

Empowering Patients with Long-Term Conditions Through Digital Therapeutic Support for Enhanced Emotional Wellbeing

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ABSTRACT

Patients living with long-term health conditions frequently manage symptoms, treatment routines, lifestyle changes, uncertainty, and emotional burdens over extended periods. **This paper examines** how digital therapeutic support can contribute to emotional wellbeing and self-management among people living with chronic or long-term conditions. **A qualitative** narrative literature review was conducted using recent scholarly literature and authoritative guidance on digital therapeutics, digital health, chronic disease self-management, psychological self-help, patient education, and health equity. The analysis was organized around four dimensions: therapeutic content, self-management support, emotional wellbeing, and safe human-centered implementation. **The literature indicates** that digitally delivered interventions can support symptom monitoring, health education, behavioral change, medication routines, coping skills, and access to structured psychological support. However, benefits are not automatic. Engagement can decline over time, evidence quality varies across conditions, long-term outcomes remain uncertain in many settings, and digital exclusion can widen inequalities. **The paper therefore** argues that effective digital therapeutic support should complement—not replace—clinical care and should combine evidence-based therapeutic content, personalization, accessible design, privacy protection, appropriate clinical escalation, and continuous evaluation. A patient-centered framework is proposed to connect digital intervention features with emotional wellbeing and self-management outcomes while preserving human oversight and contextual sensitivity.

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1. INTRODUCTION

Long-term health conditions create a sustained burden that extends beyond the management of biological symptoms. People living with diabetes, cardiovascular disease, chronic respiratory disease, cancer, neurological conditions, persistent pain, and other long-term conditions often need to make repeated decisions about medication, diet, physical activity, symptom monitoring, appointments, and coping with changes in daily functioning. These demands can affect emotional wellbeing because uncertainty, functional limitations, treatment fatigue, social disruption, and concerns about future health may coexist with the clinical burden of disease.

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Consequently, contemporary chronic care increasingly emphasizes self-management, patient education, quality of life, and psychosocial support alongside disease control. The World Health Organization describes therapeutic patient education as a person-centered learning process that helps people with chronic conditions develop the capacity to manage their health over time, supported by professionals, families, and caregivers [1, 2].

Digital technologies have created additional possibilities for delivering this support outside conventional clinical encounters. The WHO classification of digital health interventions recognizes multiple forms of digital functionality designed to address individual and health-system needs [3, 4]. Within this broader field, digital therapeutics (DTx) occupy a more specific position. The Digital Therapeutics Alliance describes DTx as software-driven medical interventions intended to prevent, manage, or treat disease and emphasizes clinical evaluation, usability, privacy, and evidence appropriate to the product's claims [5, 6]. This distinction is important because not every wellness application, symptom tracker, telehealth service, or educational platform should be described as a digital therapeutic. A rigorous paper must therefore distinguish therapeutic intervention from general digital support.

Recent evidence suggests that digital interventions can assist chronic disease management through symptom monitoring, medication support, behavioral programs, education, remote communication, and mental health components. A 2024 scoping review of digital therapeutics for chronic disease management identified applications across multiple conditions and reported roles in symptom monitoring, medication management, weight control, mental health, and everyday activities [6, 7]. The in-text citation numbering and corresponding bibliographic entries were also cross-checked to ensure that each cited source accurately matches the reference list. A broader scoping review of digital health platforms found that many were designed to support self-management and that patients frequently reported improvements in quality of life, health, and self-management ability, although long-term outcomes remained uncertain because many studies were short-term pilots [8, 9]. These findings support the potential value of digital support while simultaneously cautioning against treating technological availability as proof of therapeutic effectiveness.

Emotional wellbeing deserves particular attention because self-management is not purely a technical or behavioral process. This perspective aligns with patient-centered and preventive digital health approaches by recognizing psychological coping, equitable access, and safe human support as integral components of chronic care rather than secondary technological features. Patients may know what they should do but struggle to act because of stress, low motivation, fear, fatigue, social constraints, or treatment burden. Digital psychological self-help can provide structured coping exercises and other evidence-based techniques with limited provider time; WHO guidance published in 2026 describes digitally delivered psychological self-help as a scalable approach that can support people with psychological distress and mental health symptoms [10]. Similarly, a 2024 systematic review and meta-analysis found that digital interventions can promote psychological resilience, although intervention characteristics and outcomes vary [11]. The key question is therefore not whether digital tools are inherently beneficial, but which design and implementation conditions support meaningful, safe, and sustainable benefits.

