered approach, which values active listening and respects cultural and individual contexts, proved to be more powerful to promote autonomy and co-responsibility, aligning with a perspective of comprehensive and humanized care.

It is also noteworthy that this research had the ability to extract meanings and patterns from narratives that highlight the real participation of patients in the self-care of medicine use, identifying barriers and strategies that varied according to clinical condition, socioeconomic context and available support. Customized digital technologies, such as mobile apps and reminders, have shown high potential to support complex regimens as long as they respect individual preferences and ensure data confidentiality. However, their effectiveness depends on factors such as digital literacy and prior adherence to treatment, and integration with face-to-face education and monitoring strategies is recommended.

Therefore, it is understood that this set of evidence demonstrates that engagement in medicine self-care is a multifactorial phenomenon that requires integrated and sustainable approaches. Culturally tailored health education interventions can enhance engagement and improve medication adherence, especially in chronic conditions such as HIV, hypertension, and diabetes. Likewise,

the combination of educational, technological and social support actions, combined with the appreciation of the patient's prominence, can generate positive impacts on both adherence and treatment safety, in line with the global guidelines for patient-centered care.

Authorship contributions

Ronchini MAK (0009-0002-4649-8564)*, Andrade AM (0000-0001-8807-1257)* and Elias FTS (0000-0002-7142-6266)* also contributed to the preparation of the manuscript. ■

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