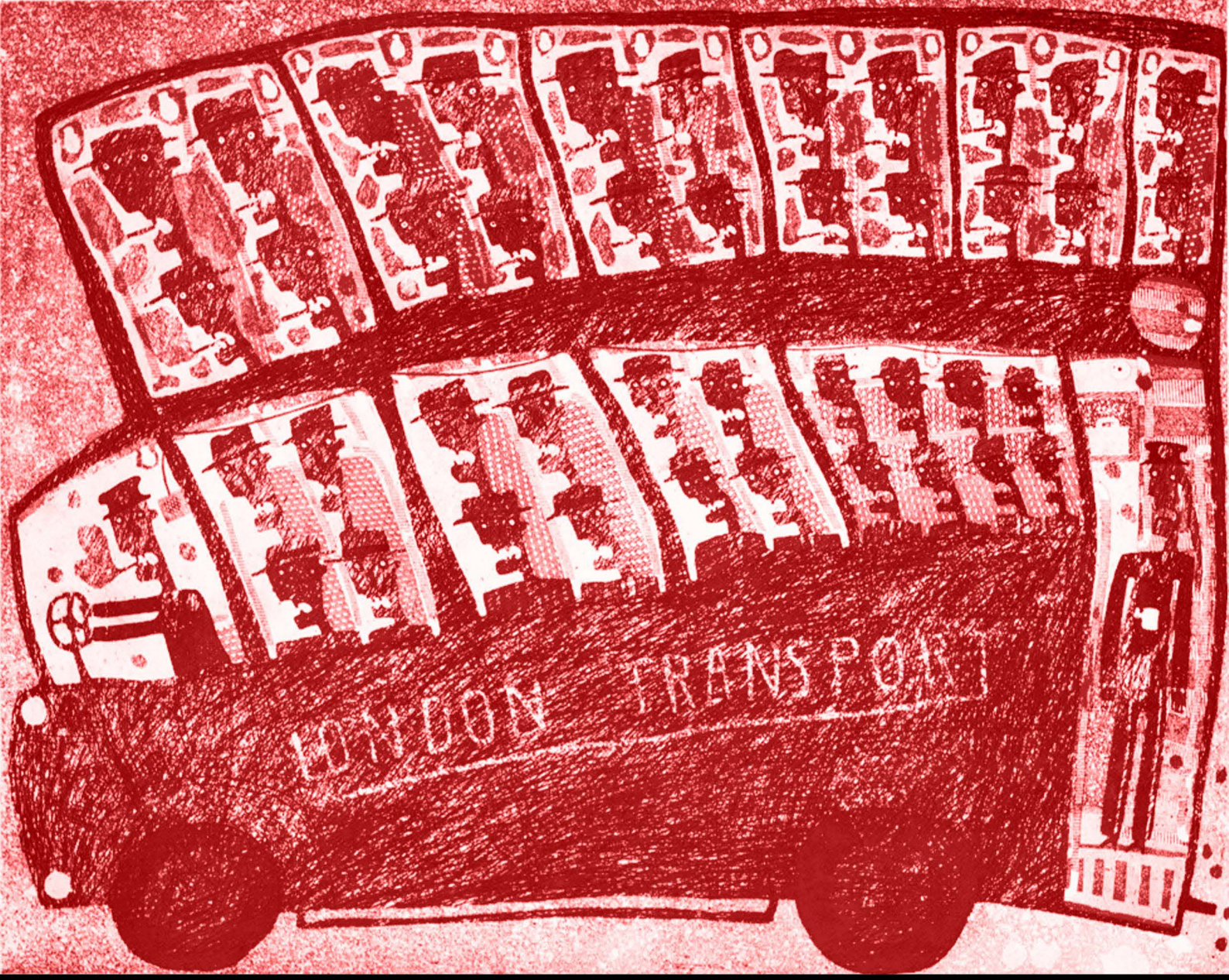

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Elderly Care in Crisis? Evaluating the Role of Policy in Addressing Demographic Challenges in Thailand and the Philippines

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Abstract

This paper evaluates the role of policy in addressing demographic challenges impacting elderly care in Thailand and the Philippines. Both nations are experiencing demographic transitions, with Thailand seeing a rapidly aging population and the Philippines poised to experience similar shifts in the coming decades. Using a comparative and literature review approach, the research identifies the key demographic pressures, explores existing policies, and highlights gaps in care provision. Thailand has developed robust national programs, including Universal Health Coverage (UHC) and community-based elderly health volunteer programs, inspired by international models such as Japan's community health framework. Meanwhile, the Philippines remains heavily reliant on family-based care, with minimal government intervention and fragmented social support structures. International collaborations and cultural adaptations are limited, highlighting the need for cross-sectoral cooperation and innovative approaches. The study underscores the influence of cultural values, such as filial piety in Thailand and the Filipino concept of *bayanihan*, in shaping caregiving practices. It also emphasizes the need to align policy with these cultural dimensions while addressing modern challenges, such as urbanization and economic constraints. The results call for enhanced policy integration, public-private partnerships, and sustainable funding mechanisms tailored to the socio-economic and cultural contexts of both countries. By examining these differences and their implications, this study provides actionable insights into how policy can address the growing demands of elderly care in Thailand and the Philippines, ensuring equitable and sustainable outcomes.

Keywords: aging population, cultural values in caregiving, demographic challenges, elderly care policies, Thailand, Philippines

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Introduction

Population aging is a global phenomenon, with nearly every country in the world experiencing growth in the proportion of older people. By 2050, 1 in 6 people globally will be over the age of 65, compared to 1 in 11 in 2019 (UN ESCAP, 2022). In developed countries such as Japan and Germany, aging has already stressed long-term care (LTC) systems, resulting in caregiver shortages, high financial burdens, and social isolation among older persons (OECD/EU, 2013; WHO & AHPSR, 2017). In response, these countries have developed formal LTC insurance systems and invested heavily in eldercare infrastructure (Colombo & Mercier, 2012; Ikegami & Campbell, 1999). Developing nations face a more complex challenge: they are aging before they grow rich. Countries like China, Vietnam, and India are seeing rapid increases in elderly populations, but lack the institutional frameworks and fiscal capacity to deliver adequate care (Feng et al., 2012; Giang et al., 2023). Informal caregiving remains dominant, but is increasingly undermined by urbanization, outmigration, and economic strain.

The demographic landscape in Southeast Asia is undergoing a significant shift, with Thailand and the Philippines facing distinct but related challenges in elderly care. Thailand is one of the fastest-aging societies in Southeast Asia, projected to become a "super-aged" society by 2030, with over 25% of its population aged 60 and above (UN ESCAP, 2022). Though the country has made strides in elderly healthcare, including Universal Health Coverage (UHC) and community health volunteer programs, it struggles with workforce shortages, low pension adequacy, and weak LTC financing (ILO, 2014; WHO & AHPSR, 2017). The Philippines, though demographically younger, is on a similar path. With declining fertility rates and increasing life expectancy, it is poised to face a demographic shift without sufficient formal care infrastructure (Cruz, 2025). Care for the elderly in the Philippines remains largely family-based, and government support is fragmented and underfunded (Abalos, 2020; Moncatar et al., 2024).

