POLYPHARMACY AND THERAPEUTIC ADHERENCE IN PRIMARY HEALTH CARE: SCOPING REVIEW

POLIFARMÁCIA E ADESÃO TERAPÊUTICA NA ATENÇÃO PRIMÁRIA À SAÚDE: REVISÃO DE ESCOPO

POLIFARMACIA Y ADHERENCIA TERAPÉUTICA EN LA ATENCIÓN PRIMARIA DE SALUD: REVISIÓN DE ALCANCE

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ABSTRACT

Considering the growing prevalence of polypharmacy in Primary Health Care (PHC), particularly among adults with chronic conditions, and its impact on therapeutic adherence, it is essential to understand the factors that interfere with this process. This study aims to map and critically discuss the scientific evidence on polypharmacy-related factors that influence therapeutic adherence and their implications for quality of life among adults receiving care in PHC. To this end, a scoping review was conducted in accordance with the *Joanna Briggs Institute* recommendations and the *PRISMA-ScR* checklist, with searches performed in six national and international databases up to June 2025. Studies published in Portuguese, English, or Spanish that addressed polypharmacy in the PHC context were included. The findings indicate that therapeutic adherence is shaped by individual, social, organizational, and therapy-related determinants, particularly regimen complexity, forgetfulness, low social support, failures in patient–provider communication, and structural limitations of health services. Multidisciplinary interventions, pharmacotherapeutic follow-up, and the use of clinical decision support technologies demonstrated potential to improve adherence; however, results were heterogeneous and strongly dependent on the care context. These findings suggest that promoting therapeutic adherence among patients with polypharmacy in PHC requires integrated, continuous, and patient-centered approaches capable of strengthening the rational use of medicines, the safety of care, and quality of life within the Unified Health System.

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Keywords: Polypharmacy. Medication Adherence. Primary Health Care. Quality of Life. Young Adult.

RESUMO

Considerando o crescimento da polifarmácia na Atenção Primária à Saúde (APS), especialmente entre adultos com condições crônicas, e seus impactos na adesão terapêutica, torna-se fundamental compreender os fatores que interferem nesse processo. Objetiva-se mapear e discutir criticamente as evidências científicas acerca dos fatores relacionados à polifarmácia que influenciam a adesão terapêutica e suas implicações para a qualidade de vida de adultos atendidos na APS. Para tanto, procede-se a uma revisão de escopo, conduzida conforme as recomendações do *Joanna Briggs Institute* e do checklist *PRISMA-ScR*, com buscas realizadas em seis bases de dados nacionais e internacionais até junho de 2025. Foram incluídos estudos publicados em português, inglês ou espanhol que abordassem a temática no contexto da APS. Desse modo, observa-se que a adesão terapêutica é influenciada por determinantes individuais, sociais, organizacionais e relacionados à terapia, destacando-se a complexidade do regime medicamentoso, o esquecimento, o baixo apoio social, falhas na comunicação profissional–paciente e limitações estruturais dos serviços de saúde. Intervenções multiprofissionais, acompanhamento farmacoterapêutico e o uso de tecnologias de apoio à decisão apresentaram potencial para melhorar a adesão, porém com resultados heterogêneos e fortemente dependentes do contexto assistencial. O que permite concluir que a promoção da adesão terapêutica em pacientes com polifarmácia na APS requer abordagens integradas, contínuas e centradas no usuário, capazes de fortalecer o uso racional de medicamentos, a segurança do cuidado e a qualidade de vida no âmbito do Sistema Único de Saúde.

Palavras-chave: Polifarmácia. Aderência à Medicação. Atenção Primária à Saúde. Qualidade de Vida. Adulto Jovem.