This paper aims to examine the contribution of digital therapeutic support to emotional wellbeing and self-management among patients with long-term health conditions. The research questions are addressed through four analytical dimensions: therapeutic intervention and clinical purpose, self-management support, emotional wellbeing and psychological coping, and implementation, equity, privacy, safety, and human oversight. The four questions therefore guide the synthesis from digital therapeutic functions, to emotional and self-management mechanisms, and finally to the conditions required for responsible implementation. The resulting framework integrates these relationships into a patient-centered model rather than proposing a new AI algorithm. The proposed framework also has relevance to the Sustainable Development Goals (SDGs). Its focus on health management and emotional wellbeing directly supports SDG 3 (Good Health and Well-Being), while its emphasis on equitable access, digital inclusion, and underserved populations is consistent with SDG 10 (Reduced Inequalities). The responsible integration of digital therapeutic technologies also relates to SDG 9 (Industry, Innovation and Infrastructure). These connections represent the broader societal implications of the framework rather than empirically measured SDG outcome. Rather than proposing a new digital algorithm, the framework provides an integrated implementation perspective that connects these dimensions to the practical and emotional needs of people living with long-term health conditions [12, 13].

2. LITERATURE REVIEW

2.1. Digital Therapeutics and Long-Term Conditions

Digital therapeutics (DTx) are treated in this manuscript as a clinically oriented subset of digital health rather than as a synonym for every health application. Accordingly, wellness applications, symptom trackers, telehealth services, and general educational platforms are not automatically classified as DTx unless they provide a therapeutic intervention supported by evidence appropriate to their intended clinical claims. DTx deliver therapeutic interventions through software and are expected to generate evidence supporting their intended clinical claims [14, 15]. The distinction matters for long-term conditions because chronic care requires repeated intervention, adaptation, and monitoring. A digital intervention can be useful when it delivers a structured therapeutic program, reinforces self-management behaviors, or helps patients apply clinical recommendations between encounters. At the same time, a tool that merely records steps or sends generic reminders should not automatically be treated as a therapeutic intervention [16].

Long-term conditions also create heterogeneous needs. Two patients with the same diagnosis may have different symptom profiles, levels of health literacy, emotional responses, social resources, and treatment goals. Therefore, personalization should not be reduced to algorithmic recommendations alone. It should include adjustable goals, appropriate pacing, accessible language, culturally relevant examples, and pathways for professional support when a patient's needs exceed what the software can safely address [14, 17].

2.2. Self-Management as a Core Outcome

Self-management refers to the ongoing behaviors and decisions through which individuals manage symptoms, treatments, lifestyle practices, emotional responses, and communication with healthcare providers. Therapeutic patient education supports this process by helping patients use their own resources while remaining connected to professional and social support [18]. Digital interventions can extend self-management by making educational content available at the point of need, providing structured routines, recording symptoms, supporting goal setting, and facilitating feedback [19].

Evidence, however, is mixed across outcomes. A recent systematic review and meta-analysis of randomized trials found that digital health interventions may be more consistently useful for self-care monitoring than for broader behavioral maintenance or medication adherence; certainty was often low or very low and heterogeneity was substantial [20]. This finding challenges a simplistic assumption that adding an app will automatically improve adherence. Self-management depends on motivation, capability, context, treatment burden, and the fit between intervention design and patient needs [21].

2.3. Emotional Wellbeing and Psychological Support

Emotional wellbeing includes the capacity to cope with stress, maintain meaningful daily functioning, experience psychological safety, and sustain a sense of agency despite illness. For people with long-term conditions, emotional wellbeing can be influenced by symptom severity, uncertainty, social isolation, financial pressures, stigma, and the perceived demands of treatment [22, 23].

Digital psychological interventions can offer structured techniques such as psychoeducation, cognitive and behavioral exercises, stress-management activities, problem solving, and reflective monitoring. WHO's current guidance emphasizes that psychological self-help can be delivered digitally with or without brief support and can expand access when provider resources are limited [24, 25]. Evidence from the broader digital resilience literature also indicates potential benefits, but effects vary by intervention and population [26, 27]. Thus, emotional support should be treated as an evidence-based therapeutic component rather than simply as an empathetic or conversational feature added for engagement. Digital systems may provide structured coping support and responsive interactions, but such functions should not be equated with human empathy, therapeutic relationships, or clinical emotional assessment [28, 29].