Despite these pressing concerns, certain aspects of elderly care remain understudied. Research on the impact of globalization and cross-border elderly care models, particularly involving migrant workers providing care services, is limited (Yeoh & Huang, 2010). Additionally, while the role of cultural values such as filial piety (Sringernyuang et al., 2020) and bayanihan (Hernandez et al., 2024) is acknowledged in shaping caregiving practices, little attention has been given to how these traditional norms evolve in response to modern economic realities. While comparative studies on elderly care exist, few focus on Thailand and the Philippines together, two culturally similar yet structurally different systems. This gap in literature underscores the need for a deeper exploration of how policy can align with cultural expectations while addressing contemporary elderly care challenges. The aim of this paper is to evaluate and compare the elderly care crises and policy responses in both countries. It also seeks to situate both within the broader global context to determine what lessons can be adapted or localized, and where policy innovation is most needed.

Methodology

This study employs a comparative approach, utilizing literature reviews and policy analysis to assess the current state of elderly care in Thailand and the Philippines. Sources include government reports, peer-reviewed journal articles, international policy assessments, and case studies on aging and healthcare systems. The research focuses on demographic data, existing care models, and the influence of cultural values in shaping policy responses.

Elderly Care Systems and Challenges

Thailand is projected to become a super-aged society by 2030, with over 25% of its population aged 60 and above (UN ESCAP, 2022). The country has introduced UHC and several community programs but faces serious shortages in geriatric professionals (HelpAge Int'l, 2013). Over 33% of older people rely solely on low pensions (ILO, 2014; WHO & AHPSR, 2017), and isolation is rising, with 23% living alone (UN ESCAP, 2022). The Philippines, with a still-young demographic, is aging rapidly due to lower fertility and longer life expectancy (PSA, 2023). Elder care remains over 90% informal (Abalos, 2020), and less than 20% of seniors receive any pension support (DSWD, 2023). Meanwhile, healthcare migration severely limits domestic care capacity (Yeoh et al., 2023). Table 1 summarizes key indicators highlighting the scale and nature of the elderly care challenge in Thailand and the Philippines, including demographic projections, workforce shortages, pension reliance, and caregiving structures.

Table 1

Elderly Care Challenges in Thailand and the Philippines

Indicator	*Thailand*	*Philippines*
% of population aged 60+ by 2030	25% (UNESCAP, 2022)	Aging trend accelerating (PSA, 2023)
Geriatricians per 100,000 elderly	~1 (WHO, 2021)	Care workforce gap due to migration (Yeoh, 2023)
Elderly relying solely on pensions	> 33% on minimal support (ILO, 2023)	< 20% covered by social pensions (IFA, 2022)
Informal/family caregiving reliance	Declining but still dominant	92% of elderly care (ADB, 2022)
Elderly living alone	23% (UNESCAP, 2022)	Rising in urban areas (IFA, 2022)

Comparison of Policies

Thailand has implemented UHC and launched pilot LTC insurance programs (ILO, 2014; WHO & AHPSR, 2017), supported by community volunteer systems (Cohen & and Cohen, 2024). In contrast, the Philippines has partial health coverage and no structured LTC (DSWD, 2023). Social pensions are limited and poorly administered (DSWD, 2023). Thailand's policy coherence is stronger, whereas the Philippines exhibits fragmented and uncoordinated care strategies (Abalos, 2020; Olshansky & Carnes, 2010). Table 2 provides a comparative overview of the elderly care policies in Thailand and the Philippines, outlining key differences in healthcare coverage, long-term care infrastructure, policy coordination, and cultural influences shaping each country's response (ADB, 2020; Felipe-Dimog et al., 2024; Jiang et al., 2024; Moncatar et al., 2024; UN ESCAP, 2022; Yeung & Thang, 2018).

Table 2
Elderly Care Policies in Thailand and the Philippines

Aspect	*Thailand*	*Philippines*
Healthcare Coverage	Universal Health Coverage (UHC) provides nationwide elderly care	Limited public healthcare support for elderly-specific services
Elderly Care Model	Government-driven programs (community health, elderly volunteer programs)	Predominantly family-based caregiving
Long-Term Care Infrastructure	Pilots for long-term care insurance and geriatric services	Fragmented programs, minimal institutional care support
Policy Coordination	Strong national strategies, integrated with global best practices	Lack of cohesive strategy, reliant on ad-hoc assistance programs
Cultural Influence	Filial piety remains a strong influence but shifting due to urbanization	Bayanihan (community support) is a key value but strained by migration
Challenges	Funding sustainability, shortage of geriatric professionals	Reliance on informal caregivers, absence of a structured elderly care framework
Future Policy Needs	Enhanced funding mechanisms, expanded workforce training	National policy framework, integration of formal elderly care systems

Discussion

Aging is a global phenomenon, but its impacts are unevenly distributed due to differing economic capacities, demographic timelines, and institutional readiness. Japan and Germany, while leading in elderly care systems, face similar challenges such as rising costs, caregiver shortages, and cultural mismatches (Colombo & Mercier, 2012; OECD/EU, 2013)(Campbell et al., 2010). Conversely, developing and middle-income countries like China, India are only beginning to grapple with the systemic demands of aging (Feng et al., 2012; Goel & Ramavat, 2018).

Thailand is currently facing an urgent elderly care crisis driven by rapid demographic shifts and limited infrastructure, while the Philippines, though demographically younger, is at serious risk of falling behind unless it proactively builds formal systems. Both countries, unlike their Western counterparts, embed strong cultural caregiving norms such as filial piety in Thailand (Sringernyuang et al., 2020) and bayanihan in the Philippines (Hernandez et al., 2024) that continue to shape eldercare expectations. However, these traditions are increasingly strained by urban migration, economic pressures, and changing family structures. Effective policy must bridge traditional values and formalized systems. In terms of system formalization, developed countries like Japan and Germany offer models for institutional long-term care, national insurance systems, and caregiver training. Thailand could consider adapting Japan's Community-Based Integrated Care System (CBICS), which

emphasizes coordinated health and social services within local communities to support aging populations (Machida & Miyashita, 2021). This model has been effective in Japan and has influenced similar initiatives in Thailand aimed at enhancing elderly care through community involvement. Similarly, the Philippines might benefit from examining Germany's Long-Term Care Insurance (LTCI) system, established in 1995, which provides mandatory public or private long-term care insurance for all citizens (Geraedts et al., 2000). This system ensures comprehensive coverage and could offer valuable insights for the Philippines in developing a sustainable and inclusive approach to elderly care. The Philippines may also apply structured LTC experiments like those in other Asian countries (Feng et al., 2012; Giang et al., 2023). Workforce shortages remain a pressing issue across the region, but in the Philippines, the outmigration of nurses and domestic helpers creates a dual burden of shrinking capacity amid growing elderly needs. Financing mechanisms also diverge significantly; while developed nations rely on taxation and insurance, both countries have yet to fully leverage public-private partnerships or community-based funding models. In this regard, ASEAN countries have an opportunity to collaborate by developing regional caregiver training standards, sharing policy innovations, and establishing mutual recognition frameworks. Such regional cooperation could play a critical role in alleviating cross-border workforce shortages and promoting more resilient eldercare systems.

