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Eudaimonic media engagement in virtual reality: Memory, identity, and well-being among older Black adults

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Abstract

Introduction. While virtual reality (VR) is often studied for entertainment, its role in supporting reflection and well-being in later life is underexplored. This exploratory study investigates how older Black adults use VR to engage with personal history, exploring its potential as a restorative technology.

Method. Nine older Black adults who were VR novices engaged with tailored scenarios on an Apple Vision Pro headset. We then conducted semi-structured interviews to explore their reflective experiences.

Analysis. Interview transcripts were analysed using a focused thematic analysis guided by theories of eudaimonic engagement and existential resonance.

Results. The findings show that VR facilitates existential resonance, where generic scenes align with personal values. This turns passive memories into a participatory reliving of the past, described as being ‘in it, not looking at it.’ These resonant encounters were eudaimonically restorative, transforming bittersweet emotions into peace and joy.

Conclusion(s). The study demonstrates that VR can function as a technology of care by facilitating immersive resonance. This process supports restorative reflection with applications in reminiscence therapy and grief support, reframing the medium as a mirror for personal history.

Introduction

Immersive technologies, such as virtual reality (VR), are increasingly studied as tools to support the well-being of older adults, often by addressing social isolation or providing novel forms of engagement (Finnegan & Campbell, 2023; Li et al., 2024). For older Black adults, who have historically faced systemic barriers to leisure, VR can provide symbolic access to experiences that might otherwise remain out of reach (Huang et al., 2026; Kalantari et al., 2023). Prior work highlights VR's potential as both a substitute for physical travel and a motivator for future activity, positioning it as a medium that can address forward-looking desires and experiential inequities (Yeh et al., 2019).

While this future-oriented focus is important, it leaves underexplored the role of technology in mediating authentic engagement with the past. Reflection, remembrance, and reconnection with personal history are central dimensions of later life, yet they have received less attention in VR research (Li et al., 2025). The immersive qualities of VR make it possible not only to view content but to feel absorbed within it, shifting users from passive observers into active participants. In some cases, this participation takes the form of existential resonance, where a mediated experience aligns with a person's core values and life themes, even if it does not directly mirror their biography (Liao et al., 2025). These affordances suggest that VR may be uniquely positioned to foster reflective, past-oriented engagement (Lee & Xin-Ting, 2024; Mao et al., 2024).

This manuscript examines how VR can facilitate eudaimonic reflection among older Black adults. The concept of eudaimonic reflection is a form of engagement that emphasises meaning-making, self-continuity (Oliver & Raney, 2011) and is increasingly recognised as a key outcome for meaningful interactive systems (Woźniak et al., 2023). We aim to explore VR's potential to act as an eudaimonic technology, which creates emotionally resonant spaces where users can reconnect with cherished memories and lost loved ones (Wilding et al., 2024). Guided by this perspective, we proposed the following three research questions:

1. How do the participatory and embodied qualities of VR facilitate spontaneous and vivid engagement with memories of past relationships and experiences?
2. What is the emotional texture of these VR-evoked memories, particularly when they involve mixed or bittersweet feelings?
3. How did participants describe the experience of VR-facilitated remembrance in comparison to recalling memories with traditional media like photographs or films?

Theoretical framework

To understand how virtual reality (VR) facilitates restorative reflection, our framework integrates theories of meaningful media use with the psychosocial dynamics of aging. We first explain how VR's immersive affordances can trigger eudaimonic engagement through a process of existential resonance. We then situate this process within the specific developmental and cultural contexts of older Black adults.

VR as a medium for eudaimonic engagement

Virtual reality offers immersive affordances that make it distinct from other media. Its ability to heighten presence, generate sensory realism, facilitate perspective-taking, and sustain attention creates an experiential environment that is not only absorbing but also emotionally powerful (Riva, 2022; Slater, 2009). Across health and prosocial domains, prior work shows that VR can foster empathy,

