

**INNOVATIVE  
RESEARCH  
ON AGING  
AWARDS  
2023**

**INSPIRING NEXT PRACTICES**





The Innovative Research on Aging Awards recognize recent applied research that offers important implications for the senior living and aging services industries. Created to inspire next practices, the annual award honors groups and individuals for their research that can make a difference in the lives of older adults.

Each year, Mather Institute reviews dozens of submissions on a wide range of topics, including health and well-being of senior living residents, technological advancements for older adults, senior living workforce, and aging in place.

The Institute selects award recipients based on

- relevance to important problems in the senior living industry
- quality of research methods
- potential actionability of findings and recommendations
- innovativeness of investigations

We hope these findings will benefit the industry as a whole, as organizations transform them into next practices.

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**2023 GOLD AWARD RECIPIENT**

## COMBATTING ISOLATION WITH VIRTUAL REALITY Connecting Residents with Dementia with Family Members & the World

University of California Santa Barbara: Tamara Afifi, PhD, Chris Otmar, PhD, Allison Mazur, Norah E. Dunbar, Nancy Collins  
Duke University: Kyle Rand  
Osaka University of Economics: Ken Fujiwara  
Blizzard Entertainment: Kathryn Harrison  
University of Washington: Rebecca Logsdon

### FOCUS: Can residents with dementia use VR to alleviate stress, loneliness, and isolation?

“The VR sessions were associated with improvements in residents’ affect and stress, their relationship with their family members, and their quality of life.”

Many residents of senior living with dementia feel lonely and isolated from their family members—and from the world at large—which can diminish mental health and create further cognitive deficits. A virtual reality (VR) program called Rendevar provides an innovative and affordable solution: it enables these residents to maintain family relationships, engage with life, and reconnect with their past, regardless of location, through its advanced networking and livestreaming capabilities.

For this study, 21 residents living in a senior living community and their family members (who participated in the VR with the resident remotely) engaged in a baseline telephone call, followed by three weekly VR sessions. In Session 1, the pair experienced travel adventures virtually together, including a safari, skydiving, and a boat ride in Thailand. In Session 2, the residents and family members were taken back in time to favorite addresses from the past (e.g., childhood homes, family vacation sites, where they married) using Google Street View in the VR. Finally, they shared family photos and videos inside the VR environment.

### FINDINGS

The VR sessions were associated with improvements in residents’ affect and stress, their relationship with their family members, and their quality of life. Family members’ negative affect, depressive symptoms, and caregiver burden decreased, and their mental health improved after using the VR. Residents and family members who experienced socially engaging VR sessions reported better psychological and relational well-being, with residents also experiencing improvements in quality of life.

### READ THE ABSTRACT

Afifi, T. D., Collins, N., Rand, K., Otmar, C., Mazur, A., Dunbar, N., Fujiwara, K., Harrison, K., & Logsdon, R. (2022). Using Virtual Reality to Improve the Quality of Life of Older Adults with Cognitive Impairments and their Family Members who Live at a Distance. *Health Communication*, Mar 6, 1-12. DOI:10.1080/10410236.2022.2040170.

### FROM RESEARCH TO REAL LIFE



This VR platform provides a solution to challenges of residents’ social isolation, enabling and enhancing social connections with family even when physical contact is not possible. Rendevar’s advanced communication and networking technology allows multiple people to travel in VR, co-view photos and videos, and engage in novel activities together, all while sharing stories in the process, even if they live in different parts of the world. All of this occurs from a tablet operated by an employee. The data indicate that it is safe, easy to use, and transformative for residents and families.

Additionally, the authors point out that a program like this can help ease the burden on senior living employees by providing additional connections and experiences for residents and infusing joy into the caregiving experience; it can also strengthen connections between distant family members, the resident, and the community.