This paper is subject to limitations. First, there is a lack of up-to-date data on the caregiver workforce in both countries. Publicly available statistics often fail to capture caregiver-to-elder ratios, employment conditions, or the training and certification status of care providers. Second, many government and institutional policy documents, especially those relating to budget allocations, implementation monitoring, or local-level adaptations, are either unpublished, archived in local languages, or inaccessible to the public. This restricts the depth of policy analysis, particularly in evaluating the consistency between policy design and real-world execution. Third, this study does not fully capture the scope and impact of undocumented informal caregiving practices, which constitute a major component of elderly care in both countries. Such care, often provided by untrained family members, remains unrecorded yet deeply embedded in community life. Given these limitations, future research should prioritize the development of reliable data on caregiver workforce capacity, including training levels and distribution. It should also investigate how national policies are implemented at the local level and examine the lived experiences of informal caregivers. These would bridge the gap between policy frameworks and caregiving realities, offering more practical and culturally grounded solutions.

Conclusion

Elderly care remains a pressing issue in Thailand and the Philippines, albeit at different stages of urgency. While Thailand has made significant progress in policy-driven care initiatives, it still faces funding and workforce challenges. The Philippines, with its reliance on family-based care, needs to develop a structured and sustainable approach before demographic pressures escalate. This study underscores the necessity of policy integration, innovative funding models, and international cooperation to create equitable and culturally appropriate elderly care systems. Addressing these challenges proactively will ensure that both nations are prepared for the demographic realities ahead, fostering a future where aging populations receive the care and dignity they deserve.

References

Abalos, J. B. (2020). Older Persons in the Philippines: a Demographic, Socioeconomic and Health Profile. *Ageing International*, *45*(3), 230–254. https://doi.org/10.1007/s12126-018-9337-7

ADB. (2020). *Lessons From Thailand's National Community-based Long-term Care Program for Older Persons*. 25.

Campbell, J. C., Ikegami, N., & Gibson, M. J. (2010). Lessons from public long-term care insurance in Germany and Japan. *Health Affairs (Project Hope)*, *29*(1), 87–95. https://doi.org/10.1377/hlthaff.2009.0548

Cohen, A., & Cohen, P. T. (2024). Paradigm Conflict: Village Health Volunteers and Public Health in Thailand. *The Asia Pacific Journal of Anthropology*, *25*(3), 251–265. https://doi.org/10.1080/14442213.2024.2357104

Colombo, F., & Mercier, J. (2012). Help Wanted? Fair and Sustainable Financing of Long-term Care Services. *Applied Economic Perspectives and Policy*, *34*(2), 316–332. http://www.jstor.org/stable/23273827

Cruz, G. T. (2025). *Chapter 1 The Shifting Demographics of the Philippines : Towards an Ageing Society*. 1–13.

DSWD. (2023). *Reports (BFARs)*. https://www.dswd.gov.ph/

Felipe-Dimog, E. B., Realce Tumulak, M.-A. J., Garcia, A. P., Liang, F.-W., Silao, C. L. T., Hsu, M.-T., Saragih, I. D., & Sia-Ed, A. B. (2024). Caring Behavior of Filipinos toward their Elderly Family Members. *Acta Medica Philippina*, *58*(15), 6–10. https://doi.org/10.47895/amp.vi0.6880

Feng, Z., Liu, C., Guan, X., & Mor, V. (2012). China's rapidly aging population creates policy challenges in shaping a viable long-term care system. *Health Affairs (Project Hope)*, *31*(12), 2764–2773. https://doi.org/10.1377/hlthaff.2012.0535

Geraedts, M., Heller, G. V., & Harrington, C. A. (2000). Germany's long-term-care insurance: putting a social insurance model into practice. *The Milbank Quarterly*, *78*(3), 340,375-401. https://doi.org/10.1111/1468-0009.00178

Giang, L. T., Nguyen, N. T., Pham, T. T. H., & Phi, P. M. (2023). Factors associated with receipt of informal care among the Vietnamese older persons: Evidence from a national survey. *Frontiers in Public Health*, *11*, 1065851. https://doi.org/10.3389/fpubh.2023.1065851

Goel, A., & Ramavat, A. S. (2018). Absence of a formal long-term healthcare system for a rapidly ageing population is likely to create a crisis situation in the near future. *Medicine and Society*, *31*(2), 103–104.

HelpAge Int'l. (2013). *Care in Old Age in Southeast Asia and China*. *June*, 1–54.

Hernandez, C. J. D., Gozum, I. E. A., & Delgado, C. A. A. (2024). Community pantry as a form of bayanihan in the light of albert camus' concept of rebellion. *XLinguae*, *17*(3), 13–23. https://doi.org/10.18355/XL.2024.17.03.02

Ikegami, N., & Campbell, J. C. (1999). Health care reform in Japan: the virtues of muddling through. *Health Affairs (Project Hope)*, *18*(3), 56–75. https://doi.org/10.1377/hlthaff.18.3.56

ILO. (2014). Social protection for older persons: Key policy trends and statistics. In *Social Protection Policy Paper No. 1*. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_310211.pdf

Jiang, N., Wu, B., & Li, Y. (2024). Caregiving in Asia: Priority areas for research, policy, and practice to support family caregivers. *Health Care Science*, *3*(6), 374–382. https://doi.org/https://doi.org/10.1002/hcs2.124

Machida, M., & Miyashita, Y. (2021). For further collaboration on strengthening Universal Health Coverage (UHC): Partnership project between Japan and Thailand. *Global Health & Medicine*, *3*(1), 11–14. https://doi.org/10.35772/ghm.2020.01095

Moncatar, T. R. T., Vo, M. T. H., Siongco, K. L. L., Han, T. D. T., Seino, K., Gomez, A. V. D., Canila, C. C., Javier, R. S., Vo, T. Van, Tashiro, Y., Lorenzo, F. M. E., & Nakamura, K. (2024). Gaps and opportunities in addressing the needs of older adults in the Philippines and Vietnam: a qualitative exploration of health and social workers' experiences in urban care settings. *Frontiers in Public Health*, *12*, 1269116. https://doi.org/10.3389/fpubh.2024.1269116

OECD/EU. (2013). *A Good Life in Old Age?* OECD Health Policy Studies.

Olshansky, S. J., & Carnes, B. A. (2010). Ageing and health in the Philippines. *The Lancet*, *375*(9708), 25. https://doi.org/10.1016/S0140-6736(09)62177-2

PSA. (2023). *Philippine-Statistical-Yearbook*.

