INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 16, Issue 6, (2026) E-ISSN: 2222-6990

From Health Adoption Intention to Actual Use among Community-Dwelling Older Adults: The Moderating Role of Social Support

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DOI Link: http://dx.doi.org/10.6007/IJARBSS/v16-i6/28515

Published Date: 17 June 2026

Abstract

Community-dwelling older adults increasingly encounter patient-centered mobile health (mHealth) tools for medication management, symptom monitoring, and communication with care providers, yet willingness to use these tools often does not progress to actual use. Existing adoption studies explain intention formation more often than the transition from intention to actual use, leaving enactment after intention formation insufficiently theorized for older populations. This paper addresses that gap by using theory to guide an integrative narrative review and conceptual synthesis of the literature on older adults, mHealth use, social support, and conversion from intention to behavior. Priority was given to studies published from 2021 to 2026, while classic theoretical sources were retained only when they provided the original conceptual foundation. Based on this synthesis, the paper treats mHealth adoption intention as the behavioral precursor, actual use as the focal outcome, and instrumental social support as a moderator that strengthens the conversion from intention to use when practical barriers arise. The resulting framework advances two propositions and offers a focused basis for future empirical testing, community support design, and digital inclusion policy aimed at reducing attrition after intention formation among older adults.

Keywords: Community-Dwelling Older Adults, Mhealth, Adoption Intention, Actual Use, Social Support

Introduction

Patient-centered mobile health (mHealth) tools are increasingly used to extend health self-management beyond clinical settings. For community-dwelling older adults, these tools are relevant because routine care often depends on medication management, symptom monitoring, appointment communication, and timely contact with care providers outside the clinic (Pan et al., 2021; Qiu et al., 2025). Studying this area is therefore necessary not only because older adults may express interest in mHealth, but because the expected benefits of mHealth are realized only when intention becomes actual use. Recent studies report attrition after intention is formed, linked to interface complexity, setup burdens, limited digital

confidence, and the absence of timely assistance (Jakob et al., 2022; Mustafa et al., 2022). This pattern is consistent with research on intention and behavior showing that intention is important but insufficient when situational barriers intervene (Rhodes et al., 2022).

The significance of this study lies in clarifying a practical problem for three groups. For older adults and family caregivers, it identifies why stated willingness may fail to produce usable self-management support. For health providers and community services, it indicates where assistance should be located, such as setup, feature navigation, and recovery after failed attempts. For mHealth researchers and designers, it shifts attention from initial acceptance to the conditions that make use sustainable. This focus is important because programs that increase awareness or registration may still have limited effectiveness if older adults cannot translate intention into routine use.

Accordingly, the present paper examines the conditions under which mHealth adoption intention becomes actual use among community-dwelling older adults. It advances a focused conceptual model in which mHealth adoption intention is treated as the precursor, actual use as the outcome, and instrumental social support as a moderating condition when practical barriers arise. Social support is emphasized because enactment outside institutional supervision depends on ordinary assistance with app installation, account setup, login recovery, feature interpretation, troubleshooting, and continued use (Kebede et al., 2022). On that basis, the paper develops two propositions and considers implications for future empirical testing and support design. The remainder of the paper is organized into three main sections: the literature review and conceptual framework, the discussion of implications and limitations, and the conclusion.

Literature Review and Conceptual Framework

Scope and Review Design

The article is conceptual in purpose and is based on a review of the literature, not on a systematic review estimating pooled effects or an empirical study testing relationships. Its scope is limited to community-dwelling older adults using patient-centered mHealth for health self-management. It does not address institutional settings, systems focused on clinicians, or general consumer technology use. Within that boundary, the model focuses on one relationship between mHealth adoption intention and actual use, and one condition specific to that stage, instrumental social support available when barriers arise. It does not attempt to model the full set of antecedents of intention or the full range of downstream outcomes. This bounded scope is deliberate. A narrower conceptual frame makes it easier to identify where attrition occurs in the adoption sequence and which condition is theoretically most relevant once intention has already formed.