**2023 SILVER AWARD RECIPIENTS**

## CLASSIFYING NEIGHBORHOODS BY COGNITIVE HEALTH FACTORS Exploring the Impact of Everyday Environment on Dementia Risk

University of Michigan's Institute for Social Research: Jessica Finlay, PhD, Philippa Clarke, PhD, Ken Langa, PhD  
University of Alabama at Birmingham: Suzanne Judd, PhD  
University of Minnesota: Michael Esposito, PhD

### FOCUS: How can the design of a senior living community support residents' cognitive health?

Many studies have focused on modifiable individual risk factors for dementia, such as physical inactivity and social isolation. However, people's everyday environments are largely overlooked. This paper introduces a theoretical concept called *Cognability* to investigate how well a community supports cognitive health through places to exercise, connect with others, and keep aging people's minds active. Cognability aims to identify which specific neighborhood features are most protective of cognitive health among diverse aging adults and in varying geographic contexts.

Senior living providers can take lessons from what helps community-dwelling older adults, and take this research into account when they build or expand infrastructure that takes this research into account.

The study used data from the Reasons for Geographic and Racial Differences in Stroke Study, a sample of older Black and White adults in the US. A total of 21,151 respondents contributed 73,228 cognitive scores between 2006

and 2017. Of these, 40% identified as Black, 56% identified as female, and 41% had attained at least a college degree. The average respondent was approximately 67 years old at the time of their first cognitive test. The authors examined the data for associations between cognitive function and specific neighborhood features.

### FINDINGS

The analysis reveals that better cognitive function was significantly associated with access to civic/social organizations such as social clubs, veterans' organizations, alumni associations, and volunteering groups, as well as recreation centers, performing arts establishments, and museums. On the other hand, highways (linked to air and noise pollution exposure) and fast-food establishments were significantly associated with worse cognitive function. The results suggest that the unequal distribution of amenities and hazards across neighborhoods may help account for considerable inequities observed in cognitive health among older adults.

“This paper introduces a theoretical concept called *Cognability* to investigate how well a community supports cognitive health through places to exercise, connect with others, and keep aging people's minds active.”

### READ THE ABSTRACT

Finlay, J., Esposito, M., Langa, K. M., Judd, S., & Clarke, P. (2022). Cognability: An Ecological Theory of neighborhoods and cognitive aging. *Social Science & Medicine*, 309, 115220.

### FROM RESEARCH TO REAL LIFE

Cognability is highly relevant to the design of senior living residence layout, infrastructure, and program planning to support brain-healthy physical activity, social connection, and intellectual stimulation for residents. Providers should consider the following elements of Cognability:

- Natural spaces such as mini-parks, water fountains, raised garden beds, and shaded benches can support physical activity and socialization.
- Centrally located and accessible activity hubs for coffee chats, board games, art installations, and musical performances can enhance opportunities for socialization and creative/complex intellectual stimulation.
- Buildings and windows can be oriented away from noxious land uses (e.g., busy roads) and planted greenery can help reduce toxic air and noise pollution.

If you're curious about your neighborhood or town, you can check the Cognability score on the researchers' publicly available website: [cognability.isr.umich.edu](https://cognability.isr.umich.edu).

## CREATING AN EFFECTIVE ONLINE TRAINING OPPORTUNITY Offering Emotion-Focused Communication Training for Caregivers Online

Miami University Scripps Gerontology Center: Alexandra Heppner, BSW; Dennis Cheatham, MFA; Katherine A. Abbott, PhD, MGS, FGSA  
The Pennsylvania State University, College of Nursing: Kimberly Van Haitzma, PhD, FGSA  
Independent Research Consultant: Allison R. Heid, PhD

### FOCUS: Can we improve memory care by equipping employees with training that targets their emotions?

Emotion-focused communication can improve the delivery of care for long-term care recipients, especially those living with dementia. The challenge is that there are few training opportunities for these skills. This research fills that gap by describing the process of translating an in-person training workshop on Emotion-Focused Communication (EFCT) for long-term care workers to an online program. This training, developed by the researchers, helps care partners better manage their own behavior and emotions, resulting in improved quality of care and quality of life for both care partners and care recipients.