Sringernyuang, L., Felix, M. S., Torut, B., Wongjinda, S., Chaimongkol, U., & Wongjinda, T. (2020). Thailand: Case studies of filial piety, family dynamics, and family finances-unexpected findings of a country-wide research of the evaluation of project performance supported by older persons fund. *Asia-Pacific Social Science Review*, *20*(1), 145–158. https://doi.org/10.59588/2350-8329.1289

UN ESCAP. (2022). *Asia-Pacific Report on Population Ageing 2022*.

WHO & AHPSR. (2017). *Primary health care systems (primasys): case study from Thailand: abridged version*. World Health Organization.

Yeoh, B. S. A., & Huang, S. (2010). Foreign domestic workers and home-based care for elders in Singapore. *Journal of Aging & Social Policy*, *22*(1), 69–88. https://doi.org/10.1080/08959420903385635

Yeoh, B. S. A., Jian An, L., Elaine Lynn-Ee, H., & Huang, S. (2023). Migrant domestic workers and the household division of intimate labour: reconfiguring eldercare relations in Singapore. *Gender, Place & Culture*, *30*(5), 619–637. https://doi.org/10.1080/0966369X.2021.1956435

Yeung, Wei-Jun Jean, & Thang, Leng Leng. (2018). Long-Term Care for Older Adults in ASEAN Plus Three: The Roles of Family, Community, and the State in Addressing Unmet Eldercare Needs. *Journal of Aging and Health*, *30*(10), 1499–1515. https://doi.org/10.1177/0898264318796345

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Older Women in Prison: Navigating Vulnerability at the Intersection of Age and Gender

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Abstract

Despite the growing number of older individuals deprived of liberty, research on the specific realities of incarcerated older women remains scarce. This paper explores how age and gender intersect to shape the experiences, needs, and vulnerabilities of older women in prison. Drawing on a scoping review of literature focused on their characteristics, experiences, and institutional responses within the European context, the analysis highlights how prison systems—originally designed for a younger male population—generally fail to address the compounded challenges faced by this group. These include health and healthcare issues, particularly those related to gender-specific and age-related conditions, limited access to age- and gender-sensitive programmes, and social isolation exacerbated by double stigmatization (female gender and older age). Applying an intersectional lens, the study examines how systemic inequalities shape older women's experiences of incarceration. Findings indicate that public (prison) policies and institutional practices often overlook the specific needs of this minority population, reinforcing their invisibility and marginalisation. The paper calls for a shift toward gender- and age-responsive policies and practices to ensure equitable treatment and improved support for older women in prison.

Keywords: gendered ageing, older women, vulnerability, prison, total institution, justice, ageing and imprisonment, intersectionality

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Introduction

Over the past two decades, global prison populations have been reshaped by two major trends: the ageing of individuals (Handtke et al., 2015; Wilkinson & Caulfield, 2020) and the growing number women (UNODC, 2025). Older people now form the fastest-growing prison demographic worldwide (Skarupski et al., 2018), largely due to longer sentences, reduced parole, and general population ageing (Aday & Krabill, 2013; Crawley & Sparks, 2006). In prisons, "older" typically refers to those aged 50+, given the accelerated ageing effects of incarceration (Merkt et al., 2020).

In Council of Europe (CoE) countries, 18% of prisoners are aged 50 or older (Aebi & Cocco, 2024), with estimates suggesting over 150,000 older inmates. In some countries, this group exceeds 20% of the prison population. While gender-disaggregated data are lacking, older women in prison remain an overlooked subgroup, despite rising numbers. Since 2000, the global female prison population has increased by 60% (Fair & Walmsley, 2022), and in England and Wales, women aged 50+ have more than tripled over two decades (Ministry of Justice, 2014, 2025). Based on existing statistics (Aebi & Cocco, 2024), we calculate that at least 7,800 older women are currently incarcerated in CoE member states.

This population is diverse, and as Vannier and Nellis (2023) note, old age is a socially constructed category. Nonetheless, older women in prison often face poorer health, lack of social support, and higher vulnerability (Peraire et al., 2022; UNODC, 2009). Many contend with limited education, financial hardship, trauma, and social isolation (Genders & Player, 2020; Silva, 2018; Strimelle, 2022). Imprisonment often exacerbates these disadvantages and disrupts meaningful social roles such as caregiving.

Institutionally, prisons frequently fail to address the specific needs of older women, with regimes shaped by rigid routines characteristic of "total institutions" (Crawley, 2005; Goffman, 1961). Given the scarcity of focused research in Europe, this scoping review aimed to explore how older women in prison are depicted in the literature, what their lived experiences are, and how prison systems respond to their specific needs. Hence, the review addressed the following research questions: 1) How are older (50+) women in prison portrayed in academic literature across CoE states?; 2) What are their experiences of imprisonment?; 3) How do prison systems respond to this minority population? By mapping the existing literature, the review sought to characterise older women in prison, examine their lived experiences; and, identify institutional responses. The analysis prioritised women's own accounts, using author perspectives primarily to expand on her narratives.

This research contributes to addressing a critical knowledge gap and advocates for the development of prison policies and practices that better account for the intersection of ageing and gender.

Methods

The scoping review followed a structured protocol defined in March 2025. Sources were selected based on inclusion criteria covering empirical or conceptual literature focused on women aged 50+ in prison, addressing their characteristics, needs, experiences, or institutional responses within CoE member states. Sources published from 2015 onwards, in English, Portuguese, Spanish, or French, were considered.

Five academic databases were searched (BASE, EBSCOhost, PubMed, Scopus, and Web of Science) using a comprehensive search string combining age, gender, incarceration, and biopsychosocial themes. Grey literature was excluded. Duplicates removed and a two-stage eligibility check (title/abstract, then full-text) was conducted. Inclusion and exclusion criteria were applied systematically, and reasons for exclusion were recorded. The process followed the PRISMA-ScR guidelines (Tricco et al., 2018). A total of 1,626 literature sources were initially identified. After removing 369 duplicates, 1,257 records were screened by title and abstract, leading to the exclusion of 1,011. Of the remaining 246 sources sought for retrieval, 4 could not be accessed, resulting in 242 full-texts assessed for eligibility. From these, 227 were excluded due to geographic or contextual limitations (111), thematic misalignment (98), inaccessible format (9), insufficient detail (5), or duplication (4). The final review encompassed 15 literature sources (most cited in this paper and identified with an asterisk in the *References*).

Data from selected sources were thematically coded using a mixed deductive–inductive approach (Fereday & Muir-Cochrane, 2006). Coding was based on three main domains: characteristics of older women in prison, their lived experiences, and institutional responses. Sub-themes were developed iteratively, and findings were synthesized narratively.