The review design combines an integrative narrative review with a conceptual synthesis informed by theory. Literature was identified through Scopus, Web of Science, and PubMed, with priority given to studies published from 2021 to 2026. Earlier sources were retained only when they provided foundational statements for Protection Motivation Theory, COM-B, or the canonical literature on intention and behavior. The search covered three clusters: research on the intention-behavior gap, studies of mHealth adoption and use among older adults, and research on social support in technology use in later life. Studies were retained when they helped define the focal relationship, clarify the moderator, or justify the model

boundary. The selection rule was conceptual relevance rather than effect aggregation. This review design suits the paper's purpose because the goal is theoretical specification rather than synthesis of effect sizes. The review privileges conceptual fit, stage relevance, and explanatory usefulness for the transition from intention to actual use.

Theoretical Basis and Core Constructs

The framework draws on three theoretical sources for different purposes. The literature on the intention-behavior gap defines the focal problem, COM-B clarifies why opportunity conditions matter during enactment, and Protection Motivation Theory (PMT) marks the upstream boundary of the model by explaining how protective intention can form before behavior occurs. Used together, these sources help separate three analytical questions that are often conflated in adoption research: how intention is formed, why intention does not always become behavior, and which environmental condition may strengthen enactment once motivation already exists.

The Intention-Behavior Gap

A central insight from health behavior research is that intention is a necessary but incomplete precursor of action. Recent reviews show that the strength of the link between intention and behavior varies with planning demands, self-regulatory capacity, habit, and environmental constraints (Rhodes et al., 2022). In technology adoption research, intention is more often treated as the proximate predictor of use (Yang et al., 2024). For older adults using mHealth, that transition is less straightforward because interface complexity, setup burdens, and the absence of timely help can interrupt enactment after intention has already formed (Jakob et al., 2022; Wu et al., 2022). This literature justifies treating the relationship between intention and actual use as a problem requiring explicit explanation rather than assumption. It also indicates that failure after intention has formed should be interpreted as a theoretically meaningful stage in the adoption process rather than as residual variation in a general model of acceptance.

Opportunity Conditions and Instrumental Support

COM-B conceptualizes behavior as contingent on capability, opportunity, and motivation (Michie et al., 2011; Willmott et al., 2021). The present paper draws selectively on the opportunity component. Opportunity refers to environmental conditions that make action possible or easier. For mHealth use in later life, instrumental support from family members, peers, or community staff fits this role. It helps resolve setup problems, feature navigation difficulties, troubleshooting demands, and recovery from failed attempts (Aranha et al., 2021; Kebede et al., 2022). COM-B therefore provides the theoretical basis for treating social support as relevant to enactment and for positioning it as a moderator of the relationship between intention and actual use rather than as a diffuse background factor. This selective use of COM-B also helps keep the model focused. Capability and motivation remain relevant to the broader adoption process, but the present framework isolates the opportunity condition most likely to explain whether intended use can be carried out in practice.

PMT and the Upstream Boundary of the Model

PMT explains how threat appraisal and coping appraisal generate protective intention (Rogers, 1983). In this paper, PMT is used more narrowly to define what lies upstream of the focal model. The present argument begins after intention has formed, so threat appraisal,

response efficacy, response cost, and related PMT mechanisms are not modeled as focal constructs here. PMT remains useful because it clarifies why intention should be treated as analytically distinct from actual use, while the paper's explanatory emphasis stays on enactment rather than intention formation. This boundary helps prevent conceptual overlap between predictors of intention and conditions that shape its later realization.

Against this theoretical background, the model is organized around three analytically distinct constructs. Table 1 summarizes their working definitions and roles.