The online course was developed following the ADDIE (Analysis, Design, Development, Implementation, Evaluation) Model. To evaluate the EFCT program, the researchers followed the progress of 247 long-term staff members and caregivers who completed a six-session training and provided pre- and post-test data. Participants included direct care workers, life-enrichment/activities employees, health care providers, case managers,

“Overall, findings from this study indicate that the researchers’ online EFCT program is an effective, flexible, interactive course for caregivers.”

health educators, students, administrators, ombudsmen, dietary, housekeeping, and maintenance workers, human resources employees, family care partners, and others.

### FINDINGS

Overall, findings from this study indicate that the researchers’ online EFCT program is an effective, flexible, interactive course for caregivers. Those who completed the course reported a significant increase in their level of knowledge of emotion-focused communication and confidence in applying the learned knowledge and skills in care (increased self-efficacy).

Participants also reported high levels of program acceptability.

The program was positively received by the caregiver participants. These initial findings indicate that this program is an effective, low-cost way of improving the emotion-focused care provided by caregivers to individuals, particularly those living with dementia.

### READ THE ABSTRACT

Heid, A.R., Heppner, A., Cheatham, D., Van Haitzma, K., & Abbott, K.M. (in press). Emotion-Focused Communication Training Online: Development and Evaluation of Acceptability. *Gerontology and Geriatrics Education*. DOI: 10.1080/02701960.2022.2154765. Published online ahead of print: 07 Dec 2022.

### FROM RESEARCH TO REAL LIFE



Caring for a person living with dementia requires a unique set of psychosocial skills that are not often taught to caregivers. Without basic skills in listening actively or recognizing emotions in individuals living with dementia, employees can find their work especially challenging. The Emotion-Focused Communication Professional Certificate teaches strategies that enable caregivers to better manage their own feelings and those of their care recipients. These strategies are designed to build a stronger relationship and more positive care experience for both caregiving employees and care recipients alike.

The online training is available for \$11 through the Miami University learning management system: [preferencebasedliving.com/emotion-focused-communication-training](https://preferencebasedliving.com/emotion-focused-communication-training). Participants who compete will be able to download a certificate of completion and a digital badge through Accredible.

## FACING END OF LIFE AMONG RESIDENTS IN ASSISTED LIVING Supporting Direct Care Employees in Coping with Death & Dying

Emory University: Alexis A. Bender, PhD; Ann E. Vandenberg, PhD, MPH; Molly M. Perkins, PhD, FGSA  
Georgia State University Gerontology Institute: Candace L. Kemp, PhD, FGSA; Elisabeth O. Burgess, PhD, FGSA

### FOCUS: How can we prepare assisted living employees for the emotional impact of losing residents?

“This study identifies how the lack of training about death contributes to fear and misunderstandings about how to support residents’ quality of life (and death).”

Assisted living is becoming a common place for end-of-life care, where growing numbers of residents are aging and dying in place. This study considered how resident deaths impact the employees caring for them, especially at the end of their lives. These issues have become more pressing and publicly visible as a result of COVID-19.

This five-year study took place in seven assisted living communities in the metropolitan Atlanta area, using in-depth interviews and observations with 37 direct care workers and 27 administrators to understand the experiences and process of caring for residents through the end of life. Most participants were women (86% workers, 85% administrators) and Black or African American (89% workers, 63% administrators). On average, workers were 45 years old, and administrators’ average age was 42.

### FINDINGS

The researchers found that when residents died, direct care workers and administrators engaged in a dynamic and individualized process of balancing how they saw themselves (self-identity) with their workplace identity.

This study identifies how the lack of training about death contributes to fear and misunderstandings about how to support residents’ quality of life (and death). The emotional work involved in caring for dying residents, and ambiguity around appropriate ways to grieve, places further stress on direct care workers, which may further exacerbate burnout and turnover. By acknowledging the normalcy of death and dying, the senior living industry can better prepare for its workforce to meet the needs of residents and workers.

### READ THE ABSTRACT

Bender, A. A., Kemp, C. L., Vandenberg, A. E., Burgess, E. O., & Perkins, M. M. (2022). “You gotta have your cry”: Administrator and direct care worker experiences of death in assisted living. *Journal of Aging Studies*, 63, 101072.