Conclusion

Among the included sources, 20% focused exclusively on older women in prison, while 80% addressed both older women and men. Nearly half of the studies (46.7%) originated from the UK, with Portugal and Switzerland each contributing two (13.3%), and Germany, Ireland, Norway, and Serbia one each (6.7%). Most studies employed qualitative methods (66.7%), with 26.7% using quantitative approaches and one adopting a mixed-methods design. The predominant age threshold for defining “older” was 50+, used in over 73% of sources, though some applied higher thresholds (60–70), depending on national context. One study did not specify an age but aligned with the 50+ benchmark.

This scoping review identified several key dimensions shaping the realities of older women in prison, structured around a) their characterisation; b) their lived experiences; and c) institutional responses to them.

Characteristics of Older Women in Prison

The findings around this theme combine women's own accounts with authors’ analyses.

Health was the most cited theme, with literature consistently portraying older women as facing multiple health challenges. Chronic conditions such as osteoporosis, arthritis, and chronic pain are conditions mentioned by older women in prison (Handtke et al., 2015; Storry, 2022), though some report efforts to stay active (Silva, 2021). In Switzerland, older women have an average of seven chronic conditions—almost double that of older men (Handtke et al., 2015).

Mental health burdens are also significant: anxiety disorders affect 80%, sleep issues 84%, and over 50% experience post traumatic stress disorder or self-harm (Perry et al., 2024; Tverborgvik et al., 2025). Older women tend to experience more severe mental health conditions than older men, though country variations exist (Davoren et al., 2015; Perry et al., 2024).

Despite these challenges, some women reject being labelled as "old" and maintain good health (Pimentel, 2022; Storry, 2022).

On a psychological level, women reported feelings of sadness, guilt, and loss of identity linked to ageing in prison (Annison & Hageman, 2015; Silva, 2021). As Anastasia shared: "I think everything's a bit worse when you're older. You's a bit more resilient, I think, when you're younger" (Storry, 2022, p. 153). Emotional fragility is intensified by disrupted caregiving roles and separation from family (Perry et al., 2024; Storry, 2022). Some cope by working constantly to preserve identity (Storry, 2022). They are often hesitant to express their needs (Pageau et al., 2021).

Strongly defined by caregiving roles and family identity, older women suffer deeply from separation and loss, which characterize their fragmented social aspect. Gwen's account illustrates this: "(…) my mum's 83 and she's bed-bound; I was her carer for her before I come in. [crying]" (Storry, 2022, p. 128). Social disconnection worsens with age and the death of loved ones: "My circle of friends on the outside is now virtually non-existent, there is a possibility that the few left might be in 'homes' or even dead because they are older (…)" (Price, 2024, p. 23). Maintaining family contact is a central emotional need (Handtke et al., 2015; Storry, 2022).

Educational disadvantage is common. In Switzerland, up to 61% had high school level or less (Handtke et al., 2015). In Portugal, illiteracy is a reality for some (Silva, 2021). Mafalda stated: (…) I have difficulty not knowing how to read. (...) I didn't take any courses here (...)" (Silva, 2021, p. 146), while Beatriz noted: "I didn't have the headspace" to continue school (Silva, 2021, p. 147).

Some older women reveal moments of spiritual engagement. Their narratives tell how faith and spirituality offer coping tools. Sara shared: "God gave me discernment to take care of myself" (Silva, 2021, p. 143), while Alda pleaded: "I feel like I'm going to die here. (…) I think I'm dying (…). And I pray to God to let me stay and let me go to my family [crying]. I ask for mercy (…) no one deserved this [crying]" (Pimentel, 2022, p. 128). Prison can also become a space of spiritual resilience and personal reflection (Annison & Hageman, 2015).

Pathways to/Through Prison: Older women in prison are diverse, including first-time offenders, repeat offenders, and those ageing in place (Annison & Hageman, 2015). Many serve long sentences for violent or drug-related offenses—e.g., 54% convicted of violent crimes in Switzerland (Handtke et al., 2015) and high rates of drug trafficking in Portugal and Norway (Pimentel, 2022; Tverborgvik et al., 2025). A trend of late-onset incarceration emerges, for example in Norway in a studied sample 89% were first imprisoned after age 50 (Tverborgvik et al., 2025).

Compounded Vulnerabilities: The intersection of age, gender, health, and social exclusion contributes to heightened vulnerability, yet intersectionality itself, as concept, is absent in the literature reviewed. Older women are seen as challenging societal norms and expectations: "Older female offenders violate traditional expectations and attitudes of society towards older women" (Handtke et al., 2015, p. 7). They face systemic neglect within prison regimes designed for younger men (Annison & Hageman, 2015; Easton, 2018).

Low visibility, limited agency, and cumulative disadvantage—such as histories of violence or housing insecurity—compound their marginalisation (Easton, 2018; Storry, 2022). Prison

systems often overlook these characteristics and realities, reinforcing cycles of social exclusion.

Older Women's Experiences of/in Prison

Five main themes emerge regarding older women's prison experiences: *Institutional and Structural Barriers, Healthcare and Wellbeing, Social Relations and Belonging, Agency, Coping and Resistance*; and a smaller theme of *Exceptions* (rare positive accounts).

Institutional and Structural Barriers

Older women report limited suitable activities, e.g., yoga classes not adapted to their pace (Pageau et al., 2021), and low gym participation with a preference for artistic activities (Perry et al., 2024). Work experiences are mixed but often valued as purposeful (Storry, 2022). Poor cell conditions, noise, and placement with younger inmates harm wellbeing (Handtke et al., 2015; Storry, 2022). Uniform treatment ignores specific needs, exemplified by neglecting menopausal symptoms: "I would prefer a lethal injection and die with dignity, rather than suffer years of slow mental and physical abuse and torture" (Price, 2024, p. 34).

Dismissive staff attitudes and penalization of complaints deepen distress (Handtke et al., 2015; Storry, 2022).

Healthcare and Wellbeing

Older women consistently report inadequate healthcare within prison institutions, with long waits and poor access to specialists (Handtke et al., 2015; Storry, 2022). Nutrition is often unhealthy, worsening chronic conditions (Handtke et al., 2015; Price, 2024). Menopause care is insufficient, with one woman stating: "The best healthcare can offer is a poster listing symptoms and an 18-month waiting list for a clinic" (Price, 2024, p. 27).

Experiences of dismissal and infantilisation by medical staff cause distrust, with some avoiding prison healthcare altogether (Handtke et al., 2015; Storry, 2022). Fear of dying due to neglect is voiced: "I am scared I will die in prison - due to medical neglect..." (Price, 2024, p. 28). Poorly managed health worsens dependence and hampers emotional wellbeing, with suicide overrepresentation noted (Opitz-Welke et al., 2019; Robinson et al., 2025).

Social Relations and Belonging

Older women in prison endure profound rupture, isolation, and emotional distress stemming from disrupted social ties and caregiving roles.

Separation from family is one of the most painful aspects affecting their wellbeing: "I can't live without my family (...) My heart belongs to my children" (Handtke et al., 2015, p. 6).

