



Jurnal Pemberdayaan Masyarakat *Media Pemikiran dan Dakwah Pembangunan*

ISSN: (Print) (Online) Journal homepage:
<https://ejournal.uin-suka.ac.id/dakwah/JPMI/index>

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To cite this article: Syakhira Ramadhani & Kafa Abdallah Kafa (2026): Digital Adaptation and Subjective Well-Being among Independent Older Adults: A Study at BKL Sekar Melati, Yogyakarta, Jurnal Pemberdayaan Masyarakat: Media Pemikiran dan Dakwah Pembangunan, DOI:10.14421/jpm.2026.101-04

Type of paper: Research article

To link to this article: <https://doi.org/10.14421/jpm.2026.101-04>

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Digital Adaptation and Subjective Well-Being among Independent Older Adults: A Study at BKL Sekar Melati, Yogyakarta

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Abstract

This study examines digital adaptation and subjective well-being among independent older adults at BKL Sekar Melati, Yogyakarta. Subjective well-being is understood as encompassing life satisfaction, positive affect, and negative affect, while independent older adults refer to functionally independent individuals who are able to perform daily activities without assistance. Digital adaptation is defined as the process through which older adults develop skills and strategies to engage with digital devices according to their everyday needs. Using a qualitative descriptive-interpretive approach, this study involved ten primary informants aged 60–80 years selected through purposive sampling from BKL Sekar Melati Elderly School, Condongcatur, Sleman. Additional data were obtained from one program administrator and three family companion informants. Data were collected through in-depth interviews, non-participant observation, and documentation. The findings reveal three main themes: selective digital engagement, in which older adults prioritize communication and entertainment platforms over more complex digital services; affective duality, where enjoyment, enthusiasm, and meaningfulness coexist with confusion, feelings of inferiority, and anxiety about digital security; and the mediating role of family and peer-group support within the Elderly School community. The study concludes that subjective well-being in digital adaptation emerges from the balance between life satisfaction gained through meaningful digital activities and the ongoing regulation of negative affect. The findings suggest the need for peer-based digital literacy training, empathy-centered facilitation for family companions, and simplified interface design to support older users.

ARTICLE HISTORY

Received 01 January 2026

Accepted 07 July 2026

KEYWORDS

Digital Adaptation, Functionally Independent Older Adults, Subjective Well-Being, Social Support, Aging Population

Introduction

The expansion of the digital era has fundamentally transformed the ways in which society conducts social life, rendering everyday interactions increasingly mediated through digital technologies. Digital platforms and internet connectivity have become critical

prerequisites for accessing public services, information, and social participation. Data from the Indonesian Internet Service Providers Association (APJII, 2025) indicate that approximately 229.4 million Indonesians representing 80.66 percent of the population were connected to the internet in 2025. These transformations carry significant implications for older adults, as a growing range of essential activities has shifted onto digital platforms, requiring their active engagement and adaptive capacity within an increasingly digital ecosystem.

Yet this expanding digital landscape is not equally navigable across generations. Based on APJII (2025) data, internet penetration among Millennials reaches 89.12 percent and among Generation Z 87.80 percent, whereas Baby Boomers (the primary older adult cohort aged 60–78 years) record only 59.40 percent penetration. This gap is not merely statistical; it reflects a structural condition in which older adults are systematically less equipped to participate in a social world that is rapidly reorganizing itself around digital infrastructures. Older adults are frequently positioned as digital immigrants (individuals who did not grow up with digital technologies and who are therefore required to adapt to them at a life stage often characterized by declining physical, cognitive, and sensory capacities) rendering them particularly vulnerable in accessing services and social opportunities that are increasingly being relocated to digital domains.

This vulnerability is manifested through barriers operating at interpersonal, structural, and functional levels (BPS, 2023). Interpersonal barriers stem from psychological factors including low self-confidence, anxiety, and age-based stereotypes that inhibit digital engagement. Structural barriers arise from economic constraints and limited access to devices and internet services. Functional barriers are rooted in age-related health declines including visual deterioration, reduced motor dexterity, and cognitive slowing that impede effective technology use. Crucially, BPS (2023) data reveal that while 49.56 percent of older adults in Indonesia already own a digital device, only approximately one-fifth are able to access and use the internet independently. This finding demonstrates that device ownership alone does not resolve the problem of digital exclusion; rather, the barriers are deeper and more complex, involving psychological readiness, social support, and functional capacity simultaneously.

Amid these conditions, adaptation emerges as a central mechanism through which older adults negotiate their position in the digital era. In this study, "digital adaptation" refers to the combined process of developing technical skills, purposeful technology use, and psychosocial adjustment through which older adults engage with digital devices and applications in ways aligned with their everyday needs. Gani (2025) explains that this process encompasses the development of capacities and understandings related to digital technologies and the internet. Critically, digital adaptation extends beyond technical competence; it is closely intertwined with older adults' subjective well-being (SWB) as they navigate everyday life in a digitalized environment. Diener, Oishi, and Lucas (2007) emphasize that affective experience constitutes a key mechanism of adaptation, contributing directly to individuals' evaluations of their own well-being. Indonesia's

parallel demographic shift with older adults now comprising 12 percent of the total population (BPS, 2024) renders this relationship between digital adaptation and well-being an increasingly urgent concern.

Within this context, "functionally independent older adults" defined in this study as those capable of performing daily activities without reliance on others occupy a particularly significant position. Their functional autonomy places them at the intersection of digital opportunity and vulnerability: capable of engaging with technology, yet confronting barriers that shape the depth and quality of that engagement. Understanding how this group constructs SWB understood through cognitive evaluations of life satisfaction and the affective balance between positive and negative emotional experiences (Diener et al., 2009) through the process of digital adaptation requires an empirical setting in which such adaptation is actively and collectively practiced.

The Elderly School Program (*Sekolah Lansia*) under the Elderly Family Development framework (*Bina Keluarga Lansia*, BKL) represents precisely such a setting. BKL Sekar Melati in Condongcatur subdistrict, Sleman Regency, Special Region of Yogyakarta a province with the highest proportion of older adults in Indonesia at approximately 16–17 percent (BPS, 2023) and the highest internet penetration on Java at 88.73 percent (APJII, 2024) integrates digital communication technologies into its structured learning activities, peer support networks, and program coordination. This program is representative of a growing model of organized elderly empowerment across urban and peri-urban Indonesia, making it an appropriate setting from which findings can speak to broader national contexts.

