

**How can technology and intergenerational youth programs combat social isolation and loneliness in
older individuals?**

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October 2025

Abstract:

Social isolation and loneliness are growing public health concerns among older adults, linked to increased risks of depression, cognitive decline, cardiovascular disease, and early mortality. This narrative review summarizes recent evidence on the ability of digital communication tools, social media, and virtual group activities to foster social connectedness and mental well-being, while also noting persistent barriers such as low digital literacy, lack of confidence, and limited access. Similarly, evidence on intergenerational programs shows their potential to build meaningful relationships, enhance self-esteem, and provide a sense of purpose for both older and younger participants, though accessibility and program design remain challenges. Based on this literature, the paper will propose a theoretical model that combines these two practices into one and incorporates original evidence and testimonials from older adults who benefited from this strategy. Integrating these approaches may amplify benefits by pairing technical skills training with authentic social engagement. These findings may inform caregivers and policymakers on how to support aging populations and inspire children and teenagers to start initiatives that follow my model.

Introduction

In a world that is more connected than ever, millions are left alone, unheard, and offline. One in four institutionalized older adults report feeling socially isolated, and nearly 43 percent say they feel lonely (Wu, 2020). Loneliness and social isolation are distinct but connected growing public health issues facing older adults (those over 55). According to Newman-Norlund et al. (2022) and Barnes et al. (2021), these conditions are linked to a higher risk of cardiovascular disease, depression, cognitive decline, and even early death. Beyond the negative effects on personal health, loneliness among older adults equates to nearly \$7 billion in Medicare spending each year in the United States alone (Kamerick, 2020). Although they are frequently conflated, social isolation and loneliness are distinct: the former may be characterized as an objective lack of social contact, while the latter describes a subjective feeling of disconnection (Newall & Menec, 2017; Cacioppo, J. T., & Hawkley, L. C., 2003). Both are individually detrimental and

require multi-layered interventions. Greater application of digital technologies is seen as an efficient way to reconnect older persons with friends, family, and communities.

Video calls, email, messaging apps, and social media platforms have been shown to reduce feelings of loneliness, increase social engagement, and improve the mental health of older adults (Ibarra et al., 2020; Chen et al., 2023; Chen, Y. R., & Schulz, P. J., 2016). However, a lack of technical support and low self-confidence are among the many challenges older people face when interacting digitally (Chen, Y. R., & Schulz, P. J., 2016; Seifert et al., 2020). Research shows that daily internet use doesn't always reduce loneliness unless the activity is a meaningful and purposeful interaction (Stockwell et al., 2021). This implies that even though technology is helpful, it might not be enough to address social isolation and loneliness in older adults. Evidence suggests that IGPs hold value as a complementary intervention in addressing social isolation: it provokes social, cognitive, and emotional benefits that extend beyond traditional means of support. Technology-based interventions and IGPs independently show promise, but their individual weaknesses and strengths suggest that when integrated, they can confront the multifaceted nature of social isolation in older adults.

Intergenerational programs (IGPs), which are organized activities that bring together older adults and children (3–18) for mutual connection and learning, are another promising intervention to improve social connectedness among older adults. Through a range of activities like storytelling, arts and crafts, and educational opportunities, these programs give older adults the chance to build "familial-like" relationships that boost their self-esteem (Bocioga, 2020; Xu et al., 2025). Research suggests that participation in IGPs can improve older adults' cognitive and emotional well-being, decrease feelings of loneliness, and increase their sense of purpose (Xu et al., 2025; Santini et al., 2018; Bocioaga, 2020; Massi et al., 2016). Additionally, IGPs have been linked to positive effects on younger participants, such as increased confidence and sense of responsibility, improved perspectives on aging, and increased empathy for others (Santini et al., 2018; Park, 2015; Xu et al., 2025; Bocioaga, 2020; Massi et al., 2016, 2016). Evidence suggests that IGPs hold value as a complementary intervention in addressing social

isolation, provoking social, cognitive, and emotional benefits that extend beyond traditional means of support.

This review has two primary objectives: 1) summarize the individual effects of technology and intergenerational programs for reducing social isolation and loneliness in older adults and 2) explore how the integration of these two interventions may provide a more effective approach for reducing these symptoms. Programs where teenagers teach older individuals technology skills, such as existing programs *Teens Who Tech* or *Teeniors*, demonstrate that this integrated approach can foster social connection and increase digital confidence (Kamerick, 2020). These tech-native teenagers can empower older adults to participate confidently in the digital world, while also building valuable human connection across generations; both of which outcomes have shown the potential to combat social isolation and loneliness in older adults (Chen, Y. R., & Schulz, P. J., 2016; Chen & Wang, 2025; Stockwell et al., 2021; Ibarra et al., 2020; Xu et al., 2025; Santini et al., 2018; Bocioaga, 2020; Kamerick, 2020).

