

Chat Human vs. Chatbot: Can Messaging-Based Technology Support Psychological Well-Being in Older Stroke Patients?

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Abstract

Background: Older stroke patients frequently experience persistent emotional distress and social isolation after discharge. While group-based psychological interventions are effective, access remains limited. Digital communication technologies have shown potential in supporting emotional wellbeing, but empirical evidence in geriatric stroke populations is still emerging.

Objective: This pilot study explores the feasibility and perceived psychological impact of a messaging-based emotional support intervention for older stroke patients.

Methods: A qualitative pilot study was conducted with 14 adults diagnosed with stroke. Participants received daily emotional support messages via a messaging application over one month. Messages were delivered by a trained engineer under psychological supervision. Semi-structured interviews were analyzed using qualitative content analysis.

Results: Participants reported enhanced emotional expression, perceived social connection, and continuity of emotional support. The intervention was experienced as meaningful despite being technology-mediated.

Conclusions: As a pilot study, these findings suggest that messaging-based interventions are feasible and acceptable in geriatric stroke care and may contribute to emotional wellbeing. Further controlled studies are warranted to assess efficacy and scalability.

Keywords: Stroke; Geriatric psychology; Digital health; Emotional support; Qualitative study; Messaging applications

Background

Stroke recovery in later life extends beyond physical rehabilitation and encompasses emotional, social, and existential dimensions. Persistent emotional distress, identity disruption, and social withdrawal are common among older stroke survivors and significantly affect quality of life. Previous work in human-computer interaction has shown that subtle design elements and interaction modalities can influence cognitive and emotional responses in vulnerable populations [1].

Psychological interventions traditionally address individual psychosocial factors such as emotional state, coping strategies, family dynamics, and perceived social support [2]. Group-based interventions further enhance adaptive coping by fostering shared

meaning-making and perceived control over illness [3]. However, access to such interventions is often constrained in geriatric populations due to mobility limitations and discontinuity of care. Recent research highlights the relevance of holistic models of wellbeing in understanding recovery processes. The Dimensions of Holistic Wellbeing (7DHW) model conceptualizes wellbeing as an integrated system encompassing emotional, social, cognitive, and relational dimensions [4]. This framework is particularly relevant for stroke survivors, whose recovery involves complex interactions between physical impairment, emotional adjustment, and social participation.

Parallel work in human-computer interaction and digital health has demonstrated that technology can facilitate emotion-

al support, social sensemaking, and quality of life among stroke survivors and their families [5,6]. Messaging platforms such as WhatsApp have been shown to support mutual emotional support, daily reflection, and continuity of care within stroke communities [7,8].

Despite this growing body of work, evidence focusing specifically on older stroke patients and psychological connection via messaging-based interventions remains limited. This pilot study addresses this gap.

Aim

This pilot study aims to explore the feasibility and subjective psychological impact of a daily messaging-based emotional support intervention for older stroke patients.

Methods

Study Design

A qualitative exploratory design was adopted to capture subjective experiences relevant to psychological well-being in later life.

Participants

Fourteen adults diagnosed with stroke participated in the study. Inclusion criteria included medical stability, preserved communicative capacity, and basic familiarity with smartphone use. All participants provided informed consent.

Intervention

Participants received daily emotional support messages for one month through a widely used messaging application (WhatsApp). Messages focused on emotional validation, encouragement, reflection on daily experiences, and normalization of post-stroke emotional responses.

The intervention was delivered by a trained engineer under the supervision of a licensed psychologist, ensuring ethical oversight and psychological appropriateness.

Data Collection

At the end of the intervention period, semi-structured interviews were conducted. Interviews explored perceived emotional impact, sense of connection, usefulness of the intervention, and perceived limitations.

Data Analysis

Interviews were transcribed verbatim and analyzed using qualitative content analysis. An inductive coding process was applied, allowing themes to emerge from participants' narratives. Credibility was enhanced through iterative coding and thematic validation.

Results

Four main themes emerged:

Perceived Emotional Support

Participants reported feeling emotionally supported and "remembered," which reduced feelings of loneliness.

Enhanced Emotional Expression

Daily messages facilitated reflection and verbalization of emotions that participants often struggled to express in other contexts.

Continuity of Care

The intervention provided a sense of ongoing support after formal rehabilitation had ended, which participants valued highly.