Previous studies have examined the benefits of digital technologies for older adults in facilitating communication, supporting daily activities, and enhancing social functioning (Widiyanti et al., 2024; Ismail, 2024; Poerwanti et al., 2025). However, limited attention has been given to how functionally independent older adults subjectively interpret their well-being while navigating the opportunities, limitations, and emotional demands of digital adaptation, particularly within community-based elderly learning settings.

However, these studies have largely documented outcomes of technology use without examining how the *process* of digital adaptation including selective technology engagement, affective experiences of learning, and the role of social support shapes the cognitive and affective components of SWB. This gap is significant, as Jordan (2008) argues that well-being derives from individuals' capacity to live lives they themselves regard as meaningful and worthwhile, a dimension that cannot be captured through technology use metrics alone.

This study therefore addresses the following questions: (1) How do functionally independent older adults interpret and construct subjective well-being in the process of adapting to the digital era? (2) How do the dynamics of digital adaptation, encompassing selective technology use, positive and negative affective experiences, and social support

from family and peer communities shape the cognitive and affective components of their subjective well-being?

Theoretical Framework

Subjective Well-Being

The concept of Subjective Well-Being (SWB) originates within the tradition of positive psychology and foregrounds the primacy of individuals' subjective experiences in assessing happiness and quality of life. Ed Diener, among its principal architects, advanced SWB as an analytical framework for understanding well-being through the interplay of cognitive appraisals and affective responses to one's lived circumstances. Central to this approach is the proposition that well-being cannot be reduced to material conditions or external determinants alone; it is profoundly shaped by internal, interpretive processes through which individuals assign meaning to their lives.

SWB is conceptualized as a multidimensional construct capturing how individuals evaluate their lives based on personal experience. Diener (2009) delineates three defining characteristics: SWB is anchored in individual experience, encompasses the presence of positive affect alongside the relative absence of negative affect, and entails a global appraisal of life. Analytically, this translates into two interrelated dimensions. The cognitive dimension concerns evaluative judgments of life satisfaction, which are reflective and subjective assessments formed through comparisons between actual life conditions and the aspirations or standards held by individuals. The *affective dimension* concerns the frequency and intensity of emotional experiences in everyday life: positive affect encompasses emotions such as happiness, enthusiasm, and contentment, while negative affect includes anxiety, frustration, and dissatisfaction. High SWB is marked by elevated life satisfaction, the predominance of positive affect, and a relatively low incidence of negative affect (Diener et al., 2009).

In quantitative traditions, SWB is often operationalized through standardized instruments such as the Satisfaction with Life Scale. In qualitative inquiry, however, SWB is explored through the narratives individuals construct about their lived experiences, the meanings they attach to everyday events, and the affective themes that emerge from in-depth accounts of their lives (Wijaya, 2024). Rather than measuring well-being against fixed benchmarks, qualitative approaches seek to understand how individuals articulate satisfaction, interpret positive and negative experiences, and evaluate their own lives in their own terms. This makes SWB particularly well-suited to studies examining populations whose well-being is embedded in complex, contextual processes such as older adults navigating digital adaptation. In this study, SWB is operationalized through thematic analysis of participants' cognitive evaluations of life satisfaction and the affective experiences both positive and negative expressed through in-depth interviews, making the concept both the analytical lens and the primary interpretive outcome.

SWB and the Aging Process

Aging modifies the dimensions of SWB in ways that are consequential for understanding how older adults evaluate their well-being. As individuals age, life expectations tend to shift away from achievement and accumulation toward relational meaning, everyday continuity, and acceptance. Standards of social comparison are likewise recalibrated: older adults increasingly evaluate their lives in relation to peers facing similar challenges rather than against broader societal benchmarks. This recalibration can sustain relatively high life satisfaction even as objective conditions health, mobility, social roles contract (Diener, 2009). Psychosocial resources, such as accumulated relational networks, emotional regulation capacities, and sense of identity, also shift in later life, with some declining and others deepening. Carstensen et al.'s (2003) socioemotional selectivity theory has shown that older adults tend to prioritize emotionally meaningful goals and interactions, directing attention toward positive experiences and minimizing engagement with negative information a pattern that shapes how SWB is experienced and sustained. Disruptions to functional autonomy and social participation, however, can destabilize this balance, generating negative affect and reducing life satisfaction. Digital adaptation, as a domain that simultaneously threatens functional autonomy and offers new opportunities for social participation, therefore sits at a critical intersection of the aging experience and the formation of SWB.

SWB, Digital Technology, and Digital Adaptation

The relationship between digital technology use and SWB among older adults is empirically ambivalent, with both positive and negative pathways documented in recent literature. On the positive side, research consistently shows that internet and digital technology use among older adults is associated with enhanced social connectedness, reduced loneliness, improved access to health information and services, and increased sense of autonomy and social relevance (Petersen et al., 2023; Hu et al., 2025). A systematic review by Petersen et al. (2023) found that ICT use among older adults was associated with reductions in loneliness and increases in perceived social connectedness, with facilitating conversations identified as a primary mechanism. Social media use has similarly been linked to improved SWB, enhanced connectedness with family and friends, and a strengthened sense of being part of the world (International Psychogeriatrics, 2024). These positive effects are particularly salient when digital engagement supports the continuation of meaningful relational roles as parents, grandparents, and community members that constitute central sources of life satisfaction in later life.

Negative effects, however, are equally documented. Technology anxiety, defined as a negative affective response to the use or anticipated use of digital systems, has been shown to reduce SWB and inhibit digital participation (Shang et al., 2024). Technostress the psychological tension arising from perceived inability to meet the demands of digital environments is particularly prevalent among older adults with lower digital literacy and limited prior technology experience. Feelings of incompetence, digital exclusion, and fear

of online fraud further generate negative affect, undermining life satisfaction and reinforcing avoidance behaviors. Shang et al. (2024) demonstrated that negative self-perceptions of aging lead to heightened technology anxiety, which in turn reduces SWB and decreases intention to use digital public services. These dual trajectories positive and negative align directly with the affective and cognitive dimensions of SWB as defined by Diener (2009), rendering SWB a theoretically coherent framework for capturing the full emotional complexity of older adults' digital adaptation experiences.