Methods

This paper uses two different approaches to address its dual aims.

- 1) To summarize the individual effects of technology and intergenerational programs on social isolation and loneliness in older adults, I conducted a focused narrative review using Google Scholar. Search terms included combinations of “older adults,” “loneliness,” “social isolation,” “technology,” “digital literacy,” and “intergenerational programs.” I included peer-reviewed studies published between 2015 and 2025 that focused on both community-dwelling and institutionalized adults aged 50+, each of which assessed loneliness and/or social isolation. Some sources gave specific insight into these mental health issues, while others discussed these issues when influenced by technology or intergenerational programs. I excluded sources published before 2010, sources that were not peer reviewed, and sources that focused on younger adults or children rather than older adults. Studies were grouped

thematically by intervention type and analyzed for strengths and limitations. After following this research process, 26 articles were fully analyzed to be included in the paper.

- 2) To explore the potential of combining these interventions, I analyzed two case examples: a qualitative NPR feature on the Teeniors program and original data and testimonials from Teens Who Tech, an intergenerational initiative I co-founded. These examples illustrate how integrating technology training with youth engagement may uniquely address barriers to digital inclusion and social connection.

Results

The Role of Technology in Reducing Social Isolation and Loneliness in Older Adults

I. Technologies for combatting social isolation and loneliness

Across the studies analyzed, technology emerged as a promising yet nuanced tool for combating social isolation and loneliness in community-dwelling and institutionalized older adults.

Common technology interventions to reduce social isolation and loneliness and enhance emotional and mental well-being in older adults include video calls, email and instant messaging apps, and social media platforms. Studies in this review consistently reported that regular use of communication technologies, particularly video calls, can significantly reduce loneliness and social isolation in older adults. Ibarra et al. (2020) found that video conferencing with family and friends improved perceived social connectedness among older adults living alone, with participants reporting a stronger sense of being “seen” and “heard” by loved ones. Another study highlighted that consistent email and instant messaging use was associated with reduced depressive symptoms and increased life satisfaction (Chen, Y. R., & Schulz, P. J., 2016). Chen et al. (2023) extended this finding, noting that use of social networking platforms helped seniors feel more connected to family members and friends, especially when technology use facilitated intergenerational interaction.

Chen and Wang (2025) found that participation in online group-based activities (i.e., virtual exercise or hobby/interest groups) was correlated with increased purpose and daily structure in older

adults' lives. These activities not only fostered social bonds but also helped older adults reclaim a sense of agency, identity, and inclusion in digital society.

II. Challenges in Digital Engagement

Despite the benefits in communication technologies, multiple barriers hinder older adults' ability to use technology effectively. A recurring theme across the literature was a lack of digital literacy and confidence. Chen, Y. R., & Schulz, P. J. (2016) emphasized that older adults often hesitate to use technology due to fear of making errors or concerns about privacy. Seifert et al. (2020) similarly reported that older adults without reliable technical support or prior exposure to digital platforms were less likely to sustain technology use, even when initial training was provided.

IV. Training and Support Enhance Outcomes

Several studies noted that providing structured training and ongoing support can significantly improve outcomes. Ibarra et al. (2020) found that older adults who received hands-on instruction and technical assistance were more likely to continue using digital tools and to report improvements in mood and social engagement. Moreover, training programs that emphasized personalized, patient instruction helped reduce technology-related anxiety, which further encouraged consistent use.

VI. Limitations and Concerns

Although digital tools offer potential for social reconnection, older adults face challenges that limit impacts on loneliness and/or social isolation. Stockwell et al. (2021) found that general internet use did not always result in reduced loneliness unless it involved meaningful social interaction and emotionally resonant exchanges. In fact, passive scrolling or solitary browsing often failed to yield emotional benefits, and in some cases, encouraged social isolation and reinforced feelings of disconnection. This study suggests that technology as an intervention must be paired with consistent education and guidance.

While digital engagement is a promising solution for lonely and socially isolated older adults, many studies acknowledged limitations in scalability and equity. For instance, Stockwell et al. (2021) and Chen et al. (2023) pointed to the digital divide, and emphasized the difficulty in increasing digital literacy for low-income or rural older adults who may lack access to devices, broadband, or support networks.