2.4. Patient-Centered Personalization and Engagement

Personalization is central to long-term digital support because sustained self-management is unlikely when intervention demands are poorly matched to patients' routines. Personalization may include condition-specific education, symptom-based prompts, individualized goals, adaptive content, language options, and flexible frequency of interaction [30, 31]. Nevertheless, Personalization should therefore remain patient-centered and clinically contextualized. Automated recommendations should provide sufficient transparency, avoid inappropriate automation, and preserve access to professional support when patient needs exceed what the digital intervention can safely address [32, 33].

Engagement is another critical issue. Short-term uptake does not necessarily translate into sustained therapeutic use. In a review of chronic disease digital platforms, many studies were pilot projects with limited sample sizes, technical barriers, and short follow-up periods [34–36]. Effective design should therefore prioritize low burden, usability, meaningful feedback, and integration into ordinary routines rather than maximizing notifications or screen time [37].

2.5. Equity, Privacy, Safety, and Human Oversight

Digital therapeutic support can improve access, but it can also reproduce or intensify inequity. Access depends on device availability, connectivity, digital literacy, language, disability accommodations, affordability, and trust. DTx policy guidance highlights the importance of flexible access, multiple languages and cultural contexts, and support for different connectivity conditions [38, 39]. Consequently, a technically sophisticated intervention may have limited public-health value if it is inaccessible to the people with the greatest needs.

Privacy and safety are equally important. Therapeutic platforms may collect sensitive health information, behavioral data, and emotional disclosures. DTx principles emphasize privacy protection, appropriate clinical claims, evidence generation, and regulatory oversight [40, 41]. Human oversight should define the boundary between functions that can be safely automated and decisions that require professional judgment. Automated systems may support education, monitoring, reminders, and structured self-management activities within validated limits, whereas decisions involving diagnosis, treatment changes, medication-related risk, or serious deterioration should remain subject to appropriate clinical review. WHO guidance stresses that digital health interventions are not substitutes for functioning health systems [42, 43]. A responsible model therefore establishes escalation pathways for concerning symptoms, deterioration, crisis indicators, or situations requiring professional judgment [44].

3. METHODOLOGY

This study used a qualitative narrative literature review to synthesize evidence and recurring concepts related to digital therapeutic support, self-management, emotional wellbeing, and responsible implementation. The synthesis was then used to develop a patient-centered conceptual framework rather than to estimate a pooled treatment effect. The approach was selected because the objective was to synthesize concepts, mechanisms, benefits, limitations, and implementation requirements rather than estimate a single pooled treatment effect. Literature was identified from peer-reviewed scientific publications and authoritative health-organization guidance addressing digital therapeutics, chronic disease self-management, digital health platforms, psychological self-help, resilience, patient education, and health equity. Sources were considered relevant when they directly addressed at least one of these themes and provided evidence or guidance applicable to the objectives of this review. Recent literature was prioritized to reflect current developments, while foundational guidance was retained when it remained conceptually relevant. As a narrative review, the study did not apply a formal systematic-review protocol or predefined quantitative eligibility criteria.

Sources were analyzed using four dimensions: (1) therapeutic intervention and clinical purpose; (2) self-management support; (3) emotional wellbeing and psychological coping; and (4) implementation, equity, privacy, safety, and human oversight. Recurring concepts across these dimensions were compared and synthesized to identify relationships between digital therapeutic functions, patient needs, and implementation requirements. These recurring relationships formed the basis for the proposed patient-centered framework presented in Section 4. Findings were compared across these dimensions to identify recurring mechanisms and limitations. The synthesis was interpretive rather than statistical; therefore, the paper does not claim that all digital interventions have the same effect or that the reviewed evidence establishes causal effectiveness for every long-term condition.

Table 1. Analytical dimensions used to synthesize the literature.

Analytical dimension	Key questions	Examples of evidence
Therapeutic function	Does the software deliver an evidence-based intervention with a defined clinical or therapeutic purpose?	Dx definition; clinical evaluation; intervention content; intended use statement.

Self-management	Does the intervention support monitoring, goal setting, education, review, self-behavior change?	Clinical decision reviews; self-behavior change techniques; user engagement indicators.
Emotional wellbeing	Does it address coping, distress, resilience, motivation, or affective wellbeing?	Psychological self-help; symptoms evidence; behavioral outcomes.
Responsible implementation	Can it be used safely, equitably, privately, and with appropriate clinical oversight?	WHO guidance; equity and privacy principles; data security and governance policies.