The Analytical Position of SWB in this Study

Within this study's analytical framework, SWB performs a dual function. As the *main interpretive outcome*, it provides the conceptual vocabulary through which participants' reflections on life satisfaction, positive affect, and negative affect are identified, organized, and interpreted. As an *interpretive lens*, it guides the analysis toward the subjective, evaluative dimension of experience asking not only what older adults do with digital technology, but what those experiences mean to them and how those meanings shape their sense of living well. Several contextual factors are understood as shaping the formation of SWB within this framework: functional independence, social support from family and peer communities, digital adaptation experiences, and digital literacy. These are not treated as variables to be tested, but as contextual conditions that influence how meaning is constructed and how the cognitive and affective components of SWB are expressed.

Methods

This study adopts a qualitative methodology grounded in a descriptive–interpretive approach to examine how independent older adults construct and interpret subjective well-being in the process of adapting to the digital era. This approach is selected on the premise that meaning emerges from personal experience articulated narratively, rather than through statistical testing or variable-based measurement (Strauss & Corbin, in Wijaya, 2024), and is therefore particularly suited to eliciting the lived experiences and interpretive frameworks through which older adults make sense of the phenomena they encounter.

The research was conducted at the Sekolah Lansia of BKL Sekar Melati, located in Condongcatur subdistrict, Sleman Regency, Special Region of Yogyakarta. This site was selected on the basis of its active and sustained program character, its formal recognition in local innovation competitions, its integration of digital technologies into learning activities, and the progressive digital-service environment in which its participants reside.

Informants were selected using purposive sampling. The primary criterion functional independence was operationalized using the Katz Index of Activities of Daily Living (Katz, 1963), assessing the capacity to perform six fundamental activities (eating, bathing, dressing, transferring, toileting, and continence) without assistance.

Independence status was verified through an ADL self-assessment checklist completed by prospective informants and confirmed by the program secretary, who had maintained close contact with members since before the school's inauguration. The second criterion experience interacting with digital technologies was verified through a brief pre-interview screening and cross-referenced with the secretary's recommendations.

Ten primary informants were selected. Data saturation was reached when successive interviews yielded no substantively new themes, identified after the ninth and tenth interviews confirmed patterns already established in earlier data (Guest et al., 2006; Saunders et al., 2018). Primary informants ranged in age from 60 to 80 years; nine were female and one was male. Seven held undergraduate degrees and three had completed secondary education; seven were retirees from civil service or private-sector positions, and three were homemakers. Four supporting informants were also included: one program administrator (the secretary, who has served since before the school's establishment) and three family members (one spouse and two adult children), providing triangulation of both institutional and domestic perspectives on participants' digital adaptation.

Data were collected between September and October 2025 through in-depth interviews, non-participant observation, documentation, and literature review. Interviews were conducted using a semi-structured guide organized around five thematic domains: daily activities outside the Sekolah Lansia; activities within the program; digital adaptation experiences; subjective well-being (life satisfaction, positive and negative affect); and reflective evaluations of the digital era. All interviews were conducted in Indonesian in participants' homes, lasted between 30 and 90 minutes, and were audio-recorded with prior informed consent and transcribed verbatim. Audio recordings and verbatim transcripts were stored in password-protected digital folders accessible only to the research team; personal identifiers were removed during transcription and replaced with participants' everyday nicknames to preserve confidentiality. Non-participant observation was conducted across three field visits of approximately one hour each, focusing on social interaction, smartphone use, learning activities, and communication with family companions. Documentation and literature review served as supplementary sources to contextualize and corroborate the primary data.

This study was conducted in accordance with established ethical principles. All informants provided voluntary oral informed consent after receiving a full explanation of the study's objectives and procedures, including their right to withdraw at any time without consequence. Interviews were paused or redirected whenever participants appeared emotionally uncomfortable, allowing them to decide whether to continue the discussion.

Data analysis followed the three-stage framework of Miles, Huberman, and Saldaña (2014): data reduction, data display, and conclusion drawing. All transcripts were read repeatedly and coded manually using an open coding approach. Initial codes were compared continuously across transcripts and grouped into broader conceptual categories, which were subsequently refined into themes representing patterns of

subjective well-being and digital adaptation before being interpreted in relation to the study objectives. All coding was conducted by the primary researcher.

Credibility was established through source triangulation comparing data from primary informants, the program administrator, and family companions and methodological triangulation across interviews, observation, and documentation (Lincoln & Guba, 1985). Where data from different sources diverged, positional differences between informant types were examined and clarified through additional probing, and the final interpretation was based on convergence across multiple data sources rather than a single account. Preliminary interpretations were discussed with several participants to confirm that the identified themes accurately represented their experiences and intended meanings.

Result and Discussion

Independent elderly individuals demonstrate adaptive capacity in negotiating a digital ecosystem that has become increasingly integrated into everyday life. This process of adaptation is reflected in their use of digital technologies and the internet as media for communication, entertainment, and the maintenance of social relationships. Adaptation unfolds gradually and is grounded in direct experience, as the elderly learn to operate digital devices through repeated practice until such use becomes habitual and, eventually, a practical necessity. Prior experiences with earlier communication technologies, such as short message services (SMS), BlackBerry Messenger (BBM), and later applications such as WhatsApp, constitute important forms of experiential capital in this process. The continuity of communicative practices enables the elderly to perceive digital technologies as an extension of familiar modes of interaction, thereby mitigating resistance to technological change.

Digital adaptation among the elderly is both selective and functional. Engagement with technology is oriented primarily toward applications that offer clear practical and social value, particularly online communication platforms and forms of entertainment consumption. By contrast, the use of more complex digital services, such as administrative applications and online public services, continues to require assistance from members of their immediate social environment. This pattern suggests that adaptation among the elderly is not measured by comprehensive technological mastery, but rather by their capacity to utilize digital tools that are meaningful, accessible, and aligned with their personal needs and functional abilities.

Despite demonstrating adaptive potential, the elderly continue to encounter functional constraints associated with the aging process, including visual decline, reduced motor dexterity, and the increasing complexity of digital interfaces. These limitations prompt the development of compensatory strategies, such as the use of assistive devices and the simplification of interaction patterns with digital technologies. Such practices reflect an ongoing negotiation between bodily constraints and technological demands, through which the elderly seek to preserve autonomy and sustain social participation.