### FROM RESEARCH TO REAL LIFE

This research provides multiple practical recommendations for the industry. Assisted living communities should take the following steps:

1. **Openly recognize assisted living as a place where many residents spend the last days of their life and receive end-of-life care.**
2. **Offer meaningful and accessible resources for grief and bereavement for employees.** Resources should be communicated by administrators and managers; the burden of access should not be on direct care workers.
3. **Consider creating consistent practices that encourage employee self-care**, including guidelines about attending services and paid time off for counseling or bereavement.
4. **Offer ongoing training about communication on death and dying.** This is essential: there is a clear need for training and strategies on difficult end-of-life conversations with residents, families, and employees.

These supports could improve job satisfaction and ultimately improve the quality of end-of-life care for residents.



**2023 BRONZE AWARD RECIPIENTS**

## REFRAMING AGING ON TIKTOK Defying Stereotypes of Older Adults on Social Media

National University of Singapore: Reuben Ng, PhD, Nicole Indran, BSocSci

### FOCUS: Can we find new ways to offer residents with dementia a sense of achievement?

The senior living industry has the potential to shift society's perceptions of aging—and social media could be harnessed for this. Despite the growing presence of older adults on social media, there has been a lack of research dedicated to examining how they publicly engage in discourses surrounding later life. This study fills that gap, exploring ways in which older adults use TikTok to subvert or perpetuate socially constructed notions of old age.

The researchers identified accounts belonging to TikTok personalities aged 60 or better with at least 100,000 followers at the time of analysis, and collated the 50 most-viewed videos—excluding re-uploads—of each user. Of those, 48 videos included discourses on aging.

“Despite the growing presence of older adults on social media, there has been a lack of research dedicated to examining how they publicly engage in discourses surrounding later life.”

### FINDINGS

The analysis revealed three themes:

**Theme 1:** Nearly three in four videos featured older adults “Defying Age Stereotypes” (71%). Examples include users looking forward to growing older or embracing their aging bodies.

**Theme 2:** 18% featured them “Making Light of Age-Related Vulnerabilities.” Examples include older adults joking about stereotypes regarding dementia or nursing homes.

**Theme 3:** 11% of the videos involved users “Calling Out Ageism.” Videos in this theme featured older adults denouncing ageist beliefs or practices. An example would be a video of an older person sharing an experience in which he or she was disparaged on the basis of age.

### FROM RESEARCH TO REAL LIFE



As part of the endeavor to reframe aging, more senior living providers could consider creating TikTok accounts, as well as actively encourage residents to create their own videos on TikTok to document daily routines, take part in TikTok challenges, or share experiences of ageism. This has several benefits:

1. It will go a long way in dismantling longstanding beliefs that older adults are uninterested in technology.
2. The opportunity to record and edit videos may improve residents' mental acuity and cognitive functioning.
3. Interacting with other users may stave off feelings of loneliness and facilitate intergenerational solidarity.

Senior living providers can also encourage residents' children and grandchildren to help with and participate in these TikTok videos.

This offers an avenue for employees to encourage residents to play a more active role in ongoing efforts to reframe aging.

### READ THE ABSTRACT

Ng, R., & Indran, N. (2022). Not Too Old for TikTok: How Older Adults Are Reframing Aging. *The Gerontologist*, 62(8), 1207–1216. <https://doi.org/10.1093/geront/gnac055>

## LEARNING PIANO SUPPORTS OLDER ADULTS' BRAIN HEALTH Hitting All the Right Notes on Cognitive & Psychosocial Well-Being

University of South Florida: Jennifer Bugos, PhD

University of Massachusetts Lowell: Yan Wang, PhD

### FOCUS: Can we keep residents cognitively sharp by offering group piano lessons?

While we know that behavioral interventions can mitigate cognitive decline, and that music training has been effective at enhancing psychosocial outcomes in aging, little is known about the specific benefits of music training on cognitive performance. The goal of this study was to strengthen the evidence for benefits stemming from music interventions for older adults.

