

Impact of digital platforms on therapeutic adherence: a systematic review

Impacto de las plataformas digitales en la adherencia terapéutica: una revisión sistemática

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Abstract

Adherence to health care continues to be a global challenge, with non-compliance rates ranging from 20% to 50% in chronic diseases, reducing the effectiveness of health interventions. This literature review article, based on affordances theory, analyzes the impact of digital platforms, such as mobile applications and social networks (e.g. WhatsApp and Facebook) in therapeutic adherence, evaluating content, interactions and perceptions of patients. A systematic research was carried out in PubMed, SciELO and Scopus covering the period 2020-2025, and 32 relevant studies were selected. The findings indicate that mobile apps achieve 67% in acute conditions thanks to their structured content. In contrast, educational content on social networks improves the perception of patients, but does not guarantee therapeutic compliance. In addition, synchronous interactions on WhatsApp have an 82% adherence rate, outperforming asynchronous interactions. While perceived credibility is important, cross-platform benchmarking and analysis in vulnerable populations is lacking. In conclusion, digital platforms represent a promising tool to improve therapeutic adherence, but it is essential to develop validated content and personalized approaches to optimize their impact.

Keywords: impact of digital platforms, therapeutic adherence, patient perceptions.

Resumen

La adherencia a la atención en salud continúa siendo un desafío global, con tasas de incumplimiento que oscilan entre el 20 % y el 50 % en enfermedades crónicas, lo que reduce la efectividad de las intervenciones sanitarias. Este artículo de revisión bibliográfica, basado en la teoría de affordances, analiza el impacto de las plataformas digitales, como aplicaciones móviles y redes sociales (ej. WhatsApp y Facebook) en la adherencia terapéutica, evaluando contenido, interacciones y percepciones de los pacientes. Se realizó una investigación sistemática en PubMed, SciELO y Scopus abarcando el periodo 2020-2025, y se seleccionaron 32 estudios relevantes. Los hallazgos indican que las aplicaciones móviles logran un 67 % en condiciones agudas gracias a su contenido estructurado. En contraste, el contenido educativo en redes sociales mejora la percepción de los pacientes, pero no garantiza el cumplimiento terapéutico. Además, las interacciones sincrónicas en WhatsApp un 82 % de adherencia, superando a las interacciones asincrónicas. Si bien la credibilidad percibida es importante, faltan análisis comparativos entre plataformas y análisis en poblaciones vulnerables. En conclusión, las plataformas digitales representan una herramienta prometedora para mejorar la adherencia terapéutica, pero es fundamental desarrollar contenido validado y enfoques personalizados para optimizar su impacto.

Palabras clave: impacto de las plataformas digitales, adherencia terapéutica, percepciones de pacientes.

Introduction

The search for health information on the internet has become a common practice, with social media emerging as key spaces for the dissemination and enrichment of knowledge in this area (Álvarez et al., 2020). Platforms such as WhatsApp, which facilitates direct communication, and Twitter, with its broad reach, offer different alternatives that may influence therapeutic adherence. This phenomenon has given rise to infodemiology, a field that studies how digital information impacts public health, for instance, by shaping perceptions about treatments or vaccines. However, adherence remains a challenge, especially in chronic diseases like type 2 diabetes, where low rates of therapeutic compliance are associated with factors such as unhealthy lifestyles (Martínez et al., 2024).

Digital technologies, including mobile applications and social media, have proven to be promising tools for improving therapeutic compliance by providing ongoing support and motivation. Various studies demonstrate that social support on digital platforms increases adherence by 68% in patients with type 2 diabetes (Baños et al., 2023), while mobile applications achieve a 67.4% rate of pharmacological adherence in acute coronary syndromes, compared to 20.5% with traditional methods (Garmendia et al., 2025). Additionally, among young populations, synchronous interaction on social media has shown a greater impact on promoting physical activity compared to asynchronous interactions (González-Pérez et al., 2024). Nonetheless, gaps persist in the research, such as the lack of comparative studies between specific platforms (e.g., Instagram vs. WhatsApp) and the scarcity of evidence regarding their impact on vulnerable populations, such as older adults with polypharmacy (Martínez et al., 2024).

In this context, the present study analyzes the impact of different social media platforms on therapeutic adherence, considering three key variables: content, interactions, and patient perceptions, in order to promote more effective and personalized strategies. To this end, Gibson's affordance theory (1979) is adopted, which posits that the particular functionalities of each platform—such as the immediacy of WhatsApp or the virality of Twitter— influence user behavior and potential actions. This approach will allow for the interpretation of how the specific characteristics of digital platforms impact therapeutic adherence, providing a solid foundation for designing more effective and personalized strategies in the realm of digital health.