Social support emerges as a critical factor in strengthening the digital adaptation of the elderly. Familial assistance operates as a source of practical learning in overcoming technical obstacles, while participation in the Sekolah Lansia provides a social arena for sharing experiences, cultivating peer solidarity, and maintaining offline social connectedness amid intensifying digitalization. This social ecosystem facilitates a form of collective adaptation that enhances the elderly's confidence and sense of competence in navigating the digital environment.

These everyday experiences of digital adaptation orient the elderly toward subjectively constituted states of well-being. The meaning of well-being emerges through personal reflection on life as it is lived within the digital era. Adaptation thus becomes the experiential context through which the subjective significance of well-being is apprehended. On this basis, the following section elaborates the empirical findings concerning how independent elderly individuals construct meanings of subjective well-being in the course of digital adaptation, examined through the analytical lenses of life satisfaction and the accompanying dynamics of affect.

Inter-Individual Variation in Digital Adaptation

The category of 'functionally independent older adults' conceals meaningful heterogeneity in adaptive trajectories, shaped by educational background, occupational history, prior technology exposure, and living arrangements. Variation in adaptation patterns was evident across informants and could be attributed to several biographical and contextual factors.

Informants with tertiary education and professional careers involving technology Luki (retired from an international nuclear agency), Endang (retired healthcare worker), and Bu Anny (retired civil servant) demonstrated broader digital repertoires, including self-directed learning, financial management, and health information seeking. Their prior institutional familiarity with digital systems reduced the cognitive distance between pre-digital competence and current smartphone use, accelerating adaptation. By contrast, informants from non-professional backgrounds Tati (small business owner, SMA education) and homemakers including Khotijah concentrated engagement in WhatsApp communication and passive entertainment. Widi captures the self-perception common to this group.

"I have limited access to social media because I'm getting on in years." (Mrs. Widi, female, 11 October 2025)

Gender differences also emerged, though not uniformly. Female informants who identified primarily as homemakers (Khotijah, Rosa, Ningsih) tended to limit digital use to communication and health information, while those with professional backgrounds (Endang, Anny, Widi) demonstrated broader platform engagement. Living arrangements played a meaningful role: Luki, who lives alone with his child residing in Australia, relies on digital communication as his primary social connection and shows high motivation to

maintain digital competence despite heightened vulnerability to online fraud, which he experienced firsthand. Informants living with children (Khotijah, Sun) reported faster adaptive trajectories, as real-time family assistance was readily available.

These variations confirm that functionally independent older adults constitute a heterogeneous population, and that life satisfaction through digital engagement is modulated by educational biography, occupational history, living arrangements, and prior technology exposure.

Adaptive Experiences as Expressions of Life Satisfaction

Life satisfaction constitutes the cognitive component of subjective well-being and refers to individuals' evaluative judgments regarding the extent to which their lives are perceived as aligning with personal expectations and ideal standards (Andrews & Withey, in Diener, 2009). These evaluations are inherently subjective, grounded in personal criteria shaped by everyone's biographical experiences. Within the present study, the life satisfaction of independent elderly individuals is understood as a reflective outcome of their adaptive experiences, particularly in negotiating the balance between personal capacities and the demands of an increasingly digitalized environment.

Meaningful Activity as Self-Actualization in the Digital Era

Meaningful activities facilitated by digital technologies constitute a central modality through which independent older adults achieve self-actualization and cultivate life satisfaction. Older adults act as reflective agents who actively select activities in accordance with their interests, abilities, and life values. As Grant and Kluge (2012, in Skalacka, 2015) argue, engagement in diverse forms of activity whether social, physical, or recreational exerts a significant influence on life satisfaction in later life. Endang (69 years, retired healthcare worker) exemplifies this through her use of YouTube to record and store exercise routines for the Sekolah Lansia. She enjoys recording exercise routines from YouTube, which she then transfers to a USB stick for use during Sekolah Lansia sessions.

This experience illustrates how digital tools extend the spaces of participation aligned with personal identity, providing intrinsic satisfaction. As Skalacka (2015) observes, activities generate engagement when there is a balance between individual capacity and task demands. Khotijah (62 years, homemaker) demonstrates a parallel pattern, using her device to independently prepare hadroh songs assigned by her teacher sustaining creative and relational roles through digital means. Warr, Butcher, and Robertson (2004) argue that meaningful activity contributes to life satisfaction when individuals experience a sense of competence and control over what they pursue. Variation across informants was evident: those with professional backgrounds Luki (retired international nuclear agency), Anny (retired civil servant) reported broader digital repertoires including origami learning and financial management, shaped by prior occupational familiarity with digital systems. By contrast, informants from non-professional backgrounds concentrated engagement in communication and

entertainment, reflecting a different but equally purposeful adaptive strategy. Petersen et al. (2023) similarly found that participatory benefits of ICT use among older adults are shaped by prior educational resources and social networks

Digital Convenience as a Positive Life Trajectory

Older adults in this study consistently evaluated their present digital lives as superior to pre-digital conditions, generating comparative life satisfaction. This positive evaluation stemmed from the perception that digital technologies had significantly simplified daily routines while enabling them to maintain independence in managing essential activities. Rather than requiring physical travel to complete financial transactions or household payments, participants appreciated the convenience of accessing these services from home, which reduced physical demands and reinforced their sense of autonomy. As Anny (66 years, retired civil servant) explained, *‘We’re more practical, aren’t we? We can transfer or pay for things – for example, instalments, a savings club, or electricity tokens. So we can transfer money whilst we’re asleep. We don’t have to leave the house. Now, whether we like it or not, we have to adapt. Otherwise, we’ll be left behind.’* (Anny, October 8, 2025). Her account demonstrates that digital adaptation was valued not merely for its efficiency but for its capacity to preserve personal independence and control over everyday life, thereby fostering a more favorable evaluation of current living conditions compared with the pre-digital era.

These evaluations align with Emmons et al. (1983) and Michalos (1980, in Diener, 2009): when present conditions are perceived as superior to past standards, life satisfaction increases. This comparative advantage was most pronounced among informants who had experienced significant pre-digital constraints Pri (73 years, retired private sector) described limited communication capacities when residing in Kalimantan, making digital connectivity particularly transformative. For informants whose pre-digital lives were already relatively convenient, the perceived improvement was less dramatic. This variation reflects how biographical context shapes the evaluative baseline against which digital life is assessed. Hu et al. (2025) similarly found that internet use reduces psychological anxiety and social loneliness among older adults, supporting SWB indirectly.