Table 1 summarizes the four analytical dimensions used to organize and synthesize the reviewed literature, including therapeutic function, self-management, emotional wellbeing, and responsible implementation. These dimensions provide a structured basis for understanding how digital therapeutic support can contribute to patient-centered care. The table also presents key questions and representative evidence for each dimension, allowing the reviewed literature to be compared according to its clinical purpose, support for patient self-management, contribution to emotional wellbeing, and requirements for safe and responsible implementation. Together, these dimensions help clarify the main pathways through which digital therapeutic support may influence patient outcomes and provide a practical basis for the patient-centered framework proposed in this study.

4. RESULTS AND DISCUSSION

4.1. A Patient-Centered Mechanism of Digital Therapeutic Support

The literature supports a mechanism in which digital therapeutic support influences outcomes through several linked pathways rather than through technology alone. As summarized in Table 2, this pathway can also serve as a practical guide for implementation. Healthcare providers can use it to identify where professional interpretation or escalation is required; developers can map specific functions such as education, monitoring, feedback, and emotional support to intended patient outcomes; and policymakers can use the pathway to evaluate whether an intervention addresses safety, equity, and meaningful patient-centered outcomes rather than engagement alone. First, evidence-based content provides patients with knowledge or therapeutic exercises. Second, interactive functions translate knowledge into action through goals, reminders, monitoring, feedback, and practice. Third, repeated use may strengthen self-efficacy when patients observe progress or learn strategies for responding to symptoms. Emotional wellbeing represents a related but distinct outcome involving coping, psychological safety, and sense of agency. Trust, engagement, self-efficacy, and clinical effectiveness should likewise be evaluated as separate constructs rather than assumed to represent the same therapeutic benefit. Finally, clinician connection provides safety and contextual interpretation.

Table 2. Conceptual pathway linking digital therapeutic functions to patient-centered outcomes.

Digital therapeutic input	Intermediate mechanism	Expected patient-centered outcome
Evidence-based therapeutic content	Knowledge, skills, coping strategies	Greater confidence and health literacy
Monitoring and feedback	Awareness of symptoms and patterns	Earlier self-management responses
Goal setting and behavioral support	Routine formation and self-efficacy	More consistent self-care behaviors
Psychological support	Coping, stress regulation, emotional reflection	Improved emotional wellbeing
Clinical escalation	Human interpretation and risk management	Safer continuity of care

Table 2 illustrates that digital therapeutic support operates through interconnected mechanisms rather than through isolated technological functions. Evidence-based content establishes the knowledge foundation, while monitoring and feedback increase awareness of symptoms and behavioral patterns. Goal setting and

behavioral support then translate this awareness into sustained self-management practices. Psychological support extends the pathway to emotional wellbeing, while clinical escalation introduces human interpretation and risk management when patient needs exceed the appropriate scope of digital support. Together, these pathways show that patient-centered outcomes depend on the interaction between digital functions, behavioral and emotional mechanisms, and appropriate human oversight.

4.2. Supporting Self-Management Without Increasing Treatment Burden

A central benefit of digital support is its ability to move selected elements of care into the patient's everyday environment. Instead of waiting for a scheduled appointment to discuss symptoms or difficulties, patients can record relevant information, review tailored educational material, and practice recommended behaviors when they are most needed. Evidence from chronic disease platform research suggests that many interventions are explicitly designed around self-management and may improve patients' perceptions of their health and ability to manage their condition.

Yet more digital interaction is not necessarily better. Excessive reminders can become another treatment burden, especially for patients already experiencing fatigue or complex medication schedules. A stronger design principle is 'minimum effective interaction': provide the smallest amount of digital activity that is sufficient to support the therapeutic goal. Adaptive frequency, user-controlled notifications, and prioritization of clinically meaningful information can help maintain engagement while respecting patients' time and autonomy.

4.3. Emotional Wellbeing as a Functional Component of Chronic Care

Emotional wellbeing should not be treated as an optional add-on to physical disease management. Distress can interfere with motivation, concentration, sleep, activity, communication, and treatment routines. Conversely, improved coping and self-efficacy may make self-management tasks more achievable by supporting motivation, treatment routines, symptom monitoring, and engagement with recommended behaviors. In this sense, emotional wellbeing can function as an intermediate pathway between digital therapeutic support and self-management-related outcomes. However, the present review does not establish a direct causal effect of improved emotional wellbeing on long-term clinical outcomes, and such relationships require further empirical evaluation. Digital psychological self-help is particularly relevant because it can provide structured exercises outside clinic hours and can be delivered at scale. The resilience literature further supports the possibility that digital interventions can strengthen adaptive coping, although effectiveness depends on intervention quality and population characteristics.