RESUMEN

Considerando el creciente aumento de la polifarmacia en la Atención Primaria de Salud (APS), especialmente entre adultos con enfermedades crónicas, y su impacto en la adherencia terapéutica, resulta fundamental comprender los factores que interfieren en este proceso. El objetivo del estudio es mapear y discutir de manera crítica la evidencia científica sobre los factores relacionados con la polifarmacia que influyen en la adherencia terapéutica y sus implicaciones para la calidad de vida de adultos atendidos en la APS. Para ello, se realizó una revisión de alcance, de acuerdo con las recomendaciones del *Joanna Briggs Institute* y la lista de verificación *PRISMA-ScR*, con búsquedas efectuadas en seis bases de datos nacionales e internacionales hasta junio de 2025. Se incluyeron estudios publicados en portugués, inglés y español que abordaron la polifarmacia en el contexto de la APS. Los resultados indican que la adherencia terapéutica está condicionada por determinantes individuales, sociales, organizacionales y relacionados con la terapia, destacándose la complejidad del régimen farmacológico, el olvido, el bajo apoyo social, las fallas en la comunicación profesional–paciente y las limitaciones estructurales de los servicios de salud. Las intervenciones multiprofesionales, el seguimiento farmacoterapéutico y el uso de tecnologías de apoyo a la toma de decisiones mostraron potencial para mejorar la adherencia; sin embargo, los resultados fueron heterogéneos y fuertemente dependientes del contexto asistencial. Lo que permite concluir que la promoción de la adherencia terapéutica en pacientes con polifarmacia en la APS requiere enfoques integrados, continuos y centrados en la persona, capaces de fortalecer el uso racional de los medicamentos, la seguridad del cuidado y la calidad de vida en el marco del Sistema Único de Salud.

Palabras clave: Polifarmacia. Cumplimiento de la Medicación. Modelos de Atención de Salud. Calidad de Vida. Adulto Joven.

1 INTRODUCTION

Polypharmacy, conceptualized by the simultaneous use of five or more drugs (Masnoon et al., 2017), has become a rising event in Primary Health Care (PHC) in Brazil, especially among patients with chronic diseases (Bezerra et al., 2021; Pinto et al., 2023; De Souza et al., 2024). This increase in polypharmacy is closely related to the aging of the population and the increasing prevalence of conditions such as hypertension and diabetes (Silva et al., 2020). Although polypharmacy may represent an attempt to control multiple comorbidities and improve patients' quality of life, it also carries substantial risks, such as adverse drug interactions, increased side effects, and impaired adherence to primary health care (Cunico; Leite, 2022).

In particular, therapeutic adherence is a central factor for the success of treatment and for obtaining positive health outcomes (Mota; Lanza; Nogueira, 2019). However, the simultaneous use of several medications and the lack of understanding about the therapy can lead to distrust in the treatment, increasing the chances of errors, impairing adherence and therapeutic efficacy (Cunico; Leite, 2022; De Oliveira et al., 2023). In addition, social aspects such as low educational level, financial difficulties and lack of adequate support further aggravate barriers to adherence, particularly in vulnerable and peripheral populations (WHO, 2003). These factors not only compromise treatment adherence, but also result in avoidable hospitalizations and increased health care costs (Cutler et al., 2018; Kim et al., 2021).

In turn, the multiprofessional PHC team, composed of doctors, nurses, pharmacists and other professionals, plays an essential role in mitigating these risks. Thus, among the approaches that can overcome these barriers and improve therapeutic adherence in PHC are: 1) the training of workers from the Unified Health System (SUS) and the use of protocols; 2) pharmacotherapeutic follow-up with review of prescriptions (Santos et al., 2021) and monitoring of drug interactions (Faria et al., 2022; Jandu et al., 2024); 3) an effective relationship between the patient and the interdisciplinary health team (Marasine; Sankhi, 2021); 4) a more efficient and personalized follow-up using digital technologies (Kleibert et al., 2020); 5) the instrumentalization of patients and families about the risks and benefits associated with the treatment and the importance of attending routine consultations (Muth et al., 2018; Lozano-Hernández et al., 2020); 6) the adaptation of medicines; 7) the use of decision support systems, with effective results in reducing inappropriate prescriptions and improving the quality of care (Muth et al., 2018). Although health education has the potential to promote greater involvement in the therapeutic process, adherence strategies that consider emotional support are also fundamental, since many patients feel unmotivated with

polypharmacy (Da Silva; Alves-Zarpelon; Laureano, 2021; De Oliveira et al., 2023).