Social Support as a Bridge for Adaptation in the Digital Era

Social support refers to the assistance provided by individuals or groups within one’s social environment that helps to mitigate stress and enhance well-being (Kafaa, 2024; Encorporado et al., 2023; Kent et al., 2020; Sarafino & Smith, 2014; Xi et al., 2020). Within the context of this study, social support functions as a crucial mediating mechanism through which independent elderly individuals are able to adapt to the use of digital technologies and the internet. Such support is primarily embedded in familial relationships, most notably with children, as well as in peer communities formed within the Sekolah Lansia. Children provide practical assistance by helping to resolve technical difficulties while simultaneously accompanying the elderly in the learning process. This

form of support facilitates access to more complex digital services and fosters a sense of security, as the elderly know that a reliable source of assistance is available when difficulties arise. Over time, this guided engagement generates new competencies that strengthen the elderly's sense of control over their digital activities.

Seniors participating in the Sekolah Lansia report feeling supported by volunteers, gaining access to healthcare information, and experiencing meaningful social connection through visits from younger volunteers. Peer-to-peer learning further enables them to develop skills on equal footing, reinforcing their sense that growth remains possible even in old age. The experiences of the elderly indicate that assistance from children in accessing administrative services, such as registering for national health insurance (Jaminan Kesehatan Nasional, JKN) or navigating digital links, operates as an adaptive mechanism that alleviates anxiety arising from technical limitations. Social support thus functions as a buffer against the pressures that may accompany cognitive and technical constraints. Beyond the family sphere, the Sekolah Lansia constitutes a social arena that provides collective support in the process of digital adaptation. Adaptation unfolds through forms of learning that are organic and spontaneous, such as the reciprocal sharing of experiences and mutual assistance among peers. The elderly acquire familiarity with basic digital features through everyday interactions, both in face-to-face encounters and through activity-based WhatsApp groups. This process illustrates that digital adaptation is embedded in supportive, informal social relations rather than in formalized or purely instructional settings.

Baumeister and Leary (1995), cited in Diener (2009), emphasize that the need to establish and maintain supportive relationships is fundamental to human life. The findings of this study reaffirm that social support from family and community plays a pivotal role in enabling the elderly to confront the challenges of the digital era. Supportive social relations assist the elderly in compensating for limitations in technical skills while sustaining their sense of confidence in everyday digital engagement. More broadly, social support facilitates digital adaptation and simultaneously constitutes a foundational element in the formation and maintenance of subjective well-being, insofar as life satisfaction is shaped by the perceived benefits derived from such adaptive support.

Networking as the Production of Positive Social Relations in the Local Environment

Digital adaptation extends beyond functional utility to become a medium for building and sustaining meaningful social networks. Through WhatsApp groups linked to the Sekolah Lansia, alumni communities, and neighbourhood circles, participants maintain active social presence as physical mobility diminishes. Sun illustrates how digital networking dissolves the sense of post-retirement social contraction:

“We now have groups for junior high school, high school, and college alumni—everyone has a group—so we don’t feel like we’ve retired and have no friends. Plus, every day, retirees are sure to get greetings from their junior high, high school, and college friends, as well as fellow retirees, and it’s actually been incredibly beneficial.” (Sun, 2 October 2025)

Sun's experience reflects the position of informants whose occupational histories generated extensive social networks retired professionals and civil servants for whom digital platforms reactivate existing ties rather than create new ones. For Luki, who lives alone with family abroad, digital networking carries a different weight: video calls and group messaging constitute his primary medium for remaining embedded in family and peer life in real time, making digital competence a direct condition of relational continuity. Berkman and Syme (1979, in Baker, 2005) argue that involvement in social networks increases the likelihood of receiving support when needed, reinforcing SWB. Consistent with Diener and Seligman (2002), strong reciprocal social relationships are a defining feature of individuals with high SWB. Through digital networking, older adults sustain meaningful connections that minimize the social alienation often associated with aging, contributing directly to cognitive evaluations of life satisfaction.

The Expression of Contentment (Positive Affect) in Experiences of Digital Adaptation

The affective component of subjective well-being is constituted through individuals' lived experiences that give rise to emotional responses (Diener, 2009). High levels of subjective well-being are characterized by the predominance of positive affect that is, by a tendency for individuals to experience pleasant emotions more frequently than negative ones during everyday life. Within the context of digital adaptation, positive affect reflects how the elderly emotionally apprehend their encounters with technology, as moments of ease, enjoyment, and accomplishment become integrated into their daily routines.

Experience of Enjoyment in the Conveniences of the Digital Era

Among the most consistently reported sources of positive affect is the everyday sense of ease that digital tools have introduced into older adults' routines. Practical tasks previously requiring physical presence bill payments, grocery orders, health information seeking become manageable from home, generating repeatable experiences of competence. Digital platforms also serve an emotional regulation function: Bu Sun uses mobile games to manage low-energy days, while Rosa and Khotijah describe the affective benefit of independently accessing health information for their chronic conditions. Widi captures the mood-lifting quality of digital entertainment:

"It's nice, isn't it? There's entertainment, cooking recipes, sometimes stories and short dramas—you find yourself laughing to yourself. When you're feeling bored at work, you watch a short drama, and before you know it, you're smiling to yourself. Then, when you're on a video call, you'll be laughing and having a good time like that."
(Widi, 11 October 2025)

Widi's account reflects a pattern common among homemakers in this study whose digital enjoyment centers on entertainment, social contact, and health content in contrast to informants with professional backgrounds who derived enjoyment from more

instrumental functions such as financial management and self-directed learning. Across both groups, however, enjoyment emerges from the alignment between digital function and personal need. According to Diener (2009), pleasurable experience is a core constituent of the good life. Power (2024) further highlights that the subjective perception of digital convenience rather than objective skill level is the stronger predictor of positive affect among older adults, a finding well illustrated by this variation

Sustained Enthusiasm for Social Participation in the Digital Era

A qualitatively distinct form of positive affect emerges from continued participation in Sekolah Lansia activities an enthusiasm that digital communication actively sustains between meetings. Notifications, activity schedules, and group photographs circulated through the program's WhatsApp group keep participants emotionally connected to the community even on non-meeting days. Sun, who had found unoccupied retirement days aversive after a working life filled with structured activity, articulates this affective dynamic:

“Usually, there are activities every day, so I’m not just sitting around—it actually gets me excited. Yeah, of course I’m happy—we’ve finally met. Especially since it’s a community of older people. They’re just so funny, you know.”(Sun, 2 October 2025)

Her daughter, Dian, corroborates this externally, observing that Sun invariably returns from the Sekolah Lansia with stories to tell and a visibly elevated mood. This enthusiasm is particularly salient among informants who had previously occupied structured professional or organisational roles Bu Sun (retired), Bu Anny (retired civil servant), Endang (retired healthcare worker) for whom the Sekolah Lansia provides a structured community that partially substitutes the social functions of working life. Consistent with Bradburn's formulation (cited in Diener, 2009), social participation is among the most reliable generators of positive affect, particularly when voluntary and intrinsically motivated. The Sekolah Lansia functions as an affective infrastructure a space that produces and replenishes positive emotional states, reinforcing SWB between the evaluative moments constituting life satisfaction.