Loss of caregiving roles, particularly both young adult children and parents, also deeply impacts both the women and their relatives: "They expected me to help look after them (…) So, it's kind of wrecked their life as well as mine" (Storry, 2022, p. 128).

In-person visits provide fleeting comfort but often increase sadness, worsened by distance and long sentences, leading women to feel their families have "gone on without them" (Price,

2024, p. 16). Older women in prison tend to express more distress about these losses than older men in the same context (Perry et al., 2024; Storry, 2022).

Social isolation, exclusion, and withdrawal dominate older women experiences in/of prison. Many withdraw to protect themselves from an environment they perceive as hostile and in which sociability is forced: "(…) not becoming too close friends with anybody, then you don't run into danger. (…)" (Handtke et al., 2015, p. 5).

Age and personality often reinforce withdrawal, with some relying on books or objects for companionship (Handtke et al., 2015). Generational divides within the prison setting marginalise older women further: "(…) we are the oldies, the mammies. You are really shoved away; (…) In sports (…) they don't want us, because with us they cannot win. You're simply shut out" (Handtke et al., 2015, p. 6). The constantly noisy environment of prison prompt some to avoid participation (Silva, 2021).

Older women often experience a fractured identity but seek alternative connections, sometimes emotionally attaching to staff or surrogate familial roles (Easton, 2018; Storry, 2022). Personal objects like photographs act as vital emotional anchors (Pimentel, 2022).

Agency, Coping and Resistance

Older women often feel reduced to "just another prisoner" (Storry, 2022, p. 142), with the institution diminishing their identities. They express how younger staff exacerbate feelings of humiliation and frustration, as Selina vented: "(…) they're 20, 22, 24. And you go, 'excuse me, miss miss', and its like 'oh god!', I'm old enough to be her bloody mum! […] They make you feel so stupid!" (Storry, 2022, p. 143).

Some moments of recognition bring brief affirmation (Storry, 2022). Women lament lost productive lives and call for age-appropriate activities including dedicated exercise times, creative workshops, and social groups (Pageau et al., 2021; Perry et al., 2024).

Older women usually resort to work, solitude, education, and creative activities to cope in prison. Some conceal aging signs and focus on cognitive growth (Handtke et al., 2015; Perry et al., 2024; Storry, 2022). They seek meaningful roles such as mentoring (Price, 2024).

Strict prison routines strip autonomy and the extent of institutional control is perceived as total, as one older woman explained: "(…) Everything is said here (emphasized). Here you will be told when to take your tablets. Any responsibility will be taken away from you (…)" (Pageau et al., 2021, p. 5). Transition from independence to dependency is deeply felt: "I have been a working mum with a house to run, bills to pay, mouths to feed. (…) Here I am unable to do anything independently [...]" (Price, 2024, p. 16).

Fears about reintegration are common, despite the capabilities and willingness to contribute of many of these women (Storry, 2022). Small freedoms like gardening outside offer dignity (Handtke et al., 2015).

Exceptions

A few women report positive experiences, praising compassionate staff (Handtke et al., 2015) or describing prison as predictable and manageable (Storry, 2022).

Institutional Responses

This scoping review identified three types of institutional responses to older women in prison, revealing a generally fragmented and inadequate approach. Specific targeted initiatives, reported in less than a third of the reviewed sources, are rare and exclusively documented in the UK. These small-scale efforts are usually led by individual prisons in partnership with charities, addressing the intersection of age and gender through healthcare, social inclusion, and practical support. Examples include age-specific social groups offering quizzes, arts and crafts, and private gatherings (Annison & Hageman, 2015; Easton, 2018; Storry, 2022), wellbeing activities such as coffee mornings (Perry et al., 2024), dedicated units for those over 50 providing gym and yoga sessions (Easton, 2018), menopause support including clinics and hormone replacement therapy (Storry, 2022), and individualised care involving coordinated health and social services alongside practical accommodations like thicker mattresses and dietary adjustments (Easton, 2018; Storry, 2022).

In contrast, there are several sectional prison responses, addressing either older people (mostly men) or women, rarely both, resulting in fragmented interventions. Symbolic or non-binding policies acknowledge older people in prison rights but often overlook older women specifically (Davoren et al., 2015). In England and Wales, frameworks such as the Model for Operational Delivery have been criticised as raising awareness without translating into actionable measures (Storry, 2022), and recent recommendations for gender-sensitive healthcare remain largely unimplemented (Robinson et al., 2025). Fragmented programmatic responses occur in countries like Portugal, where older individuals have technically open access to programmes but these lack tailoring or adaptations whatsoever, leading older women to self-exclude (Pimentel, 2022; Silva, 2021). In the UK, prisons with larger older populations offer tailored day centres, and additional physical assistance is usually provided (Easton, 2018; Storry, 2022). Nevertheless, some specific measures, such as cervical cancer screening, lack adequate information and support, and broader needs like family contact are acknowledged but not structurally supported, often depending on staff discretion and resulting in inconsistent support (Robinson et al., 2025; Storry, 2022).

The most prevalent response, reported in the great majority of the literature sources included in this scoping review, is one of generalist, absent or even detrimental institutional approach. Older women face systemic neglect, institutional unpreparedness, and invisibility in policy. Prison infrastructure and regimes are typically designed for younger populations, making them unsuitable for older women, who lack dedicated units and opportunities to socialise with peers of similar age, sometimes leading to tensions and unfair treatment (Annison & Hageman, 2015; Handtke et al., 2015; Pageau et al., 2021; Price, 2024; Storry, 2022). The distance from home – because there are few prison institutions for women – disrupts family contact and undermines reintegration (Storry, 2022). Preventive healthcare is grossly insufficient; only around a fifth receive breast cancer screening (Robinson et al., 2025), menopause support is limited and symptoms are often exacerbated by the prison environment (Robinson et al., 2025; Storry, 2022), and other age-related health concerns such as chronic conditions and mental health problems are poorly addressed (Opitz-Welke et al., 2019; Price, 2024). The dual marginalisation of older women in the carceral context, both as women and as older adults, remains largely unacknowledged in policies often designed around younger male populations (Easton, 2018; Handtke et al., 2015; Pimentel, 2022; Silva, 2021). Despite some earlier efforts in the UK, such as the House of Commons Justice Committee's call for an intersectional approach and Prison Service Order 4800, older women have been omitted from the most recent Women's Policy Framework (2018) and no comprehensive or strategic

policy exists, resulting in fragmented and inconsistent practices (Price, 2024; Storry, 2022). Resistance from staff to broader age-specific policies, citing individual differences, further perpetuates inadequate support, while a lack of systematic data collection hinders evidence-based planning (Robinson et al., 2025; Storry, 2022).

Concluding Remarks

This scoping review examined the characteristics and experiences of older women in prison, as well as institutional responses, with a focus on Council of Europe member states. The existing literature is predominantly UK-centred and largely qualitative in methodology. Notably, older women in prison are generally studied within the broader research on older individuals in the custodial setting. The findings indicate that prisons are ill-prepared to address the intersectional complexities faced by older women, including the interplay of age, gender, biopsychosocial factors and diverse social determinants. There is an urgent need to rethink prison environments, programmes, and policies to better serve this growing minority, incorporating adaptations for physical accessibility, wellbeing, and social inclusion.