In this sense, the effectiveness of health strategies in the SUS depends on overcoming organizational and structural challenges, such as the scarcity of resources and the lack of qualified professionals. PHC must ensure continuous care and regular review of medications for public policies to be effective, therefore, it is necessary to invest in the training of professionals, in decision support technologies and in the improvement of Basic Health Units (UBS), promoting therapeutic adherence and the rational use of medications, which contributes to the reduction of health costs (De Oliveira et al., 2023).

In the context of the SUS, the management of polypharmacy presents considerable challenges, not only for health professionals, but also for patients and families, due to the complexity of managing multiple drugs and the need for continuous monitoring to avoid drug interactions, adverse effects, and reduced adherence. PHC, through the UBS, plays an essential role in this process, being the main line of care for the population that uses polypharmacy.

In view of the factors mentioned above, this study aims to map and critically discuss the factors that influence therapeutic adherence and their implications for the quality of life of adults treated in Primary Health Care.

2 METHODOLOGY

This is a scoping review, conducted according to the methodological recommendations of the *Joanna Briggs Institute* (JBI) and the *PRISMA-ScR checklist*, with the objective of mapping evidence on the factors that influence therapeutic adherence in adults with polypharmacy in PHC, identifying gaps in the field of study, without determining the methodological quality of the studies analyzed (Tricco et al., 2018; JBI, 2021). Protocol 10.17605/OSF. IO/N9YDJ has been registered on the *Open Science Framework* (OSF) platform.

The methodological process followed six stages: (1) formulation of the research question and definition of objectives; (2) identification of potentially relevant studies; (3) selection of studies based on eligibility criteria; (4) extraction and organization of data; (5) analysis and thematic synthesis of the results; and (6) reporting of the evidence found. The stakeholder consultation stage was excluded because it did not apply to the scope of the study.

The guiding question was structured by the acronym PCC (*Population – Concept – Context*), which is: adults using polypharmacy (P), factors related to therapeutic adherence (C) and Primary Health Care (C).

After deliberating on the study theme, therapeutic adherence in patients with polypharmacy in PHC, the research question was defined *"What factors related to polypharmacy influence therapeutic adherence in adults treated in Primary Health Care?"*, resulting in factors related to therapeutic adherence and impacts on quality of life in users with polypharmacy. The central concept that anchored the research question was that of polypharmacy with the definition of the simultaneous use of five or more medications daily (Masnoon et al., 2017).

The search strategy was elaborated with controlled descriptors (MeSH/DeCS) and free terms in three languages, combined by the Boolean operators "AND" and "OR". The searches were carried out in the *Virtual Health Library* (VHL), *Cochrane*, *Embase*, *PubMed*, *Scopus,* and *Web of Science* databases, until June 2025. The terms "polypharmacy" (polypharmacy / medicación múltiple), "medication adherence", "primary health care" and "quality of life" were used.

The search results were imported into *EndNote Web* for the removal of duplicates and subsequently analyzed by two independent reviewers in *Rayyan*, with the arbitration of a third party in case of divergence. After screening, the eligible studies were read in full, and the data were extracted using a form adapted from the JBI, containing information on authors, year, country, objectives, type of study, sample, factors associated with adherence and non-adherence, and main conclusions.

Studies that met the following criteria were included: (i) the theme of polypharmacy in the context of Primary Health Care (PHC); (ii) studies with quantitative, qualitative or mixed methods approaches, regardless of the methodological design; (iii) were available electronically in full text in Portuguese, Spanish or English.