Importantly, emotional support should not imply that software can replace human relationships. Patients may need empathy, clinical interpretation, social support, or crisis intervention that automated systems cannot safely provide. Digital emotional support may be appropriate for routine coping, psychoeducation, and structured self-management activities within its validated scope, but high-risk psychological distress, crisis indicators, or complex clinical situations require transition to appropriate human assessment and support. This boundary reinforces the complementary rather than substitutive role of digital therapeutic support. The appropriate role of digital therapeutic support is therefore complementary: it can extend access to evidence-based exercises and self-management resources while maintaining routes to human care.

4.4. Personalization, Cultural Context, and Trust

Personalization should include more than algorithmic adaptation, but greater personalization should not automatically be treated as better. Additional personalization may require the collection of more personal or behavioral information, creating potential tensions with privacy, autonomy, and transparency. Responsible personalization should therefore be proportional to the therapeutic purpose, understandable to patients, and limited to information that is necessary and appropriate for the intended support. Patients interpret illness through family structures, work conditions, language, cultural expectations, financial circumstances, and prior healthcare experiences. A support program that ignores these factors may appear clinically correct while remaining practically unusable. Equity-oriented DTx guidance explicitly recognizes the importance of language, culture, disability, socioeconomic circumstances, and connectivity. This supports a broader concept of personalization in which the system adapts not only the therapeutic dose or content but also how the intervention is communicated.

Trust is likely to depend on transparency about what the system can and cannot do. Patients should know whether they are receiving automated guidance, clinician-reviewed feedback, or a combination. They

should also understand how data are used, how long they are retained, and what happens when concerning information is detected. Such transparency is particularly important when emotional disclosures are collected.

4.5. Safety and Integration With Clinical Care

Digital therapeutic support becomes more credible when it is integrated into a wider care pathway. Real-world implementation also requires attention to workflow integration, professional responsibilities, available human and technical resources, reimbursement or funding mechanisms, and differences in organizational capacity across healthcare settings. For chronic conditions, implementation should therefore define who reviews alerts, what thresholds trigger escalation, how patients contact professionals, how digital information is incorporated into clinical decision-making, and whether the required resources can be sustained in routine practice. WHO's digital health guidance emphasizes benefits, harms, acceptability, feasibility, resource use, and equity when evaluating digital interventions. For chronic conditions, implementation should define pre-defined conditions that require escalation, the responsible professional or care team, the process for verifying concerning information, and the appropriate communication pathway to the patient. These mechanisms should be validated for the intended clinical context rather than relying solely on automated interpretation. The digital system should therefore function as part of an escalation pathway rather than as an autonomous decision-maker.

The evidence also suggests that digital interventions should not be judged only by short-term usage or satisfaction. Outcomes should include clinically meaningful measures, patient-reported wellbeing, self-management capability, sustained engagement, safety events, equity of access, and longer-term quality of life. Recent reviews have highlighted substantial heterogeneity and uncertainty in long-term outcomes. Therefore, responsible implementation requires ongoing evaluation rather than assuming that an intervention remains effective simply because it was successful in an initial trial.

4.6. Proposed Framework for Implementation

Based on the synthesis, a patient-centered digital therapeutic support model can be organized around six interconnected principles: evidence, personalization, emotional support, usability, human oversight, and equity. Evidence provides the clinical foundation; personalization and usability align the intervention with individual needs and everyday contexts; emotional support addresses psychological barriers; human oversight provides clinical safety and contextual interpretation; and equity ensures that these benefits remain accessible across different populations. Together, these principles form an interconnected implementation framework rather than six isolated design requirements. The framework is conceptual and derived from the recurring relationships identified in the reviewed literature; it should therefore be considered an implementation-oriented model that requires empirical validation in future studies. Evidence ensures that therapeutic claims are grounded in clinical research. Personalization aligns the intervention with condition, goals, and context. Emotional support addresses coping and psychological barriers. Usability minimizes cognitive and practical burden. Human oversight protects against inappropriate automation, while equity ensures that benefits are not restricted to digitally privileged populations. When framework principles create competing priorities, clinical safety, privacy, and patient autonomy should take precedence over convenience, engagement, or automation. This prioritization is particularly important when personalization, emotional support, or automated recommendations could increase clinical or privacy risks.