Table 1

Summary of Core Constructs

Construct	Working definition	Role in the model
mHealth adoption intention	The deliberate readiness of an older adult to use patient-centered mHealth tools for health self-management.	Behavioral precursor
Actual use	Observable use of mHealth in self-management practice beyond downloading an app, registering an account, or trying a feature once.	Primary outcome
Instrumental social support	Practical assistance with setup, feature navigation, troubleshooting, and recovery after failed attempts.	Moderating condition

Health Adoption Intention and Actual Use

mHealth adoption intention refers to the deliberate readiness of an older adult to use mHealth tools for health self-management (Wu et al., 2022). It is the outcome of prior evaluative and motivational processes, but those antecedents are not modeled directly here. The paper begins once intention has formed and asks whether that intention becomes behavior. Actual use denotes observable use of mHealth in self-management practice beyond downloading an app, registering an account, or trying a feature once (Mustafa et al., 2022). This paper uses actual use as the primary outcome term. Related expressions in prior studies, such as continued use or sustained engagement, are treated here as descriptive language for persistence after intention has formed rather than as separate focal constructs. The distinction matters because older adults may express willingness yet still fail to reach actual use once implementation barriers appear (Jakob et al., 2022; Rhodes et al., 2022). The distinction also improves construct validity. A person who downloads an application, creates an account, or tries one feature once has not necessarily integrated mHealth into ongoing self-management practice. The focal outcome in this paper concerns enacted use rather than symbolic adoption or use on only one occasion.

Instrumental Social Support as a Boundary Condition

In this framework, social support is defined narrowly as instrumental support available when barriers to mHealth use arise (Kebede et al., 2022). This includes practical assistance from family members, peers, community volunteers, or service staff with device setup, navigation of app features, troubleshooting, and recovery after failed attempts (Aranha et al., 2021). The definition is deliberately narrower than the full typology of social support, which also includes emotional, informational, and appraisal support. The narrowing reflects the paper's analytical focus: the relevant question is not whether support shapes general attitudes toward mHealth, but whether practical help at the moment of use strengthens the conversion of intention into behavior. Social support is positioned as a moderator because it is expected to influence the

strength of the relationship between intention and use rather than independently producing actual use. Older adults with stronger instrumental support are better positioned to overcome enactment barriers, whereas those with weaker support face a wider gap between stated willingness and behavior (Kim et al., 2024; Rhodes et al., 2022). Framed in this way, instrumental support operates as a boundary condition on behavioral realization: it becomes especially salient when willingness is already present but execution remains fragile.

Research Gaps, Conceptual Framework, and Propositions

Two gaps in the literature are especially salient for the present analysis. First, much of the research on older adults' mHealth adoption explains intention more clearly than actual use. Studies frequently stop at willingness or treat the transition to behavior as unproblematic. Yet attrition after intention formation is common in mHealth use in later life (Wu et al., 2022; Yang et al., 2024; Jakob et al., 2022; Mustafa et al., 2022). The literature therefore leaves the relationship between intention and actual use insufficiently specified. As a result, adoption models can overstate successful uptake when intention measures are used as substitutes for enacted behavior.

Second, social support is often included as a generalized background variable or as a direct predictor, but its role at a specific stage is seldom defined (Mustafa et al., 2022; Kim et al., 2024). In particular, it remains unclear whether support matters primarily by shaping intention or by helping older adults enact intended behavior when barriers arise (Kebede et al., 2022; Aranha et al., 2021). The present paper addresses this gap by specifying instrumental social support as a moderator at the point where intention is converted into actual use. This specification narrows the explanatory task and gives the proposed framework a clearer mechanism than broader accounts in which support is present but not clearly located in the adoption sequence.

Figure 1 presents the conceptual model for the transition from mHealth adoption intention to actual use among community-dwelling older adults, with social support as a moderating condition. The structure of the model is intentionally parsimonious. It isolates one primary path and one contingent factor so that future empirical work can test whether conversion after intention has formed is more likely when practical support is available at the point of use.