Studies that (i) addressed polypharmacy in contexts other than Primary Health Care, such as the home and/or hospital environment, as well as those whose central focus was the work of health professionals, were not included; (ii) duplicate publications, literature reviews, editorials, letters to the editor, abstracts of events or unpublished theses and dissertations.

The articles were analyzed descriptively, followed by an interpretation focused on responding to the objectives of the review. Then, the relevant information was grouped into main nuclei contextualized according to a diagnostic analysis.

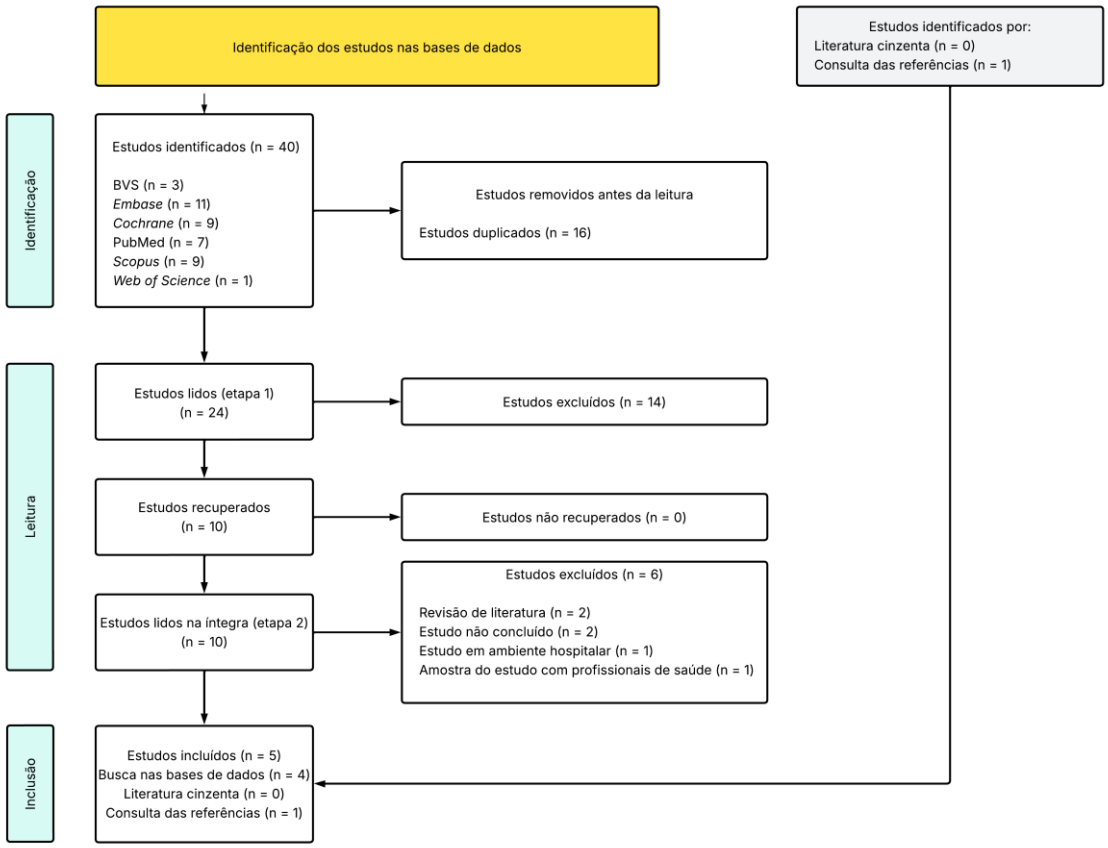
3 RESULTS AND DISCUSSIONS

After applying the methodological filters, 40 studies were identified, of which 16 duplicates were excluded. There were 24 articles left for reading titles and abstracts, resulting in 10 selected for reading in full. Of these, six did not meet the eligibility criteria, and an

additional study was included from the references, totaling five studies in the final sample (Figure 1).

Figure 1

Flowchart of the study selection process



Source: The authors, 2026.