Experience of Meaningfulness through Connection and Relational Roles

A form of positive affect distinct from enjoyment emerges from participants' experience of feeling significant within their closest relationships. Digital communication technologies particularly video calls allow older adults to sustain relational roles of parent and grandparent across geographic distance. Tati, whose only daughter lives in another city, describes how digital attention constitutes its own form of closeness. She uses social media as a means of communication that helps her stay close to her family. Thanks to these digital tools, she feels closer to them and more connected.

For Luki, who lives entirely alone with family abroad, this dimension carries existential weight. Digitally mediated attention at key life moments religious holidays, birthdays constitutes his primary experience of being cared for and remembered, reducing the emotional vulnerability of solitary living. The contrast between Tati and Luki illustrates how living arrangement shapes the affective significance of the same digital function: for those co-residing with family, digital contact enriches an already present relational life; for those living alone, it constitutes the primary medium through which relational identity is maintained. These experiences align with Rosenberg and McCullough (1981, cited in Paradisi et al., 2024): feeling important to others bridges individual experience with relational embeddedness, constituting an affective foundation of SWB that digital connectivity actively sustains.

Experience of Companionship in Later Life

Distinct from family-based meaningfulness, a fourth form of positive affect emerges from horizontal solidarity among peers: the felt recognition of not facing old age in isolation. The Sekolah Lansia uniquely provides a collective space populated by age-peers sharing comparable life conditions one that family relationships cannot replicate. Sun illustrates the affective relief of discovering shared bodily experience.

Anny similarly describes how peer interaction normalizes cognitive aging realizing that forgetfulness and personal problems are universally shared. The affective mechanism is collective normalization: when experiences of bodily decline are shared openly and met with recognition rather than judgment, the shame and isolation they produce diminish. This solidarity was particularly significant for informants who had recently retired and lost the social anchoring of professional life the Sekolah Lansia provides a peer community grounded in shared life stage rather than shared occupation. Cramm (2015) demonstrates that community involvement enhances elderly well-being precisely because communities of shared experience reduce the psychological burden of aging-related stigma. The peer solidarity of the Sekolah Lansia constitutes an affective resource that complements the vertical support of intergenerational family care in ways that family relationships alone cannot provide.

The Expression of Distress (Negative Affect) in Experiences of Digital Adaptation

Negative affect within the framework of subjective well-being is understood as the emergence of emotionally unpleasant responses arising from individuals lived experiences. Diener (2009) characterizes negative affect as reflecting adverse emotional states that manifest in feelings experienced as undesirable or distressing. Within the context of digital adaptation, negative affect captures the emotional costs that may accompany encounters with technological demands, disruptions to established routines, or perceived inadequacies in one's capacity to engage with digital systems.

Experience of Confusion in the Face of Difficulty

Confusion is the most frequently reported and functionally consequential form of negative affect. Unlike fleeting frustration, confusion produces sustained cognitive strain that alters behaviour: avoidance of specific platforms, curtailment of service participation, and erosion of personal control over daily activities. Pri describes how advertising interruptions in WhatsApp create a cycle of repeated failure that is both practically disruptive and emotionally exhausting. Some of the ads that frequently appear on social media make it difficult for him and leave him confused when he's actively using social media.

The functional consequences extend beyond momentary discomfort. Ningsih's inability to navigate QRIS at shopping centres led her to defer eating out until family assistance was available; Tati was excluded from a Zoom-based learning session due to device limitations a direct loss of peer educational participation. Crucially, these consequences are not uniformly temporary: for informants with strong peer and family support, confusion tends toward resolution through guided reattempt; for those with compounded barriers visual decline combined with interface complexity, as Endang describes with administrative registration portals confusion consolidates into stable avoidance. Banister (2000, cited in Hess, 2003) explains that confusion arises from insufficient cognitive resources for the interpretive demands placed on the individual. Diener and Biswas-Diener (2008) connect this erosion of personal control directly to reduced SWB. Shang et al. (2024) further document that technology anxiety rooted in confusion significantly decrements SWB, particularly when digital services concern healthcare or financial management.

Feelings of Inferiority and Perceived Obsolescence in the Digital Era

Digital adaptation is frequently accompanied by feelings of inferiority arising from awareness of comparative digital disadvantage relative to younger generations. Many participants interpret age-related limitations as evidence of technological ineptitude, eliciting shame and negative self-appraisal compounded by the need to seek assistance, often conducted discreetly to preserve dignity. Ningsih articulates this internalization:

“That’s why we want to ask that kid for help discreetly. Why? So he won’t be found out for being clueless. Older people are highly perceptive and sensitive—that’s just part of who they are. But really, it’s embarrassing. How can he not get it? Wow, he’s so clueless.” (Ningsih, 30 September 2025)

These emotional dynamics are not static. Anny's trajectory from feeling no longer useful following retirement, through a conscious reappraisal toward active peer-supported learning at the Sekolah Lansia and growing digital confidence illustrates how inferiority, under conditions of adequate social support, can catalyze renewed adaptive motivation. Ningsih's parallel arc from covert shame toward habitual use via peer instruction corroborates this pattern. Importantly, this adaptive function was more evident among informants with prior organisational experience and peer network access; Tati, with lower

educational background and limited Sekolah Lansia participation, remained in more persistent states of shame. Akdoğan (2019) associates inferiority feelings with lower happiness; the present findings extend this by showing the relationship is moderated by the quality of available social support and the presence of non-judgmental learning environments.