deepen conceptual understanding, and shift attitudes and intentions, suggesting that VR activates perspective-taking and links experience to the self (Ahn, 2015; Wang et al., 2024). Research on meaningful media use holds that eudaimonic outcomes arise when media invite reflection on purpose, identity continuity, or moral concerns (Oliver et al., 2018). Such engagement has been tied to well-being benefits, including *'making sense of difficulties'* and *'greater acceptance of the human condition'* (Ott et al., 2021) in contrast to hedonic engagement, which is primarily for pleasure. Crucially, eudaimonic experience does not require uniformly positive or uplifting content: meaning often emerges through mixed affect (e.g., poignancy, nostalgia, sadness, and compassion) that encourages contemplation of virtue and the human condition, yielding *'appreciation'* and sense-making rather than simple pleasure (Daneels et al., 2021; Oliver & Raney, 2011). By intensifying attentional focus and emotional salience (Chirico & Gaggioli, 2019), VR is well positioned to elicit such eudaimonic outcomes; we argue that the shift from passive observation to embodied participation in high-presence environments is a key mechanism that distinguishes VR from traditional media and unlocks its eudaimonic potential.

Resonance as the pathway to meaning

Resonance describes a felt alignment between mediated content and an individual's sense of meaning or values (Oliver et al., 2018). Scholars distinguish between social resonance, when a mediated experience mirrors personally lived events, and existential resonance, when the content connects to abstract life themes such as justice, love, or belonging (Cupchik et al., 1998; Liao et al., 2025). While both forms are important, existential resonance provides the most compelling explanation for how VR can transform seemingly generic experiences into personally significant ones. In our prior work, participants reported that non-autobiographical VR scenarios, such as a live concert or a courtside basketball game, nevertheless prompted vivid personal memories and reflections. Work on digital games shows that emotional resonance can prompt self-reflection and reconsideration of one's relation to those themes (Phelps et al., 2020). Complementing this, Huang et al. (2024) found that a nostalgic storytelling VR (vs. a text-reading VR) increased nostalgia, media appreciation, social connectedness, and state-level well-being, with the well-being effect serially mediated by nostalgia and appreciation. Taken together, emotional resonance brought by VR experience not only engages self-focused reflection (identity continuity) but also fosters self-other alignment, offering two pathways by which VR renders generic scenarios personally meaningful. In conclusion, the evidence suggests that VR's immersive qualities heighten absorption and presence (Jennett et al., 2008), which allows users to project their own values and experiences onto the content and thereby convert neutral scenarios into emotionally restorative ones.

Aging, cultural context, and amplification of resonance

The strength of resonance is shaped not only by media affordances but also by users' developmental and cultural contexts. Gerontological research shows that older adults prioritise emotion regulation and meaning-making to a greater extent than younger adults, reflecting shifts in motivational goals across the lifespan (Carstensen, 2006; Erikson & Erikson, 1998). This makes them especially responsive to experiences that support reflection, continuity, and restoration (Moore et al., 2021). Among older Black adults, these processes are further intensified by cultural-historical circumstances. A legacy of urban displacement, systemic racism, and community resilience has created a heightened need for continuity and cultural memory (Fullilove, 2016). Prior work has also shown that nostalgia-driven VR design can create emotionally and culturally resonant experiences for this population (Huang, 2024). When VR content triggers existential resonance in this group, it carries both personal and collective

weight, offering not only individual restoration but also a sense of cultural repair (Liao et al., 2025; Oliver et al., 2018).

In summation, our framework proposes a clear, four-step process: (1) VR's immersive affordances create a powerful sense of participatory presence. (2) These affordances facilitate existential resonance, which allow users to align generic content with their own life themes and values. (3) This resonance, in turn, triggers eudaimonic engagement, encouraging deep, restorative reflection. (4) Finally, this entire process is especially pronounced among older Black adults because their developmental stage and cultural context intensify the drive for meaning-making and identity continuity.

Methods

This qualitative study examined the reflective experiences of older Black adults with immersive technology. The research was conducted at a senior centre in a mid-sized U.S. city with a purposive sample of nine participants (eight females, one male; $M = 72.9$, $SD = 6.0$, range = 64-82), all of whom were VR novices. Over a four-week period, participants engaged in several tailored VR sessions (8-10 minutes each) using an Apple Vision Pro headset. Following the sessions, two authors conducted and transcribed semi-structured interviews (25-30 minutes) exploring participants' perceptions of VR, its role in evoking memories, and the emotional quality of their reflections.

We performed a focused thematic analysis of the interview transcripts, guided by the framework of Braun and Clarke (2014). The process involved two researchers familiarising themselves with the data, independently coding the data inductively, and then meeting to reconcile differences and develop a shared codebook. These codes were then grouped into broader themes, a final stage of interpretation guided by theories of eudaimonic media engagement, resonance, and lifespan development. All participants provided informed consent, and researchers were prepared to navigate any sensitive emotions that arose during the study.