Table 1 presents the characterization of the studies in order of publication, including author and year of publication, country, article title, objective, type of study, sample size, population, and results/conclusion.

Table 1

Bibliographic information and characterization of the studies included in the scoping review

Author (year)	Country	Title	Objective	Study Type / Sample	Population	Main results / Conclusions
Hanlon et al. (1996)	USA	A Randomized, Controlled Trial of a Clinical Pharmacist Intervention to Improve Inappropriate Prescribing in	To assess the impact of pharmaceutical intervention on inappropriat	Randomized clinical trial / 208 patients	Elderly people with polypharmacy in general practice.	The intervention reduced inappropriate prescriptions and adverse

		Elderly Outpatients With Polypharmacy	e prescribing.			events, without altering quality of life.
Prados-Torres et al. (2017)	Spain	Effectiveness of an intervention for improving drug prescription in primary care patients with multimorbidity and polypharmacy	To evaluate the efficacy of Ariadne principles in drug prescribing.	Randomized clinical trial / 400 patients	Elderly (65-74 years) with multimorbidity and polypharmacy.	There were no relevant clinical differences, but with rationalization of prescriptions.
Muth et al. (2018)	Germany	Effectiveness of a complex intervention on Prioritising Multimedication in Multimorbidity (PRIMUM)	To test the efficacy of the PRIMUM intervention on medication adequacy.	Randomized cluster clinical trial / 505 patients	Elderly with multimorbidity and polypharmacy.	There were no significant differences in adequacy or quality of life; slight improvement in EQ-5D scores.
Lozano-Hernández et al. (2020)	Spain	Social support, social context, and nonadherence to treatment in young senior patients with multimorbidity and polypharmacy	To analyze the relationship between social support and therapeutic adherence.	Cross-sectional observational study / 593 patients	Elderly (65-74 years) with multimorbidity and polypharmacy.	Non-adherence of 40.8%; adherence associated with greater functional support and better EQ-5D scores.
Cano-Polvillo et al. (2024)	Spain	Adherence to treatment in polymedicated patients using Monitored Dosage Systems (MDS)	To assess the impact of the Monitored Dosing System (MDS) on compliance.	Case Study / 1 Patient	Man, 57 years old, with chronic pain and polypharmacy (8 medications).	The MDS improved cognition, pain control, and disposition, resulting in improved quality of life.

Source: The authors, 2026.

The findings were organized into three thematic nuclei: (1) individual and social determinants of non-adherence; (2) clinical and technological interventions aimed at adherence; and (3) organizational implications and quality of life, which allowed us to contextualize the results and identify gaps in the literature, as shown in Table 2.

Table 2

Thematic synthesis of therapeutic adherence and non-adherence

Thematic Core	Author	Key Findings
1. Individual and social determinants of non-adherence	Muth et al. (2018)	Inadequate doctor-patient communication and lack of follow-up compromised the therapeutic follow-up.
	Lozano-Hernández et al. (2020)	Low social support, urban vulnerability and lack of health education.
	Cano-Polvillo et al. (2024)	Forgotten doses, duplication of medications and therapeutic complexity.
2. Clinical and technological interventions aimed at adherence	Hanlon et al. (1996)	Continuous pharmaceutical intervention with counseling and monitoring improves therapeutic compliance.
	Prados-Torres et al. (2017)	Medication reconciliation and interprofessional care increase adherence and therapeutic safety.
	Muth et al. (2018)	Physician involvement and clinical decision support systems favor therapeutic prioritization and rational use.
	Cano-Polvillo et al. (2024)	Monitored Dosage Systems (MDS) and health education support adherence in polymedicated patients.
3. Organizational and quality of life implications	Hanlon et al. (1996)	Organizational changes reduce adverse events and increase patient satisfaction.
	Prados-Torres et al. (2017)	Structured prescription and review improve quality of life and rational use of drugs.
	Lozano-Hernández et al. (2020)	Functional social support and socioeconomic conditions impact well-being and perception of health.

Source: The authors, 2026.