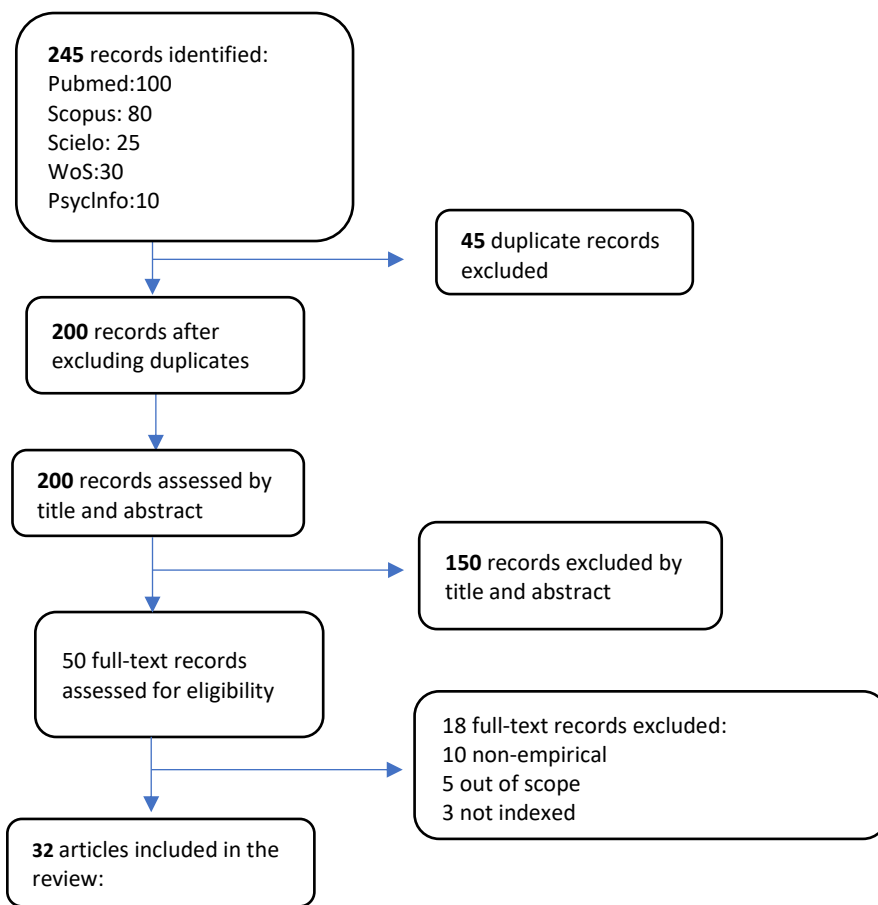
Methodology

The selection of sources was conducted through a systematic search in recognized databases such as PubMed, SciELO, Scopus, Web of Science, and APA PsycInfo, chosen for their relevance in health and social sciences. During the period from January to March 2025, keywords in both Spanish and English were applied, such as “impact of social media,” “therapeutic adherence,” “health information,” “user interactions,” and “patient perceptions.” To enhance precision, Boolean operators (AND, OR) and controlled vocabularies like MeSH were employed, adapting strategies to the syntax of each database according to standardized guidelines (BiblioGETAFE, 2023). The initial search identified 245 articles, from which duplicates were removed, and titles and abstracts were filtered, selecting those that met relevance and quality criteria for final evaluation.

In defining the study sample, inclusion and exclusion criteria were established. Publications from 2020 to 2025 were included, focusing on empirical studies or systematic reviews regarding the impact of social media on therapeutic adherence, studies in English or Spanish, and those analyzing content, user interactions, or patient perceptions. It was also required that the articles were indexed in recognized databases. Duplicated articles, studies without defined methodology, or those that did not address the relationship between social media and adherence were excluded. Exceptionally, studies prior to 2020, such as Oscalices et al. (2019), were included for their value in contextualizing digital interventions and their impact on therapeutic adherence.

Data analysis was conducted with a final sample of 32 articles, classified according to three main dimensions: content, assessing the quality and validation of information; interactions, considering social support and dynamics between users; and perceptions, measuring the trust and credibility of information on social media. Comparative tables were used for data synthesis, following the methodology of Sánchez et al. (2023). Additionally, the principles of the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline were applied to ensure transparency in the selection process (Page et al., 2021). Figure 1 details the flow of selection for the analyzed studies

Figure 1. Authors' own elaboration following PRISMA recommendations



Results

The analysis of content on digital platforms reveals that mobile applications have a significant impact on therapeutic adherence, especially in acute conditions. Garmendia et al. (2025) conducted a randomized clinical trial involving 90 post-acute coronary syndrome (ACS) patients, comparing a mobile application with traditional pharmacological instructions. Results, measured using the Morisky Questionnaire, showed that the intervention group achieved an adherence rate of 67.4%, while the control group reached 20.5% (p < 0.001). This difference was attributed to personalized reminders and content validation. In contrast, social media provides diverse educational content but with lesser impact on therapeutic compliance. Valdez et al. (2024) evaluated oncology