Researchers conducted a randomized controlled trial to evaluate the effects of piano training on cognitive performance, psychosocial well-being, and physiological stress and immune function in 155 participants aged 60 to 80. Participants were randomly assigned to one of three groups: piano training, computer-assisted cognitive training, or a no-treatment control group. Those in the first two groups took part in a 16-week program, with two 90-minute group training sessions per week.

Before and after the training, all participants completed tests of executive functions (working memory, processing speed, and verbal fluency), psychosocial measures (musical and general self-efficacy, mood), and physiological measures (cortisol and immune function).

“The goal of this study was to strengthen the evidence for benefits stemming from music interventions for older adults.”

### FINDINGS

The study indicates that music interventions such as piano training may contribute to enhanced cognitive performance in aging:

- The piano training group had a significant increase in verbal fluency skills, compared to the other groups.
- Piano training resulted in a unique advantage in category switching (the loss of which is an early symptom of mild cognitive impairment) as compared to the other groups, indicating that music training programs may mitigate or prevent cognitive deficits in verbal skills.
- The piano training group showed enhanced general and musical self-efficacy.
- The piano training and computer-assisted cognitive training groups had enhanced working memory and processing speed, as compared to the control group.

This innovative research suggests that bimanual coordination in piano training may enhance the ability to generate words and focus attention—skills essential to cognition.

### FROM RESEARCH TO REAL LIFE

Implementation of group-based music interventions is cost-effective, motivational, and beneficial for those seeking innovative programs to stay sharp or mitigate cognitive decline.

Those serving older adults could support their cognitive, mental, and social wellness by offering musical training. They would need:

- an area with pianos or keyboards for group music training.
- if serving individuals with cognitive impairment, include training for them. These researchers have previously evaluated piano training programs for adults with Parkinson's disease, mild cognitive impairment, and heart failure, as well as healthy older adults.
- a music educator and recreational therapist; these professionals have the skills and training to facilitate group music instruction that allows for skill development.

Such training naturally allows for bimanual coordination, progressive difficulty, task novelty, social elements, and practice components—all of which are ingredients of a successful cognitive training program.

### READ THE ABSTRACT

Bugos, J.A., & Wang, Y. (2022). Piano training enhances executive functions and psychosocial outcomes in aging: Results of a randomized controlled trial. *Journal of Gerontology B Psychological Sciences Social Sciences*, 77(9):1625-1636. doi: 10.1093/geronb/gbac021

## OFFERING SPIRITUAL SUPPORT AS PART OF MEMORY CARE Meeting the Unique Spiritual Needs of Those Living with Dementia

VA Boston Healthcare System, Center for Healthcare Organization and Implementation Research & Boston University School of Medicine: Jennifer A. Palmer, MS, PhD, Jennifer L. Sullivan, PhD  
Tuscaloosa Veterans Affairs Medical Center and the University of Alabama: Michelle Hilgeman, PhD  
Harvard Medical School, Brigham and Women's Hospital: Tracy Balboni, MD, MPH  
Hebrew SeniorLife: Sara Paasche-Orlow, BCC

### FOCUS: Can we add spiritual support to our care of those living with dementia?

Spiritual care for persons with serious illness seeks to prevent spiritual distress. Persons living with dementia can benefit from such care; however, there is limited guidance on how to customize spiritual care in the context of dementia. This study explored the main spiritual needs in dementia to guide future approaches to spiritual care.

The researchers held one-on-one conversational interviews with care providers who work directly with persons living with dementia within a variety of community-based (e.g., adult day center, outpatient memory care clinic, independent housing) and long-term care (e.g., assisted living facility, continuing care retirement community) settings in the Greater Boston area. A total of 24 providers participated, including 10 chaplains from Jewish or Christian faith traditions, six nursing staff members, six social workers, and two activities professionals. Interview questions asked about the type of spiritual needs that persons living with dementia have and about providers' roles in addressing such needs.