Awareness of Technological Limits

Although participants recognized the absence of face-to-face interaction, this limitation did not negate the perceived emotional benefit.

Discussion

As a pilot study, the present findings provide preliminary evidence that messaging-based interventions may support emotional wellbeing in older stroke patients. Participants' experiences align with previous research demonstrating that technology can facilitate emotional expression, social sensemaking, and perceived support during recovery [5,6].

From a holistic wellbeing perspective, the intervention appears to engage several dimensions outlined in the 7DHW model, particularly emotional, relational, and social domains [8]. Regular messaging fostered emotional continuity and a sense of being recognized, echoing ethical perspectives on relational care in vulnerability contexts [9].

Consistent with prior WhatsApp-based studies in stroke populations [7,8], participants valued the immediacy and familiarity of the platform. Importantly, awareness of the technological mediation did not negate the emotional meaning attributed to the interactions.

Although this study focuses on low-threshold communication technologies, other digital approaches such as virtual reality have also shown potential in stroke rehabilitation, particularly in motor recovery (Gordo et al., 2021).

This study does not position digital tools as replacements for human psychological care. Instead, the findings support their role as complementary, low-threshold support mechanisms that can extend psychological care beyond formal clinical settings. In geriatric care models, where continuity, accessibility, and adaptability are critical, messaging-based interventions may help bridge gaps that commonly emerge after hospital discharge or the end of structured rehabilitation. By offering regular, familiar, and easily accessible channels for emotional expression, such tools can contribute to sustained psychosocial support while respecting the limitations and preferences of older adults. Importantly, their value appears to lie not in replicating therapeutic relationships,

but in reinforcing emotional presence, routine, and perceived connectedness within an integrated model of care.

Limitations

As a pilot study with a small, non-random sample, findings are exploratory and not generalizable. The human-supervised nature of the intervention limits conclusions regarding fully automated chatbot systems. Future studies should incorporate comparative designs and mixed-method approaches.

Conclusion

This pilot study suggests that messaging-based emotional support interventions are feasible and acceptable for older stroke patients and may contribute to psychological wellbeing in the post-rehabilitation phase. In line with the World Health Organization's framework on Active Ageing and Integrated Care for Older People (ICOPE), these findings highlight the potential of accessible digital tools to support functional ability, social participation, and emotional resilience beyond clinical settings. When embedded within integrated geriatric care pathways, messaging-based interventions may complement existing services by promoting continuity of psychosocial support, reducing isolation, and facilitating person-centered care. Further research is needed to assess their effectiveness, cost-effectiveness, and implementation within health systems adopting integrated and community-based models of care.

Stroke recovery in older adults extends well beyond hospital discharge and formal rehabilitation, yet psychosocial follow-up remains fragmented in many health systems. This pilot study indicates that low-cost, messaging-based emotional support interventions are feasible and acceptable for older stroke patients and may help address gaps in continuity of care.

Aligned with the World Health Organization's Active Ageing and Integrated Care for Older People (ICOPE) frameworks, these findings suggest that accessible digital tools can support emotional wellbeing, social participation, and person-centered care within community and home-based settings. Messaging platforms, already embedded in daily life, offer a scalable means to extend psychosocial support without increasing clinical burden.

From a policy perspective, integrating such interventions into geriatric care pathways may enhance post-discharge support, reduce isolation, and strengthen integrated care models. Further evaluation of effectiveness, cost-efficiency, and implementation strategies is required before large-scale adoption, but the present findings support continued investment in digitally enabled, community-oriented psychosocial care for ageing populations.

Clinical Implications

Continuity of psychosocial care: Messaging-based emotion-

al support interventions may help bridge common gaps in psychological follow-up after hospital discharge and the end of formal stroke rehabilitation, particularly in older adults.

Person-centered geriatric care: Familiar and low-threshold digital tools can support emotional expression and perceived connectedness while respecting the functional, cognitive, and mobility limitations often present in geriatric populations.

Integration into care pathways: When supervised and ethically framed, messaging interventions can complement existing geriatric and community-based services within integrated care models, without replacing face-to-face psychological support.

Accessibility and scalability: Widely used messaging platforms offer a low-cost, scalable option for extending psychosocial support, with minimal technological burden for patients and healthcare providers.

Clinical decision-making: These findings support consideration of digital emotional support tools as adjuncts in stepped-care approaches, particularly during post-rehabilitation and community reintegration phases.

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