Anxiety Concerning Digital Security

Digital adaptation among independent older adults is marked by heightened concern over digital security, particularly around financial risk and online fraud. This anxiety generates concrete behavioral restriction: participants avoid mobile banking, confine assistance-seeking to trusted family members, and in cases of direct fraud exposure, partially withdraw from digital engagement. Widi illustrates how unfamiliar callers claiming familial identity generate sustained uncertainty. Widi perceives certain negative effects of social media use, expressing concern about the risk of fraud at her age, a worry compounded by her sense of declining memory.

This vulnerability is particularly pronounced among older adults living alone. Pak Luki deceived by a false prize offer totaling 1.5 million rupiah now refuses all unsolicited digital contact and cross-checks unfamiliar communications against family verification, a process unavailable to him in real time given his child lives abroad. Bu Khotijah explicitly refuses mobile banking despite family encouragement. Unlike confusion, which can be resolved through guided learning, security anxiety tends toward persistence: the threat is environmental rather than a skill gap, and competence alone cannot eliminate fraud risk. This distinction matters for SWB: confusion-based avoidance is potentially temporary; security-based avoidance is structurally sustained, establishing an ongoing affective baseline of vigilance. McLaughlin et al. (2007) argue that worry generates sustained negative affect through rumination; Wilson (cited in Diener, 2009) positions freedom from worry as a core condition of happiness. The perceived unpredictability of digital environments thus constitutes a central source of enduring negative affect.

Disappointment in the Face of Impatience during the Process of Adaptation

Disappointment arises when family guidance is delivered without sufficient empathy for older adults' different learning tempo. Children's tendency to assume rapid comprehension and teach at an accelerated pace produces a disjunction between the elderly's need for gradual, repetitive learning and the hurried modes of instruction they receive. Ningsih describes this dissonance. She thought she would adapt quickly to social media, just like young people do. However, when the lessons she was taught about social media didn't match his age-appropriate abilities, she became frustrated with the teaching methods that weren't tailored to her needs.

Tati describes how a child's impatience escalated to anger, making the learning process emotionally tense and reducing her willingness to seek further assistance from family. This pattern was more prevalent among informants with lower digital confidence

who depended more heavily on family instruction for them, impatient guidance not only failed to build competence but actively reinforced inferiority feelings and reduced adaptive motivation. The contrast with peer facilitation at the Sekolah Lansia is analytically significant: peers guide with patience, repetition, and an absence of hierarchical judgment precisely the conditions that sustain willingness to persist. Dijk and Zeelenberg (2002) argue that disappointment is rooted in interpersonal relations when others' responses fail to meet expectations, reflecting disruptions in relationship quality that undermine positive life evaluations and compound pre-existing inferiority feelings.

Discussion

The findings of this study demonstrate that the adaptive experiences of functionally independent older adults in the digital era shape the meaning of SWB through the dynamic interplay between cognitive evaluation (life satisfaction) and affective dynamics (positive and negative affect). Diener (2009) posits that SWB is constituted through individuals' appraisals of their lived experiences appraisals that this study shows to be neither uniformly positive nor stable, but shaped by specific adaptive challenges and available resources.

Digital adaptation unfolds through a learning-by-doing process, beginning with basic communicative functions and extending incrementally to entertainment, health information, and partial engagement with administrative services. This pattern resonates with Brickman and Campbell's (1971, in Diener, 2009) adaptation mechanisms: older adults progressively recalibrate their standards such that digital life becomes integrated into their life course. Positive affect emerges when this alignment is achieved; negative affect emerges when the gap between adaptive demands and available resources widens. This progressive recalibration contributes to life satisfaction as digital life becomes integrated into the elderly's life course a process through which older adults emerge as adaptive agents who actively construct meanings of SWB within conditions of social and technological change.

The role of social support is best understood through a dual-pathway model: as a moderator, family and peer support reduces the impact of functional and interpersonal barriers on SWB; as a mediator, it enhances digital competence, which in turn produces positive affect and life satisfaction. As a moderator, family and peer support reduces the impact of functional and interpersonal barriers on SWB evidenced by lower anxiety and confusion levels among informants with readily available assistance. As a mediator, it enhances digital competence, which in turn produces positive affect and life satisfaction. This dual mechanism extends conceptualizations of social support in digital contexts beyond simple help-seeking to a process of co-constructed competence and emotional resilience. These findings align with Lazarus and Folkman's (1984) coping theory: both problem-focused coping (seeking assistance, simplifying interaction) and emotion-focused coping (reframing challenges, drawing on peer solidarity) operate through the social support ecosystem, and the availability of that ecosystem determines the balance between adaptive progress and negative affect.

The positioning of negative affect as an adaptive mechanism rather than simply a deficit requires careful empirical grounding. Several trajectories observed in this study suggest that negative experiences can catalyze renewed adaptive effort: Bu Anny's progression from feeling "no longer useful" to deliberate re-engagement, and Bu Ningsih's sustained motivation to reduce digital dependence despite recurrent confusion, illustrate this dynamic. However, this adaptive function is not universal. Pak Luki's withdrawal from certain digital financial services following fraud, and Bu Tati's persistent avoidance of Zoom, represent cases where negative affect produced behavioral restriction rather than motivational re-engagement. The modulating variable appears to be the availability and quality of social support: where strong peer and family networks exist, negative affect tends toward reflection and reattempt; where such networks are limited or low-quality, negative affect reinforces avoidance. This supports Diener's (2009) contention that positive and negative affect perform complementary adaptive functions, and that subjective well-being is closely linked to the capacity to manage emotional dynamics throughout the adaptive process.

Compared with recent literature, this study's findings both confirm and extend existing evidence. Petersen et al. (2023) document a positive association between ICT use and social connectedness among older adults, but their analysis operates at the level of aggregate outcomes without specifying the mechanisms through which these effects are produced. The present study fills this gap by identifying the particular pathways selective platform adoption oriented toward communicative and relational functions, peer-facilitated skill acquisition within a structured community program, and family-mediated guided practice through which digital engagement sustains social embeddedness and positive SWB in an Indonesian urban context. The contribution is thus not merely confirmatory but mechanistic: it answers not only whether digital engagement supports SWB, but how and under what social conditions.

The negative affect findings align with Shang et al. (2024), who demonstrate that technology anxiety is associated with reduced SWB and decreased intention to use digital public services. The present study extends this evidence by documenting the specific behavioral manifestations of that anxiety in daily life avoidance of QRIS, mobile banking refusal, restriction of trusted contacts and by distinguishing between anxiety that is resolvable through learning (confusion-based) and anxiety that is structurally persistent (fraud-risk-based). By mapping these behavioral consequences at the individual level, this study contributes a granular account of how technology anxiety operates in the daily lives of older adults an account that quantitative survey instruments are structurally unable to capture.