“  
Spiritual care  
for persons with  
serious illness  
seeks to prevent  
spiritual distress.  
”

### FINDINGS

The researchers found two main themes across participants' answers:

**Theme 1** related to how spiritual experience in dementia differs from that in other medical conditions. This theme had four subthemes:

- (1a) the fear that can exist in dementia
- (1b) the profound loss of self in dementia
- (1c) the progressive and incurable nature of dementia
- (1d) an impacted ability to access faith in dementia

**Theme 2**, the need for spiritual intervention at the mild stage of dementia, had two subthemes:

- (2a) awareness in mild dementia and its influence on spiritual distress
- (2b) the window of opportunity for providers to help

### READ THE ABSTRACT

Palmer, J. A., Hilgeman, M., Balboni, T., Paasche-Orlow, S., & Sullivan, J. L. (2022). The Spiritual Experience of Dementia From the Health Care Provider Perspective: Implications for Intervention. *The Gerontologist*, 62(4), 556–567. <https://doi.org/10.1093/geront/gnab134>

### FROM RESEARCH TO REAL LIFE

The researchers offer suggestions to the senior living industry on how to tailor spiritual support for residents living with dementia:

**Training.** Care providers (including chaplains, as available) and family and friends should be trained about the potential spiritual concerns of fear and loss of self. Stakeholders should be trained on how to assist with and remind persons living with dementia of religious service attendance, prayer, and other rituals, and by making rituals dementia-friendly.

**Include.** Advocate for and institute the inclusion of persons living with dementia as eligible recipients for palliative care (including spiritual care services).

**Infrastructure.** Encourage stakeholder collaboration with practical mechanisms such as referral processes between care providers and chaplains or community clergy.

**Intervene early.** It is vital to address these suggestions for those in the early stages of dementia, when spiritual distress may be particularly poignant, and the individual may still be able to actively participate in processing their distress.

## SHINING A LIGHT ON RACIAL & GENDER DISCRIMINATION Revealing Extensive Unreported Discrimination of Direct Care Workers by Residents

UC Berkeley School of Social Welfare / Center for the Advanced Study of Aging Services: Angela Perone, PhD

### FOCUS: How can we address unreported discrimination against direct care workers by residents?

“By understanding who, when, where, why, and how employees name experiences of discrimination; attribute blame; and claim solutions, nursing homes can better support employees when they experience discrimination and adopt policies and practices that prevent it.”

Nursing home employees, particularly direct care workers, are disproportionately women of color. Although research has well documented the ubiquity of race and sex harassment that direct care workers experience, failure to address discrimination leaves marginalized senior living care workers in precarious working conditions that can have devastating ripple effects for quality of care.

This study compares three levels of employees in two nursing homes to examine discrimination by residents. Researchers used 80 in-depth, semi-structured ethnographic

interviews of frontline employees, mid-managers, and upper managers. Employees (e.g., CNAs, floor nurses), mid-managers (e.g., nursing managers, social workers), and upper managers (e.g., directors of nursing, administrators) differed by resident interaction and management responsibilities.

### FINDINGS

The researchers use the “naming, claiming, and blaming” terminology from legal consciousness theory. By understanding who, when, where, why, and how employees name experiences of discrimination; attribute blame; and claim solutions, nursing homes can better support employees when they experience discrimination and adopt policies and practices that prevent it.

The findings revealed extensive unreported discrimination, stark differences in how employee levels understood and responded to discrimination, and why underreporting persists. By avoiding naming experiences as discrimination and attributing blame to residents, few workers reached the “claiming process” that would result in a report of discrimination. Managers’ framings also shaped how frontline employees and managers named, blamed, and claimed experiences of discrimination and help explain why employees may be hesitant to report discrimination by residents.

The result: discrimination persisted and required significant emotional labor to cope, adding to the already demanding positions of frontline employees. This left direct care workers exhausted, and contributed to intolerable conditions for some.

### READ THE ABSTRACT

Perone, A. K. (2022). Constructing discrimination rights: Comparisons among staff in long-term care health facilities. *The Gerontologist*, <https://www.doi.org/10.1093/geront/gnac152>.