The data highlight a significant gap in institutional responsiveness, revealing systemic failures that exacerbate the multidimensional deterioration experienced by older women in prison and emphasising the necessity for age- and gender-specific reforms. However, a major obstacle remains the lack of reliable data on this population (Robinson et al., 2025).

While the findings of this review may not fully capture the characteristics, realities, and institutional responses to older women in prison across Europe, especially given the heterogeneity of this population and the review's limitations, this work nonetheless contributes to illuminating a relatively neglected area within prison studies from a social sciences perspective.

Any measures to support this minority must be evidence-based, and there is a clear demand for more comprehensive research on and with older women in prison. As Powell and Wahidin (2006) observed, failing to research this minority population in prison represents an implicit form of ageism that perpetuates their systemic neglect.

This scoping review has several limitations. The search strategy was refined iteratively but didn't involve a professional information specialist/librarian. Although five major scientific databases were used, the unavailability of criminology- or interdisciplinary social science–specific databases such as *Criminal Justice Abstracts* or *Sociological Abstracts* through the lead author's institution may have constrained access to context-specific literature. The study selection and data coding were carried out solely by the lead author, supervised but without a second independent reviewer, which could introduce bias. Additional limitations include potential publication bias, language restrictions, and the exclusion of grey literature, which may have omitted relevant viewpoints. As a scoping review, the study aimed to map existing literature rather than critically appraise study quality or methodologies. Nonetheless, it provides a structured and meaningful overview of a relatively underexplored topic, laying the groundwork for future systematic research.

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References

Aday, R. H., & Krabill, J. J. (2013). Older and geriatric offenders: Critical issues for the 21st century. In L. Gideon (Ed.), *Special needs offenders in correctional institutions* (pp. [chapter pages if available]). SAGE Publications. https://doi.org/10.4135/9781452275444.n7

Aebi, M. F., & Cocco, E. (2024). *SPACE I 2023 – Council of Europe annual penal statistics: Prison populations*. Council of Europe & University of Lausanne. https://wp.unil.ch/space/files/2025/04/space_i_2023_report.pdf

Annison, J., & Hageman, C. (2015). Older women prisoners and The Rubies project. In J. Annison, J. Brayford, & J. Deering (Eds.), *Women & Criminal Justice: From the Corston Report to Transforming Rehabilitation (pp. 137–151)*. Policy Press.

Crawley, E. (2005). Institutional thoughtlessness in prisons and its impacts on the day-to-day prison lives of elderly men. *Journal of Contemporary Criminal Justice, 21*(4), 350–363. https://doi.org/10.1177/1043986205282018

Crawley, E., & Sparks, R. (2006). Is there life after imprisonment? How elderly men talk about prison and release. *Criminology & Criminal Justice, 6*(1), 63–82. https://doi.org/10.1177/1748895806060667

Davoren, M., Fitzpatrick, M., Caddow, M., Cunniffe, R., Fitzpatrick, C., & Kennedy, H. G. (2015). Older men and older women remand prisoners: Mental illness, physical illness, offending patterns and needs. *International Psychogeriatrics*, 27(5), 747–755. https://doi.org/10.1017/S1041610214002348

Easton, H. (2018). Older prisoners, gender and family life. In B. Clough & J. Herring (Eds.), *Ageing, Gender and Family Law (pp. 142–158)*. Routledge.

Fair, H., & Walmsley, R. (2022). *World female imprisonment list (5th ed.): Women and girls in penal institutions, including pre-trial detainees/remand prisoners*. Institute for Crime & Justice Policy Research. https://www.prisonstudies.org/sites/default/files/resources/downloads/world_female_imprisonment_list_5th_edition.pdf

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1), 80–92. https://doi.org/10.1177/160940690600500107

Genders, E., & Player, E. (2020). Long sentenced women prisoners: Rights, risks and rehabilitation. *Punishment & Society, 24*(1), 3–25. https://doi.org/10.1177/1462474520933097

Goffman, E. (1961). *Asylums: Essays on the Condition of the Social Situation of Mental Patients and Other Inmates*. Anchor Books.

Handtke, V., Bretschneider, W., Elger, B. S., & Wangmo, T. (2015). Easily forgotten: Elderly female prisoners. *Journal of Aging Studies*, 32, 1–11. https://doi.org/10.1016/j.jaging.2014.10.003

Merkt, H., Haesen, S., Meyer, L., Kressig, R. W., Elger, B. S., & Wangmo, T. (2020). Defining an age cut-off for older offenders: A systematic review of literature. *International Journal of Prison Health, 16*(2), 95–116. https://doi.org/10.1108/IJPH-11-2019-0060

Ministry of Justice. (2014). *Prison population by type of custody, age and sex, 2002 to 2014: Table A1.5* [Data table]. In *Prison population: 2014* (Annual statistics release). UK Government. https://www.gov.uk/government/statistics/offender-management-statistics-quarterly-january-to-march-2014

Ministry of Justice. (2025). *Prison population data tool: 31 March 2025* [Data set]. UK Government. https://www.gov.uk/government/statistics/offender-management-statistics-quarterly-october-to-december-2024

Opitz-Welke, A., Konrad, N., Welke, J., Bennefeld-Kersten, K., Gauger, U., & Voulgaris, A. (2019). Suicide in older prisoners in Germany. *Frontiers in Psychiatry, 10*, 154. https://doi.org/10.3389/fpsyt.2019.00154

Pageau, F., Cornaz, C. D., Gothuey, I., Seaward, H., Wangmo, T., & Elger, B. S. (2021). Prison unhealthy lifestyle and poor mental health of older persons—A qualitative study. *Frontiers in Psychiatry, 12*, 690291. https://doi.org/10.3389/fpsyt.2021.690291

Peraire, M., Pérez-Sánchez, E.-J., Pérez-Pazos, J., de Gomar-Malia, J. M., & Tort-Herrando, V. (2022). Relevance of psychogeriatrics in the prison setting: A systematic review. *Revista Española de Sanidad Penitenciaria, 24*(3), 101–109. https://doi.org/10.18176/resp.00058

Perry, A. E., Moe-Byrne, T., Knowles, S., Schofield, J., Changsiripun, C., Churchill, R., Williamson, K., Marshall, D., & Parrott, S. (2024). Utilising survey data and qualitative information to inform a logic model to support older people in custody with common mental and physical health problems: Addressing the physical and mental health needs of older prisoners (the PAMHOP study). *International Journal of Law and Psychiatry, 95*, 102002. https://doi.org/10.1016/j.ijlp.2024.102002

Pimentel, A. C. M. (2022). *Envelhecimento, reclusão e COVID-19: Um olhar pluridimensional de vivências, experiências e percepções.* [Ageing, incarceration and COVID-19: a multidimensional look at experiences and perceptions.] [Master's dissertation, Universidade do Minho]. Universidade do Minho RepositoriUM. https://hdl.handle.net/1822/79530

Powell, J. L., & Wahidin, A. (2006). Rethinking criminology: The case of 'ageing studies'. In A. Wahidin & M. Cain (Eds.), *Ageing, crime and society* (pp. 197–210). Willan Publishing.