These disparities suggest that while technology can be part of the solution to social isolation and loneliness in older adults, it is not a universally accessible remedy without additional infrastructural and educational investments.

The Role of Intergenerational Programs in Reducing Social Isolation and Loneliness in Older Adults

Intergenerational programs vary widely in structure and goals, but they involve shared activities between older adults and children or adolescents. Xu et al. (2025) identified common formats such as weekly school visits, storytelling sessions, and art collaborations, aimed at shared creation and communication. Bocioaga (2020) details programs where older adults mentor younger individuals, reinforcing their sense of purpose and competence with technology. Other programs focus on reciprocal learning, such as language exchange or collaborative music-making. Regardless of structure, the studies emphasized that sustained and recurring contact, rather than one-time interactions, was key to generating lasting social benefits for both older and younger parties.

Current Recommendations for IGPs to Reduce Isolation and Loneliness

Research consistently found that participation in IGPs was associated with reduced loneliness and increased psychological well-being in older adults. Santini et al. (2018) demonstrated that regular intergenerational contact reduced depressive symptoms and improved older adults' sense of belonging. Xu et al. (2025) further emphasizes that such programs help participants build "familial-like" relationships, which are especially meaningful for those who lack strong biological family ties. Massi et al. (2016) discovered that structured activities like collaborative storytelling improved cognitive engagement and self-expression in older adults. These programs also encourage routine, which plays a protective role in aging and mental health. What's more, programs that emphasize mutual learning were especially effective at fostering meaningful connection. According to Bocioaga (2020), these interactions

helped older adults feel “valued and needed,” which was linked to greater life satisfaction and reduced feelings of uselessness or loneliness. Park (2015) and Santini et al. (2018) found that youth participants developed more empathetic views of aging and became more patient, confident, and socially aware after participating regularly in IGPs.

Barriers to Engaging with IGPs

Despite their potential to provide meaningful activities and intergenerational relationships, IGPs face several barriers that limit older adults’ participation. Xu et al. (2025) noted that transportation challenges, mobility issues, and other health limitations can prevent older adults from accessing program sites regularly. The study also highlighted social anxiety or unfamiliarity with children can also be deterrents. Moreover, Bocioaga (2020) found that some older adults feared being perceived as burdensome or out-of-touch, which sometimes discouraged participation. Additionally, many institutional settings such as senior centers lack the infrastructure and partnerships needed to implement consistent IGPs.

Strategies to Overcome Barriers

Many studies emphasized the importance of program design to ensure accessibility and comfort for older adults. Xu et al. (2025) recommended that activities be tailored to accommodate varying physical and cognitive abilities. Santini et al. (2018) and Bocioaga (2020) identify flexible scheduling, transportation support, and the involvement of trained facilitators as ways to mitigate the barriers of IGPs. This suggests that consistency in structure, sensitivity to participants’ needs, and logistical support are critical to ensuring older adults can engage meaningfully and sustainably in IGPs. What’s more, studies in this review suggest that IGPs are more sustainable and effective when kids visit older adults (rather than adults visiting kids), because it reduces logistical barriers for older adults and allows them to remain in familiar locations (Xu et al., 2025, Santini et al., 2018; Bocioaga, 2020).

A Proposed Model: Combining Technology with IGPs to Reduce Isolation and Loneliness

While technology and intergenerational programs individually offer promising avenues for addressing social isolation and loneliness in older adults, they may be more powerful when combined as their strengths complement one another.

Research indicates that when learning is paired with patient and meaningful interaction, older adults are more likely to benefit mentally from digital technology (Stockwell et al., 2021). Similarly, when interactions are reciprocal and based on a common goal, IGPs promote empathy and emotional connection (Xu et al., 2025; Santini et al., 2018). This suggests that teenagers, who are digital natives and are capable of forming authentic intergenerational bonds, are uniquely positioned to deliver both the technical support and social engagement needed for effective intervention.

Programs such as Teeniors, profiled in a NPR segment by Kamerick (2020), demonstrate the potential of this model. Teeniors is a New Mexico-based organization that matches tech-savvy teenagers with senior citizens who require assistance using computers, phones, and other gadgets. Initially designed as a tech-training initiative, the program soon demonstrated emotional benefits as well. One older adult called the social component "the highlight of [her] week," and other participants said they loved it just as much as the technical assistance. Teens also expressed feeling more valued and connected, indicating mutual benefit between generations. According to the NPR story, regular interaction helped older adults develop self-efficacy and trust, and many of them returned frequently for company as well as tech support.