### FROM RESEARCH TO REAL LIFE

These findings suggest several recommendations:

1. **Awareness is a critical first step.** All levels of nursing home employees, researchers, and policymakers must acknowledge this significant problem.
2. **Employee training should include specific strategies for responding to discrimination.** Targeted employee and resident training can help employees feel validated when they experience discrimination from residents and identify concrete tools to address it.
3. **Training programs should explicitly include curriculum** that addresses the intersectional nature of discrimination that many direct care workers (who are often women of color) experience.
4. **Education should incorporate tools** for understanding how structural contexts shape interpersonal interactions (e.g., historical experiences, limited exposure to a diverse workforce, segregated housing experiences).
5. **Managers can adopt written policies** addressing discrimination, including a Caregiver Preference Guideline that makes clear to residents that they legally cannot request caregivers based on race and that provides tools for employees encountering these requests.

## IMMERSING RESIDENTS IN (VIRTUAL) NATURE Boosting Mood with a Virtual Gardening Experience

Cornell University: Saleh Kalantari, PhD, Tong Bill Xu, MS, Armin Mostafavi, MS, Angella Lee, Ruth Barankevich, MS  
Florida State University, Tallahassee: Walter R Boot, PhD  
Weill Cornell Medicine: Sara J Czaja, PhD

### FOCUS: Can we employ VR to bring green spaces to residents with cognitive impairment?

Millions of older adults in the US suffer from cognitive impairment (CI), which contributes to loneliness and depression. Nature exposure has been associated with improved cognitive functioning and mental health benefits, including reductions in anxiety, depression, and negative moods. This study suggests virtual reality (VR) as a solution for people who lack access to real-world green spaces.

The researchers designed a virtual garden and offered participants a video experience where they could view 360-degree footage of natural areas; interactive opportunities for engaging in various activities; and a gardening game where participants could create their own garden layouts and nurture plants. Fifty older adults were recruited to use an Oculus Quest 2 virtual reality headset with Oculus Touch controllers.

The researchers measured changes in participants' moods and attitudes toward VR before and after the sessions, and looked for differences in responses among participants with cognitive impairments versus without, and participants with physical disabilities versus without.

### FINDINGS

The findings indicated significant improvements in “good” mood and “calm” mood dimensions after exposure to the VR, as well as improvements in attitudes toward the technology. These positive outcomes were significantly greater for participants with physical disabilities compared to those without disabilities. No differences were found in the responses of participants with CI versus those without. Exit interviews provided a variety of helpful suggestions about ways to improve the VR equipment design and content to meet the needs of an older adult population.

“The findings indicated significant improvements in “good” mood and “calm” mood dimensions after exposure to the VR, as well as improvements in attitudes toward the technology.”

### READ THE ABSTRACT

Kalantari, S., Bill Xu, T., Mostafavi, A., Lee, A., Barankevich, R., Boot, W. R., & Czaja, S. J. (2022). Using a nature-based virtual reality environment for improving mood states and cognitive engagement in older adults: A mixed-method feasibility study. *Innovation in aging*, 6(3).

## FROM RESEARCH TO REAL LIFE

The study highlights that reminiscence-based VR activities can be effective in improving mood and engagement, suggesting that familiar elements, such as family members or locations, combined with new and stimulating experiences, may be important to consider for long-term therapeutic use.

### WORDS OF WARNING

Caution is recommended when introducing such technology to individuals with advanced cognitive decline, as novel experiences can incite fear and anxiety. Suggestions include:

- Adjustments to the experience, such as including human guides, may be advisable for those with moderate to severe impairment.
- Technological concerns, such as visual perspectives that induce feelings of precarity and fear, need to be taken into account when creating immersive videos for restorative VR use.

Lastly, to increase the potential benefits of VR, senior living communities could integrate the regular use of VR technology into broader everyday life and encourage experiences to be shared with friends and family.

## SUBMIT FOR THE 2024 INNOVATIVE RESEARCH ON AGING AWARD

Nominations will open in February,  
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