Findings

Our analysis of the interviews revealed three key themes regarding the use of VR for reflective engagement. First, the technology facilitated a profound and restorative connection to memories of past and lost loved ones. Second, it served as a powerful engine for nostalgia, reconnecting participants with past selves and cherished activities. Finally, participants described the immersive experience as qualitatively different from traditional media, a feeling of participatory presence that was central to its impact.

Deconstructing immersion: from observation to embodied participation

Before participants could reflect on their past, they had to experience a sense of participatory presence, a feeling of being actively 'in' the virtual world. Across the interviews, the defining quality of this absorption was a powerful sense of participation and transportation that felt fundamentally different from watching traditional media. Participants described the feeling of being moved into another place entirely. As Participant 7 explained, '*it just takes you to a whole other place*', a sentiment echoed by Participant 9, who noted, '*you feel like you're there, but it's sort of like takes you there*'. This sensation of entering '*another world*' was not just about observing a new environment, but about becoming an active part of it.

This sense of participation was often accompanied by embodiment, producing visceral, physical reactions that cemented the feeling of being there. The most succinct description of this phenomenon came from Participant 6, who stated, *'I was in it, not looking at it'*. This feeling of being *'in it'* was so profound that it often produced visceral, embodied reactions. Importantly, this immersion did not rely solely on overlap with participants' prior life experiences. VR also opened perspectives they had never occupied, lowering the cognitive effort typically required for imagination and removing practical barriers to access. Through high-presence rendering, VR placed participants in unfamiliar settings and roles that would otherwise be out of reach, thereby enabling new perspectives and easier perspective-taking. Participant 1, for example, felt she was swimming alongside virtual sea life despite her real-world limitations, explaining, *'I was in there with them... And I can't even swim'*. This deep sense of participatory immersion was the crucial foundation that enabled the personal reflections that followed.

Resonance with past selves and activities

Beyond its immersive qualities, VR often prompted participants to reflect on earlier stages of their lives and reconnect with aspects of identity that had become less accessible over time. These reflections emerged when the content resonated with enduring passions or values, even when the scenarios themselves were not biographically specific.

For some participants, this resonance was expressed as a sense of reconnection with lifelong interests. Participant 5 described the VR experiences as recovering something *'missing in your life, something that you haven't seen in a long time.'* Similarly, the virtual basketball game carried particular significance for Participant 7, who explained, *'when I was younger, I used to watch basketball all the time.'* In both cases, the technology supported a meaningful bridge between present circumstances and earlier activities that had shaped their sense of self.

For others, resonance was tied to vivid memories of specific past experiences. Participant 8 described feeling *'wistful'* during a virtual music performance, which transported him back to his younger, more spontaneous self and reminded him of the *'crazy things'* he once did to get a rock star's autograph. Participant 9 reflected on his childhood enjoyment of Kennywood Park, noting that he loved it *'even when I was younger.'* These moments show how VR facilitated connections to deeply held values and identities, transforming generic content into opportunities for personal reflection.

Participants also used VR to confront longstanding regrets or unfulfilled aspirations, experiencing a sense of alternative realisation that supported well-being. Participant 1 contrasted her circumstances with a partner's prior travel: *'My girlfriend went to Africa for real. I couldn't afford it.'* After the Africa VR experience, she explained, *'it empowered me... it gave me something... something I never had before.'* Here, VR did more than cue nostalgia; it offered a barrier-free way to realise a long-held wish, restoring agency and continuity with a valued version of the self. To sum up, these findings illustrate how VR can foster resonance with past selves and cherished activities. By enabling participants to revisit and re-engage with these aspects of their lives, the technology provided not only a sense of continuity but also a renewed appreciation for the values and interests that have defined their identities across time.

Eudaimonic outcomes of resonant reflection

While participants' reflections often carried elements of longing or loss, the dominant outcome was not sadness but restoration. The immersive quality of VR created conditions where emotionally

complex memories could be engaged in ways that affirmed continuity, produced calm, and supported well-being.