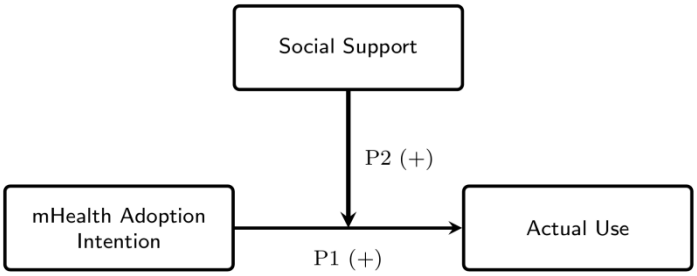

Figure 1. Conceptual model of the relationship between intention and actual use. P2 denotes moderation rather than a direct effect.

The Framework Advances two Propositions

P1 concerns the direct association between mHealth adoption intention and actual use. Across technology adoption research, behavioral intention is typically treated as the most proximate cognitive antecedent of use (Yang et al., 2024). Research on how intention relates

to behavior likewise indicates that intention is positively associated with subsequent behavior, even though the strength of that association varies across contexts and populations (Rhodes et al., 2022). In the mHealth literature, studies of continued or realized use similarly treat prior intention as an important predictor of behavior after adoption (Wu et al., 2022). For community-dwelling older adults, therefore, a positive association between adoption intention and actual use remains theoretically warranted, even if the relationship is weaker than models that assume frictionless adoption might imply (Jakob et al., 2022; Mustafa et al., 2022). The proposition is modest in scope. It does not assume that intention alone is sufficient; it states that intention remains the necessary directional precursor from which actual use is expected to develop.

P1: mHealth adoption intention is positively associated with actual use among community-dwelling older adults.

P2 concerns the conditional nature of that relationship. The literature on intention and behavior shows that enactment depends partly on facilitating conditions that allow intended action to be carried out (Rhodes et al., 2022). Within COM-B, such facilitating conditions are captured by opportunity, which includes environmental and interpersonal resources that reduce friction at the point of action (Willmott et al., 2021). For older adults using mHealth, instrumental social support from family members, peers, or community personnel can provide assistance with setup, troubleshooting, interpretation of app functions, and recovery after failed attempts (Aranha et al., 2021; Kebede et al., 2022). Evidence from mHealth studies of older adults further suggests that support matters because barriers commonly arise after intention has already formed (Kim et al., 2024; Jakob et al., 2022; Mustafa et al., 2022). On this basis, the role of social support is specified as conditional rather than direct: it is expected to strengthen the conversion of intention into actual use. In substantive terms, the same level of intention should produce different behavioral outcomes depending on whether older adults can access timely and practical assistance when early difficulties in use emerge.

P2: Social support positively moderates the association between mHealth adoption intention and actual use, such that the relationship is stronger when social support is high.

Discussion

The principal contribution of the paper is its focus on a specific stage rather than the entire adoption process. Instead of proposing a full adoption model, the framework concentrates analytical attention on the transition from intention to actual use. This placement matters because it clarifies what should be measured and explained in studies of older adults' mHealth engagement. When intention and actual use are treated as interchangeable, attrition after intention formation is obscured analytically, despite its substantive importance in mHealth adoption among older adults (Jakob et al., 2022; Wu et al., 2022; Mustafa et al., 2022). By distinguishing these stages, the framework clarifies how a narrower model can complement broader adoption theories that are more effective at explaining intention formation than enactment. It also reorients empirical attention from whether older adults approve of mHealth to whether they can practically sustain its use under everyday conditions.

The second contribution concerns the placement of social support within the adoption sequence. The argument advanced here is not that social support is irrelevant to beliefs or attitudes in other settings. Rather, for community-dwelling older adults using patient-centered mHealth, instrumental support is most analytically informative when treated as an

enactment condition that strengthens the relationship between intention and actual use. Positioning support as a moderator aligns the model with the mechanism documented in the literature. Assistance becomes consequential when users encounter setup problems, navigation difficulties, technical failures, or other early barriers to use (Aranha et al., 2021; Kebede et al., 2022; Kim et al., 2024). This bounded placement yields a more interpretable specification of where support matters most and provides a clearer basis for subsequent empirical testing. It also helps differentiate support that facilitates behavioral execution from broader social influences that may shape beliefs but do not necessarily determine whether intended use is enacted.