4 DISCUSSION

The analysis of the studies in the first thematic axis showed that factors related to the patient himself play a central role in therapeutic adherence. Among the most cited elements are forgetfulness, limited understanding of therapeutic guidelines, and difficulty in managing multiple medications (Gomes et al., 2019; Pona; Cline; Feldman, 2020; Cano-Polvillo et al., 2024). Advanced age and the presence of multimorbidities aggravate this scenario (Hanlon et al., 1996). According to the classification of the *World Health Organization* (WHO, 2003), these elements are included in the determinants related to the patient and the clinical condition, requiring more personalized and continuous interventions (Arruda; Da Silva; Malheiro, 2021).

In addition, studies highlight non-adherence with a higher prevalence among patients under 40 years of age, suggesting that younger age groups are more vulnerable to treatment abandonment (Marasine; Sankhi, 2021). On the other hand, in another study, non-adherence to treatment was related to patients with chronic diseases and advanced age, leading to increased morbidity and avoidable costs in health systems (Dwajani et al., 2018). Thus, the complexity of polypharmacy, the lack of social support, and the socioeconomic dimension

(Lozano-Hernández et al., 2020), appear as relevant barriers to adherence, especially in populations in vulnerable situations (WHO, 2003).

Scientific concern about the impacts of polypharmacy on the quality of life (QoL) of users in primary health care has intensified since 2017, as observed in the years of publication of the included studies. In Brazil, this movement emerged with the *National Primary Care Policy* (PNAB), instituted by Ordinance No. 2,436/2017, the gateway *to the Health Care Network* (RAS) (Brasil, 2017).

In this way, the PNAB highlights actions of promotion, prevention and continuous monitoring in the territory, measures that strengthen comprehensive therapeutic care in the SUS, with emphasis on multiprofessional action and the integration of pharmaceutical services in the care of users (Brasil, 2017). In addition, the international studies analyzed in this review refer to contexts similar to that of PHC, called primary care, primary health care or preventive medicine, and which play a similar role in the organization of health care at a global level.

In this context, the integrated performance of physicians, nurses, pharmacists, and other health professionals becomes essential in view of the high prevalence of polypharmacy, especially in populations with multimorbidities. The presence of different drugs in the therapeutic regimen causes clinical risks, such as interactions and adverse effects, in addition to being a challenge in therapeutic adherence, requiring coordinated strategies in health care.

The second nucleus brings together investigations that tested polypharmacy management strategies, with a focus on improving therapeutic adherence. In this sense, Prados-Torres et al. (2017) analyzed the efficacy of an intervention to improve drug prescription, however, the intervention did not demonstrate significant effects on the adequacy of prescriptions or on patients' quality of life. This study addressed that, despite the methods implemented to improve the management of polypharmacy, the complexity of treatment and the lack of continuous follow-up can hinder significant changes in patients' quality of life (Prados-Torres et al., 2017; Giacomin; Lima; Pinto, 2024). It is observed that specific interventions showed low effectiveness, such as in the PRIMUM program, which did not obtain significant improvements in the quality of life of patients (Muth et al., 2018).

On the other hand, studies indicate that the strengthening of doctor-patient communication, combined with the development of educational strategies adapted to the reality and individuality of these individuals, can favor therapeutic adherence. These findings highlight the importance of an integrated psychological approach to care, focusing on emotional support and promoting the understanding of polymedicated users about the risks

of non-adherence, reinforcing the need for user-centered actions for the continuity of therapeutic interventions (Arruda; Silva; Malheiro, 2021; Giacomin; Lima; Pinto, 2024).

In the context of polypharmacy, the incorporation of technologies such as *Monitored Dosage Systems* (MDS) and *Computerized Decision Support Systems* (CDSS) emerge as promising tools to promote therapeutic adherence, especially in complex treatment regimens (Hanlon et al., 1996; Manzanet et al., 2023). The MDS is a semi-automatic system that uses color-coded blisters to organize medications by time of day, facilitating correct use, it is used in community pharmacies, in addition it can be explored in patients with complex medication regimens, individuals who live alone or those with physical or psychological difficulties (Hanlon et al., 1996). These tools, aligned with factors related to therapy, can contribute to improving the organization of drug administration and reducing errors.