Against Mannheim's (2024) theoretical model of ageism as a barrier to digital engagement, this study provides field-level evidence from a non-Western context: the barrier is not only attitudinal but material and interface-based font sizes, advertising interruptions, and complex navigation systems function as structural exclusions regardless of motivation. The Sekolah Lansia emerges as a community mechanism that partially

compensates for these structural barriers through peer solidarity and patient accompaniment, representing a model of collective digital inclusion that formal training programs and individual family instruction do not replicate. This finding contributes to the literature on social and attitudinal determinants of digital technology adoption by specifying what makes informal peer learning environments more effective than either intergenerational family instruction or formal training: the combination of horizontal solidarity, iterative repetition, and freedom from hierarchical evaluation. Independent older adults, in this account, are adaptive actors who construct SWB through selective digital engagement, affective management, and relational resourcefulness a characterization that challenges deficit-oriented framings of elderly digitalization.

Study Limitations

Several limitations of this study warrant acknowledgment. First, the sample is drawn exclusively from a single Sekolah Lansia program in an urban-adjacent district of Yogyakarta, a province with atypically high elderly population density and internet penetration. The findings may not transfer directly to rural settings, lower-infrastructure contexts, or provinces with less developed elderly support infrastructure. Second, all primary informants are active Sekolah Lansia participants, which introduces a positive engagement bias: older adults who have found digital adaptation most challenging, or who have withdrawn entirely from digital engagement, are structurally excluded from this sample. Third, the cross-sectional design all interviews conducted in a single period cannot capture longitudinal changes in SWB or adaptive strategies. Whether the adaptive motivational function of negative affect identified in this study is sustained over time, or whether it eventually erodes under continued difficulty, cannot be determined from the present data. Fourth, the study does not include older adults with varying levels of functional independence; findings are specific to those capable of daily living activities without assistance. Future research should employ comparative samples across urban-rural contexts, include older adults with varying functional capacities, and use longitudinal designs to examine the stability of digital adaptation trajectories and their SWB consequences over time. Mixed-methods approaches integrating validated SWB instruments (e.g., SWLS, PANAS) with in-depth qualitative data would also strengthen comparability with international evidence. The transferability of findings is therefore most plausible for urban or peri-urban elderly programs in Indonesian provinces with comparable digital infrastructure and elderly population density, and should be approached cautiously when applied to rural, lower-income, or lower-infrastructure contexts.

Conclusion

On the basis of the empirical findings, the meaning of subjective well-being among independent older adults in the digital era is manifested in their capacity to align digital technology use with everyday needs, personal capacities, and available social support. This is reflected concretely through three dimensions of SWB: life satisfaction derived

from meaningful activities such as exercise facilitation, creative pursuits, and comparative appreciation of digital convenience; positive affect expressed through enjoyment of entertainment and digital services, enthusiasm for social participation in the Sekolah Lansia, a sense of mattering through relational roles as parents and grandparents, and the experience of companionship among peers; and negative affect arising from confusion when navigating complex interfaces, feelings of inferiority relative to younger generations, anxiety concerning online fraud and financial security, and disappointment in the face of impatient intergenerational guidance. Digital adaptation is thus not merely a technical process, but a reflective space through which older adults confront social change and negotiate emotional experiences that shape their subjective constructions of well-being.

Subjective well-being among independent older adults in the digital era emerges from the interplay between cognitive evaluations of life and the affective dynamics that accompany the process of adaptation. Positive affect reinforces feelings of agency, meaningfulness, and social connectedness, while negative affect reveals limitations and vulnerabilities and, when accompanied by adequate social support, can encourage renewed efforts to adapt. Several informants demonstrated a trajectory from feelings of shame or obsolescence toward deliberate re-engagement, suggesting that negative affect may serve an evaluative and motivational function within the broader dynamics of SWB. Subjective well-being thus evolves through the ongoing negotiation of these emotional experiences in tandem with selective, context-sensitive processes of self-adaptation.

The meanings of well-being that emerge from this study are fundamentally relational, shaped through the balance between individual capacities and social support. Independent older adults act as adaptive agents who actively construct subjective well-being through selective and purposeful engagement with digital technologies. Family members and peer communities, most notably the Sekolah Lansia, constitute crucial contexts that facilitate adaptation as sources of practical skill development and as spaces for sustaining social relationships, peer solidarity, and shared aging experience. The Sekolah Lansia is particularly significant as a site of collective adaptation, providing patient and non-judgmental support that family members may not always be able to offer.

The findings of this study have important implications for program design and practice. The Sekolah Lansia curriculum should incorporate peer-based digital mentoring, including structured peer-facilitator roles and digital safety literacy modules with fraud simulations and step-by-step guidance for accessing online public services. Additionally, family caregivers need guidance to interact empathetically and patiently, which involves repeated explanations, non-judgmental corrections, and allowing older adults the freedom to set their own learning pace. For digital service developers and public administrators, implementing elderly-friendly interface standards is an urgent priority, such as using larger fonts, simplified navigation, voice guidance, and easily accessible security verification mechanisms without complicated procedures on small screens. From an academic perspective, future research is recommended to use comparative samples between urban and rural areas, longitudinal designs to examine changes in affective

experiences over time, and mixed-methods approaches that integrate validated SWB instruments such as the SWLS and PANAS with qualitative data to strengthen international comparability and measure the impact of digital adaptation on objective well-being indicators

In sum, this study affirms that independent older adults are not passive subjects of digital transformation, but adaptive actors who construct subjective well-being through selective digital practices, relational support, and the ongoing management of affective experience. The Sekolah Lansia community model demonstrates particular promise as a site of collective digital adaptation and warrants systematic integration into national BKL program frameworks as Indonesia's aging population continues to grow.

Acknowledgement

This article is an extended and further developed version of an undergraduate thesis completed at the Department of Social Development and Welfare, Faculty of Social and Political Sciences, Universitas Gadjah Mada, Indonesia.

Author's declaration

The authors made substantial contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. And the authors read and approved the final manuscript.

Funding

The authors received no financial support for the research, authorship, or publication of this article.

Availability of data and materials

All data are available from the authors.

Competing interests

The authors declare no competing interest.

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