An additional implication of this framing by adoption stage is methodological. When studies collapse acceptance, trial, and ongoing use into a single dependent variable, they become less able to explain where interventions succeed and where they fail. By isolating actual use as the focal outcome, the present model directs attention to the moment when motivation must be translated into behavior under everyday constraints. This analytical move is especially relevant for older adults. The difference between nominal access and workable use can be amplified by fragmented support arrangements, varying levels of household assistance, and inconsistent opportunities to recover from early technical problems (Jakob et al., 2022; Kebede et al., 2022).

Implications for Research and Practice

Future empirical tests should operationalize mHealth adoption intention and actual use as separate variables rather than using one as a proxy for the other. A direct test would capture actual use through behavioral indicators over follow-up periods and model instrumental social support as a condition that shapes the relationship between intention and actual use. This design would allow researchers to estimate not only whether intention predicts use, but also under what support conditions that relationship becomes stronger or weaker. Longitudinal designs are especially suitable because the central issue in the present framework is temporal conversion from readiness to enacted behavior. Researchers can benefit from distinguishing initial onboarding, early use stabilization, and later routine use as analytically separable phases within the broader category of actual use.

Programs intended to expand mHealth use among older adults should not stop at persuasion, awareness, or registration. If the practical goal is actual use, support resources need to be deployed at predictable points of friction, including account setup, feature navigation, troubleshooting, and recovery after failed attempts. Evaluation should therefore emphasize conversion from intention to actual use, using behavioral indicators such as frequency of active use or retained use over follow-up intervals, rather than intention alone. On this basis, community programs, primary care outreach, and app providers should think of support as part of the adoption pathway itself. Assistance channels, simplified onboarding, and human follow-up are not peripheral additions to a completed design; they are mechanisms that can determine whether willingness is translated into everyday use.

The framework also carries implications for service coordination. Because community-dwelling older adults often move between home routines, family assistance, and periodic contact with health providers, support for mHealth use is rarely delivered by a single actor. The model suggests that effective implementation depends on whether practical help is

available across these touchpoints rather than only at the moment of enrollment. In applied terms, adoption support should be designed as a sequence of small recoveries from friction, not as a single orientation session. This point follows directly from treating social support as a moderator of enactment rather than as a general background characteristic.

Limitations and Future Research

As a conceptual paper, the model is not empirically tested. Three limitations follow. First, the framework is intentionally narrow: it does not model the antecedents of intention or downstream outcomes beyond the move to actual use. Second, social support is restricted to instrumental assistance available when barriers arise, leaving emotional, informational, and appraisal support outside the present argument (Aranha et al., 2021). Third, the paper is bounded to community-dwelling older adults using patient-centered mHealth for health self-management, so the model should not be generalized automatically to institutional settings, systems focused on clinicians, or younger populations. Future studies should test the relationship between intention and actual use with objective behavioral indicators over follow-up periods and examine whether instrumental support strengthens that relationship under different living and care arrangements (Kebede et al., 2022). A further limitation is that the framework remains deliberately parsimonious. Other conditions, such as digital literacy or interface quality, may also matter, but they fall outside the present model because the paper prioritizes explanatory clarity over exhaustive coverage. Relatedly, the model does not distinguish among different forms or intensities of actual use. Future research may need to determine whether the same moderating logic operates for first use, repeated use, and sustained routine use, since each stage may involve different practical barriers and different thresholds of support.

Conclusion

This paper narrows attention to one stage in older adults' mHealth adoption: the move from intention to actual use. By treating instrumental social support as a moderator at that stage, it offers a bounded explanation that complements broader adoption models and provides a clearer target for empirical testing and support design. The framework therefore contributes by making enactment after intention has formed visible as a distinct analytical problem in mHealth adoption in later life.

Acknowledgments

The author acknowledges the academic support provided by the School of Management, Universiti Sains Malaysia, during the development of this manuscript.

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