A similar model is implemented at *Teens Who Tech*, a program I co-founded in my sophomore year of high school. *Teens Who Tech* offers free tech tutoring and lessons to older adults in nursery homes across the California bay area. Although our initial focus was on increasing older adults' digital literacy in our area, we soon discovered that the most impactful moments happened when we exchanged stories and

advice, rather than during the lessons. In this past year (the second year of *Teens Who Tech*), we have come to recognize the impact that we have on residents' skills and confidence with technology, and on their social and emotional well-being. We first heard of the change we were inspiring through the directors at the nursing homes. Paula Arce, Director of Resident Engagement at Brookdale Senior Living, quotes: "[*Teens Who Tech*] has helped our residents with everything from dealing with fraud to fixing printers to organizing files. They take the time to not only solve problems, but really connect and listen to our residents as they talk about their own grandchildren, their time in high school, or just talk about their day. Our residents adore the kids and most of them are repeat users, saving up questions for their next session". While testimonials to our broader impact are significant, the connections we have created with residents show our impact most clearly. After our lesson one day, a resident once brought out old photos of her travels to share with a student, and because the student had also been to that place, they spent the rest of the afternoon comparing their experiences. This is one of the many emotional exchanges that *Teens Who Tech* students share with older adults. According to Ivy Park nursing home coordinator Eliza Albert, older adults comment that the relationships formed felt more like friendships than formal tutoring.

Early results and participant reflections show the potential of integrated programs such as these, but more research is required to ascertain their long-term effectiveness.

Discussion

This review considers the promise of both technology-based interventions and intergenerational programs in reducing social isolation and loneliness among older adults. Individually, each strategy offers unique strengths: digital tools provide older adults with communication, resources, and independence, while IGPs foster purposeful emotional connections across generations. However, evidence also shows that each approach has limitations: older adults lack the confidence to use technology effectively, while IGPs can be resource-intensive and inconsistent. Taken together, these findings suggest that a combined model, where youth guide older adults in digital literacy, offers a more comprehensive solution.

This paper is limited by its narrative review approach, which does not employ the statistical synthesis or methodological rigor of a systematic review. As such, findings should be interpreted as exploratory rather than definitive. In addition, while the analysis draws on peer-reviewed literature and an external case study (NPR feature on *Teeniors*), it also incorporates original evidence from *Teens Who Tech*, a program I co-founded. This firsthand perspective provides valuable, context-rich insight but also introduces potential bias. These limitations underscore the need for further research to validate and expand upon the proposed model.

For younger generations, programs like *Teeniors* and *Teens Who Tech* demonstrate that small contributions of time and patience can have profound mutual impacts. Because of their proficiency with technology and capacity to establish sincere, familial-like connections with older adults, teenagers and young adults are in a unique position to succeed as technology mentors. Older adults, on the other hand, provide youth with wisdom and perspectives. *Teeniors* and *Teens Who Tech* report that both generations gained an increased sense of being valued, and other studies back up the efficacy of goal-oriented intergenerational programs (Xu et al., 2025; Bocioaga, 2020). With further research, the normalization of this model as a kind of service and education could lead to big impacts on older adults' mental and social well-being, in addition to being a productive and purposeful activity for youth.

For researchers and policymakers, this paper highlights the need for more rigorous, long-term evaluations of these interventions; together, and perhaps individually. While qualitative reports and testimonials suggest significant benefits, systematic studies are necessary to measure outcomes such as reductions in depressive symptoms, improvements in digital confidence, and sustained decreases in loneliness. Future research should also examine scalability, cost-effectiveness, and equity to see whether such programs can be accessible to rural, low-income, and linguistically diverse populations. Building this evidence base will help secure funding, policy support, and give youth and older adults opportunities to connect and foster mutual growth.

For caregivers and institutions, the findings underscore that addressing loneliness requires more than providing devices or facilitating one-off social events. Successful technology and education

implementation will mean designing programs that are routine, accessible, and centered on meaningful interaction. Caregivers can advocate for partnerships with schools, youth groups, and community organizations to integrate digital literacy support with social engagement. Caregivers can ensure older adults receive both the skills and the companionship needed to thrive in an increasingly digital society.

Conclusion

This paper set out to answer the question: *How can technology and intergenerational youth programs combat social isolation and loneliness in older adults?* Evidence shows that while digital tools can reconnect older adults to loved ones and expand access to community, their impact is limited without confidence, training, and meaningful interaction. Intergenerational programs, on the other hand, provide companionship, yet often lack a purpose (a mutual goal), and consistency. These approaches are stronger together than either are alone.

In a world that is more connected than ever, no one should be left behind.

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