Participant 8 described this complexity as feeling *'wistful'* during a virtual music performance, recalling a more spontaneous version of himself. Although the reflection involved a recognition of change and the passage of time, the overall effect was affirming rather than discouraging. Similarly, reflections on lost loved ones carried bittersweet qualities yet were consistently described as producing peace. Participant 6 explained that her VR experience brought her back to vivid memories of her late husband, but instead of pain, she found tranquillity: *'When I used the goggles, it just put me in a serene place... I had a sense of calmness.'* Participant 2 emphasised the potential for these sessions to provide *'a good sense of joy and peace'* even when she was *'down or depressed.'*

These findings highlight what can be described as eudaimonic resonance: the process by which immersive media connects individuals to meaningful aspects of their lives, allowing them to navigate bittersweet emotions and transform them into restorative outcomes. By enabling participants to engage directly with emotionally significant memories and values, VR offered a safe space for reflection that reinforced identity continuity and emotional well-being.

Discussion

Summary and interpretation of the findings

This study reveals an underexplored function of VR for older adults: its capacity to support restorative engagement with personal history. In doing so, it offers a deeper understanding of *'immersion,'* deconstructing it into two key components: participatory presence and embodiment. Our findings demonstrate that participants did not merely feel present in a location; they described being absorbed in the unfolding action of their own remembered experiences. This shift, from passive recollection to active reliving, created a form of engagement distinct from both traditional reminiscence and generic spatial presence.

Our findings provide a clear, real-world illustration of existential resonance as a key mechanism for meaningful media engagement (Liao et al., 2025). Participants' interviews show that VR scenarios, though not autobiographically specific, aligned with enduring passions, values, and identities in ways that *'struck a chord.'* A concert triggered reflections on youthful spontaneity, a basketball game reconnected participants with formative interests, and nature scenes evoked memories of joy and adventure. While previous studies distinguish between social and existential resonance, our study demonstrates how a technology's participatory and embodied affordances can systematically facilitate the latter, turning generic content into a powerful catalyst for value-based reflection.

Furthermore, the restorative outcomes of these resonant moments directly support the framework of eudaimonic media engagement (Oliver & Raney, 2011; Oliver et al., 2018; Ott et al., 2021). Participants described reflections that blended longing with calmness, poignancy with joy. Encounters with memories of lost loved ones produced not despair but tranquillity and peace. This operationalises the predictions of Continuity Theory and the findings of Oliver and Raney (2011); we observed participants actively using the mediated experience for the narrative identity work that is central to later life. This demonstrates how VR can facilitate meaningful experiences in which individuals derive restoration by affirming continuity of self and connection to what they most value.

These results position VR as a potential ‘*eudaimonic technology*.’ By enabling immersive resonance and eudaimonic reflection, VR offers applications in gerontology and therapeutic practice. Consistent with this view, Huang et al. (2024) found that nostalgic storytelling in VR can increase appreciation and well-being. Our findings further extend this eudaimonic function by showing how high-presence, embodied participation can enhance reminiscence therapy, support grief counselling, and contribute to mood restoration. Importantly, VR also affords symbolic completion of unfulfilled wishes: by lowering real-world barriers and transporting users into otherwise unreachable scenarios, it enables people to enact long-standing aspirations and reconnect these experiences to their past selves. These functions point to several key priorities for HCI and design: creating content that prioritises resonance over realism, enabling personalisation and co-creation, and ensuring accessibility to diverse populations. These applications are especially significant for older Black adults, for whom technology-mediated reflection may help restore a sense of equity in access to meaningful experiences.

Limitations and future directions

This exploratory study has several limitations. The small, purposive sample (n=9) from a single community centre limits generalisability and may reflect selection bias. Additionally, the use of pre-selected scenarios and a cross-sectional design constrain personalisation and our understanding of the effects over time. Finally, the use of a high-fidelity headset (Apple Vision Pro) likely intensified the immersive experience, and outcomes may differ on more widely available, lower-specification devices. These limitations point to several avenues for future research, including longitudinal studies to track well-being over time, co-design approaches to create personalised ‘*virtual memoryscapes*,’ and mixed-method designs that integrate physiological data for a more holistic view of restorative engagement.

Conclusion

This exploratory study demonstrates that VR can do more than open access to new environments; it can foster restorative engagement with personal history and enduring values. By supporting immersive resonance and eudaimonic reflection, VR helps older adults affirm self-continuity, reconnect with meaningful life themes, and experience emotional restoration. These findings invite a reorientation of immersive technologies toward care and reflection, highlighting their potential as an eudaimonic technology for aging, identity, and well-being.

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