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patients and found that while 47.6% rated the symptom management information on Facebook positively, their adherence remained low, suggesting that a lack of structure and validation limits its effectiveness. Similarly, Valdés-Martinić et al. (2023) observed that testimonials and self-care strategies on social media increased the perception of support among hypertensive patients, yet without clear adherence metrics. In a Latin American context, Velásquez Montenegro et al. (2022) reported that 52.7% of hypertensive patients in Peru did not adhere to their treatment during the pandemic, attributing it to the interruption of services and the lack of adapted digital content on accessible platforms like WhatsApp. These findings indicate that while mobile applications excel due to their structured content, social media requires greater validation and personalization to convert positive perceptions into actual compliance. Although platforms like TikTok and Instagram were not directly evaluated in the selected studies, their potential impact can be inferred. The virality of TikTok, similar to Twitter, could amplify educational content but also misinformation, while Instagram’s visual narrative might support motivational testimonials, as observed in hypertensive patients (Valdés-Martinić et al., 2023).

User interactions vary according to platform and communication design. González-Pérez et al. (2024) compared synchronous interventions (video calls on WhatsApp) and asynchronous ones (posts on Facebook) to promote physical activity among 75 students aged 10 to 14. Results showed significant improvements in body mass index (BMI) and physical performance ($p < 0.05$) in the synchronous group, suggesting that real-time feedback is more effective than passive interactions. Similarly, Urrejola et al. (2021) analyzed remote care in Teletón Chile during the pandemic, finding that 82.02% of patients followed instructions received via social media, highlighting WhatsApp for its accessibility (44.13%) and its ability to reduce logistical barriers (17.67%). However, 34.41% expressed concern about the lack of in-person contact, indicating that while digital interactions can be effective, they lack the personalization of physical consultations. In diabetic patients, Romo (2022) observed that support groups on WhatsApp and Facebook enhanced adherence by facilitating the exchange of experiences, although the absence of professional moderation increased the risk of misinformation. Together, these studies suggest that platforms like WhatsApp, with direct and personalized interactions, have advantages over mass platforms like Facebook, where the scale of communication dilutes individual impact.

Patient perceptions of digital information influence their adherence. Urrejola et al. (2021) found that 44.13% of users valued the accessibility of clinical information on digital platforms, but 34.41% believed that the lack of human interaction affected their trust in treatments. Among oncology patients, Valdez et al. (2024) reported that although trust in digital content promoted proactive attitudes, 47.6% did not verify the source of the information, which limited its impact on adherence. Sun et al. (2024) compared professional versus personal posts by physicians on social media and found that professional content (e.g., validated advice on Twitter) improved adherence and clinical outcomes ($p < 0.01$), while personal posts (e.g., anecdotes on Instagram) reduced both ($p < 0.05$). In the case of diabetic patients in Mexico, Romo (2022) observed that 60% trusted Facebook groups, which increased their motivation to follow treatments, although without quantitative data on adherence. These studies reinforce that the perception of credibility is a critical factor, but the absence of standards to validate content on social media generates inconsistencies in its impact.

To integrate the findings, adherence rates reported across different platforms are presented. Mobile applications achieved a 67.4% adherence rate in acute conditions (Garmendia et al., 2025), while WhatsApp reached 82.02% in rehabilitation (Urrejola et al., 2021). In contrast, adherence on open social networks like Facebook was not consistently quantified, although Valdez et al. (2024) identified a 47.6% low adherence rate among oncology patients, despite positive perceptions about the available information. The heterogeneity of metrics used (e.g., Morisky Questionnaire vs. qualitative reports) prevented the execution of a formal meta-analysis, but data suggest that structured platforms outperform open social networks in specific contexts. The adherence values by platform are summarized in Table 1.

Table 1. *Therapeutic adherence rates according to selected digital platforms (2020-2025) – Authors’ own elaboration*

Platform	Adherence Rate	Context	Source
Mobile Apps	67.4%	Acute coronary syndrome	Garmendia et al., 2025
WhatsApp	82.02%	Rehabilitation	Urrejola et al., 2021
Facebook	47.6%	Oncology	Valdez et al., 2024

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Discussion

The findings confirm that mobile applications outperform social networks in acute conditions due to their affordances of structured content and personalized reminders, as demonstrated by Garmendia et al. (2025) with a 67.4% adherence rate in acute coronary syndromes (ACS). This result aligns with Oscalices et al. (2019), who reported that technological interventions increase the likelihood of adherence by 3.8 times, but extends the analysis by contrasting with social networks, where educational content improves perceptions without consistently translating into compliance (Valdez et al., 2024). The difference lies in the functionalities of the platforms: mobile applications offer control and consistency, while networks like Facebook rely on interactive formats, such as testimonials, which are effective among hypertensive patients (Valdés-Martinić et al., 2023) but lack structured follow-up. This nuance highlights a gap identified by Álvarez et al. (2020): the lack of studies analyzing how the specific characteristics of each platform modulate the impact of content on adherence.