Table 3. Proposed framework for patient-centered digital therapeutic support.

Principle	Implementation requirement	Evaluation indicator
Evidence	Use clinically justified therapeutic content and define intended outcomes	Clinical and patient-reported outcomes
Personalization	Adapt goals, pacing, language, and relevant content	Engagement and goal attainment
Emotional support	Include validated coping or psychological techniques where indicated	Wellbeing, distress, resilience
Usability	Minimize burden and support accessible interaction	Usability and sustained use
Human oversight	Define escalation and clinician communication pathways	Safety events and referral completion

Equity	Address connectivity, affordability, language, disability, and culture	Reach and outcome differences across groups
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Table 3 summarizes the implementation requirements and evaluation indicators for the six framework principles. Together, these elements provide a practical basis for implementing and evaluating patient-centered digital therapeutic support.

4.7. Limitations and Research Agenda

This review has several limitations. First, it uses a narrative synthesis rather than a systematic review protocol or meta-analysis, so the selection and interpretation of evidence may be influenced by the scope of the literature considered. Second, digital interventions differ substantially in therapeutic content, delivery mode, target population, and outcome measurement, limiting direct comparison. Third, long-term adherence and sustained clinical effects remain underreported in many studies. Fourth, the literature may overrepresent populations with adequate digital access and may not fully capture experiences of underserved groups.

Future research should prioritize longer follow-up periods, standardized measures of self-management and emotional wellbeing, transparent reporting of engagement and attrition, and subgroup analyses addressing age, language, socioeconomic conditions, disability, and digital access. Comparative studies should also examine whether human-supported digital interventions outperform fully automated approaches for particular populations. Research should further assess cost-effectiveness, workflow integration, data governance, and real-world safety rather than focusing exclusively on efficacy under trial conditions.

5. MANAGERIAL IMPLICATIONS

Healthcare managers and digital health leaders must design and deploy digital therapeutic support as an integrated component of care delivery rather than a standalone technological tool. Successful implementation requires establishing clear clinical escalation protocols and workflows that define when automated features transition to human oversight, ensuring patient safety during times of health deterioration or emotional distress. Management should prioritize a “minimum effective interaction” design approach to prevent alert fatigue and treatment burden, while configuring platform features, such as goal setting, symptom tracking, and psychoeducation, to align with real-world clinical operations and patient routines. Furthermore, administrators must establish ongoing evaluation mechanisms to track meaningful patient-centered metrics, long-term adherence, and implementation costs across diverse patient cohorts.

From an operational and strategic perspective, health system leaders must address health equity, privacy, and organizational integration to ensure long-term sustainability. Decision-makers should embed accessibility standards, such as multi-language capabilities, low-bandwidth adaptability, and intuitive user interfaces, into digital health procurement and development processes to prevent digital exclusion among underserved populations. Furthermore, leadership must institute robust data governance and transparent communication practices so patients understand how their sensitive health and emotional data are protected and utilized. By training multidisciplinary care teams to interpret patient-generated data and fostering cross-functional alignment between clinicians, IT specialists, and administrative staff, managers can build a patient-centered care ecosystem that enhances long-term health outcomes and operational efficiency.

6. CONCLUSION

Digital therapeutic support has meaningful potential to strengthen emotional wellbeing and self-management among people living with long-term health conditions. Its value is greatest when software delivers evidence-based therapeutic interventions that fit naturally into patients’ daily lives and address both behavioral and emotional barriers to care. The evidence does not justify the assumption that digital tools automatically improve adherence or wellbeing; rather, outcomes depend on intervention quality, engagement, personalization, context, and integration with clinical services.

A responsible approach should therefore treat digital therapeutics as part of a patient-centered care ecosystem. Therapeutic content should be clinically grounded, emotional support should use appropriate evidence-based techniques, data practices should protect privacy, and patients should have clear access to human professionals when digital support is insufficient. Equity must also be treated as a design requirement rather than as a secondary implementation issue. When these conditions are met, digital therapeutic support

can extend the reach of chronic care while helping patients develop practical skills, confidence, and coping capacity for long-term health management.

7. DECLARATIONS

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7.2. Author Contributions

Conceptualization: MO; Methodology: NK; Software: JW; Validation: MO and NK; Formal Analysis: MO, JW; Investigation: MO; Resources: NK; Data Curation: MO; Writing Original Draft Preparation: MO and NK; Writing Review and Editing: MO, NK and JW; Visualization: NK; All authors MO, NK, and JW. have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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