The third nucleus addresses the studies that relate polypharmacy to care management and the impacts on the quality of life of patients. The relationship between technology and personalized interventions in health settings is essential to improve therapeutic adherence, in this sense, CDSS helps health professionals in the detection of potential drug interactions and in the prevention of prescription errors that could compromise therapeutic safety, helping to prioritize and adjust treatments according to the patient's needs (Liermann et al., 2021; Hoval; Nevase, 2024). Recent studies highlight that these features allow for real-time follow-up of patients by providing individualized reminders, automated recording of medication intake, and continuous feedback on treatment compliance (Balaji et al., 2024; Hoval; Nevase, 2024). However, there is still a gap about the feasibility of implementing these solutions on a large scale in the SUS and in regions with low technological infrastructure.

Thus, the context of PHC in the SUS represents an important factor for therapeutic adherence, considering the structural challenges and the overload of services. Barriers include the shortage of qualified human resources, the absence of systematic follow-up, and the limitation of clinical decision support technologies (JBI, 2021; De Oliveira et al., 2023). These factors fall within the dimension of determinants related to the health system, according to the WHO (WHO, 2003).

In view of the evidence analyzed, it is observed that therapeutic adherence in patients with polypharmacy in PHC lacks integrated strategies, capable of contemplating the multiple dimensions that influence therapeutic behavior. While isolated interventions, such as the use of digital technologies and specialized pharmaceutical services, have significant results in specific contexts, the effects on quality of life remain uncertain. Based on the WHO structure (WHO, 2003), it is evident that future studies should articulate interventions that simultaneously consider socioeconomic, organizational, therapeutic, clinical and patient-

centered factors. Such an approach may offer arguments for the formulation of practices that promote adherence and pharmacotherapeutic safety within the scope of the SUS.

Some studies have presented methodological limitations that restrict the generalization of the findings, such as small samples, short follow-up period, and low sensitivity of the instruments. Hanlon et al. (1996) pointed out low statistical power and insufficient time to verify the effects of the intervention. Lozano-Hernández et al. (2020) highlighted biases in self-reported adherence methods. In Muth et al. (2018) and Prados-Torres et al. (2017), the reduced follow-up time limited the results, while Cano-Polvillo et al. (2024) identified inconsistencies in medication management.

Despite the growing use of clinical and technological interventions for the management of polypharmacy in PHC, the results on therapeutic adherence and quality of life remain heterogeneous. This variability seems to be associated with the absence of integrated approaches, since interventions focused exclusively on the drug regimen tend to disregard social, organizational, and subjective determinants of care.

5 STUDY LIMITATIONS

This scoping review indicates that the findings should be interpreted in light of some limitations. This is a scoping review, which did not evaluate the methodological quality of the included studies. In addition, the small number of studies and the predominance of research conducted in European contexts may limit the generalization of the results, especially for realities such as the SUS.

6 IMPLICATIONS FOR PRACTICE

By synthesizing evidence on the factors that influence therapeutic adherence in adults with polypharmacy in PHC, this review contributes to guiding more integrated care practices, subsidizing multiprofessional action, and supporting the development of strategies aligned with SUS principles.

7 FINAL CONSIDERATIONS

The analysis of the findings reveals that polypharmacy is not an isolated phenomenon, it is closely linked to social, economic and clinical factors that need to be addressed in an integrated manner. To face the challenges posed by polypharmacy, it is necessary to invest in continuous follow-up strategies and more effective interventions, which consider the complexity of therapeutic regimens and the needs of patients. The use of decision support

technologies, combined with a multiprofessional approach, can be a promising way to improve therapeutic adherence and, thus, promote a better quality of life for users.

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