In terms of interactions, the immediacy of WhatsApp fosters synchronous dynamics that surpass Facebook's asynchronous interactions, as evidenced by significant improvements in physical activity among youth (González-Pérez et al., 2024). This aligns with findings by Urrejola et al. (2021), who achieved an 82.02% success rate in rehabilitation using messaging platforms, underscoring their accessibility. An important finding is that previous reviews tended to prioritize reach over the depth of interactions, failing to consider that mass-reach networks like Facebook dilute personalization (Rodríguez et al., 2024). While a gap remains in the study of emerging platforms like TikTok and Instagram, it can be assumed that TikTok's potential for generating viral content could resemble Twitter's effect on increasing adherence (Sun et al., 2024). However, it should be noted that its brief format could also prioritize misinformation over validated education. Similarly, Instagram, with its visual narratives, could enhance motivational interactions like those on Facebook (Romo, 2022), but reliance on influencers jeopardizes credibility. Ultimately, this underscores the need for specific studies on emerging social networks, particularly among younger populations.

One of the factors influencing adherence is perceived credibility. In this regard, Sun et al. (2024) indicate that on Twitter, professional content improves clinical outcomes, in contrast to personal posts on Instagram, which aligns with the trust reported in support groups on Facebook (Romo, 2022). From the perspective of affordance theory, this suggests that platform algorithms, designed to maximize engagement, could inadvertently favor misinformation, which was not considered by Urrejola et al. (2021) when focusing on accessibility without evaluating information quality. On their part, Valdez et al. (2024) highlight the contrast between the lack of parameters to validate content on social media and the inherent verification in the design of mobile applications, making it evident that there is an urgent need for the definition of guidelines for the former.

In populations that consume multiple medications, such as older adults, the dynamics of content, interactions, and perceptions could change significantly. Martínez et al. (2024) indicate that the lack of adherence in this group may be associated with lifestyles and beliefs, suggesting that content on platforms should be simple and accessible, such as text messages on WhatsApp. Interactions should consider the mediation of caregivers, which has proven successful in rehabilitation (Urrejola et al., 2021). On the other hand, perceptions will depend on digital literacy (Valdez et al., 2024). Given the prevalence of chronic diseases in this age group, it is necessary to delve deeper into the study of specific needs to adapt platforms effectively.

These results expand the literature by integrating content, interactions, and perceptions within a comparative framework based on affordances, but they reveal persistent gaps: the scarcity of data on emerging platforms like TikTok and the limited adaptation to chronic contexts and vulnerable populations. These gaps are crucial for optimizing the design of digital health interventions. Methodological heterogeneity complicates comparisons of specific platforms (e.g., Instagram vs. TikTok). The focus on acute conditions underestimates chronic challenges, and the lack of data on vulnerable populations (e.g., older adults) limits generalization. Therefore, multicenter trials comparing platforms (e.g., TikTok vs. WhatsApp), analyses of psychosocial variables in vulnerable patients, and guidelines for validating medical content on social media are recommended.

Conclusions

This study identified that digital platforms influence therapeutic adherence through three interrelated mechanisms: content, user interactions, and patient perceptions. Mobile applications stand out for their high adherence rates, exceeding 67% in acute cardiovascular conditions, due to their structured content and personalized reminders. In contrast, social networks like Facebook foster positive perceptions through educational and motivational content but do not ensure therapeutic compliance. WhatsApp, on the other hand, achieves an 82% adherence rate in rehabilitation thanks to its synchronous interactions, vastly outperforming mass platforms

with asynchronous dynamics. This highlights that immediacy is a determining factor for adherence. Additionally, perceived credibility and accessibility emerge as key elements in therapeutic compliance.

From the perspective of affordance theory, social networks possess great potential to enhance adherence, but their effectiveness depends on content validation, the adaptation of interactions, and the implementation of mechanisms that reinforce patient trust. Their impact varies according to the functionalities of each platform and the clinical context in which they are used. The PRISMA methodology and the selection of 32 indexed studies from 2020 to 2025 support the rigor of the analysis, although the exclusion of unpublished studies represents a limitation. More studies are needed to compare the impact of different platforms, such as TikTok and WhatsApp, and to focus on populations with specific needs, such as older adults with polypharmacy, to optimize their impact on connected health.

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