Price, J. (2024). *Growing old and dying inside: Improving the experiences of older people serving long prison sentences*. Prison Reform Trust. https://prisonreformtrust.org.uk/wp-content/uploads/2024/08/Growing-old-and-dying-inside.pdf

Robinson, L., O'Neill, A., Forsyth, K., Heathcote, L., Barnett, K., Senior, J., Gutridge, K., Robinson, C. A., & Shaw, J. (2025). Older women in the criminal justice system: A brief report from a nominal group. *The Journal of Forensic Psychiatry & Psychology, 36*(1), 24–36. https://doi.org/10.1080/14789949.2024.2437447

Silva, R. A. D. (2018). *Envelhecer e viver na prisão: As vivências prisionais de reclusos/as idosos/as.* [Ageing and living in prison: Prison experiences of older prisoners.] [Doctoral thesis, Universidade do Minho]. University of Minho Repository. https://repositorium.sdum.uminho.pt/handle/1822/62179

Silva, R. A. D. (2021). As atividades prisionais vistas por reclusos(as) idosos(as). *Revista Inclusiones, 8*, 136–152. Editorial Cuadernos de Sofía. https://repositorium.sdum.uminho.pt/handle/1822/69225

Skarupski, K. A., Gross, A., Schrack, J. A., Deal, J. A., & Eber, G. B. (2018). The health of America's aging prison population. *Epidemiologic Reviews, 40*(1), 157–165. https://doi.org/10.1093/epirev/mxx020

Storry, M. (2022). *'There's lots of suffering in here, but some people are suffering more': Age, gender and the pains of imprisonment* (Doctoral dissertation, University of Kent). Kent Academic Repository. https://doi.org/10.22024/UniKent/01.02.96692

Strimelle, V. (2022). Le service correctionnel canadien face au vieillissement carcéral : problématiser l'invisible et répondre à l'impensé (1994-2020). *Champ pénal/Penal field, 27*. https://doi.org/10.4000/champpenal.13908

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., ... Straus, S. E. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine, 169*(7), 467–473. https://doi.org/10.7326/M18-0850

Tverborgvik, T., Stavseth, M. R., Lokdam, N. T., Jordan, A., & Bukten, A. (2025). The burden of mental health and somatic disorders among people experiencing incarceration later in life: A 13-year cohort study. *Social Science & Medicine, 373*, 118007. https://doi.org/10.1016/j.socscimed.2025.118007

UNODC. (2009). *Handbook on prisoners with special needs*. https://www.unodc.org/pdf/criminal_justice/Handbook_on_Prisoners_with_Special_Needs.pdf

UNODC. (2025). *Prison matters 2025: Global prison population and trends; A focus on rehabilitative environments.* United Nations.

Vannier, M., & Nellis, A. (2023). 'Time's relentless melt': The severity of life imprisonment through the prism of old age. *Punishment & Society, 25*(5), 1271–1292. https://doi.org/10.1177/14624745231154880

Wilkinson, D., & Caulfield, L. (2020). A systematic review of the characteristics and needs of older prisoners. *Journal of Criminal Psychology, 10*(4), 253–276. https://doi.org/10.1108/JCP-06-2020-0023

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Sustaining Cognition and Improving Movement With Weight Training Exercises in a 78-Year-Old With DLB: A Case Report and Literature Review

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Abstract

Dementia with Lewy bodies (DLB) is the second most common neurodegenerative dementia, often with a worse prognosis than Alzheimer's disease, including faster cognitive decline, shorter life expectancy, and higher rates of institutionalization. Despite its significance, no specific treatments exist due to limited research. This case involves a 78-year-old man diagnosed with DLB who presented with bradykinesia, vivid visual hallucinations, muscle stiffness, gait difficulties, REM sleep behavior disorder (RBD), and cognitive decline. He was prescribed Melatonin, Clonazepam, Donepezil, Quetiapine, Pitavastatin, and Levodopa/ benserazide. His initial scores were Mini-Mental State Examination (MMSE) 25/30, Montreal Cognitive Assessment (MoCA) 17/30, and Time Up and Go (TUG) 47 seconds. He participated in a structured rehabilitation program, including strength training (focusing on quadriceps, hamstrings, hip adductors/adductors/abductors, and core muscle) five days per week. After three years, his TUG improved to 17.58 seconds, MMSE score remained relatively stable at 27/30, MoCA score was 15/30, with no new neuropsychiatric symptoms appearing. However, six months after access to facilities was restricted and frequency of exercise was reduced to 2-3 days per week, functional decline accelerated despite increased Levodopa/ benserazide dosage. Ultimately, he became unable to walk. This case underscores the potential advantages of structured physical exercise and cognitive stimulation therapy in enhancing motor function and preserving cognitive stability in individuals with DLB. A multidisciplinary approach may improve long-term outcomes. Many studies have demonstrated the positive impact of exercise and weight training on Alzheimer's dementia, similar strategies may be valuable for other dementia, including DLB.

Keywords: dementia with Lewy bodies, structured physical exercise, cognitive stimulation therapy, multidisciplinary approach

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Introduction

Dementia with Lewy bodies (DLB) is the 7second most common type of dementia, following Alzheimer's disease, and it makes up about 5-10% of all dementia cases. However, it is often under-recognized and misdiagnosed (Chin et al., 2019). Public awareness of this disease remains low, even among healthcare professionals. The impact of the disease on both caregivers and patients is not widely recognized. There are currently no FDA-approved medications specifically for the treatment of DLB (Capouch et al., 2018, p. 256). A study on dementia in Thailand found that DLB accounts for approximately 6% of all dementia cases, which is lower than the prevalence reported globally. This reflects a similar challenge in diagnosis, as DLB shares overlapping symptoms with other conditions such as Alzheimer's disease (AD) and Parkinson's disease (PD). Although functional and molecular imaging can enhance diagnostic accuracy, these techniques are not yet widely used in Thailand yet (Dharmasaroja et al., 2021). This progressive neurodegenerative disorder is marked by the unusual buildup of protein deposits known as Lewy bodies in neurons across the brain. These deposits impact areas that are crucial for cognition, behavior, movement, and autonomic functions. The DLB Consortium established revised consensus criteria in 2017 (McKeith et al., 2017) to help diagnose DLB, clearly differentiating between clinical features and diagnostic biomarkers. According to these criteria the key requirement for diagnosing DLB is a noticeable decline in cognitive abilities that disrupts normal social or work life. Unlike Alzheimer's, early DLB often shows significant issues with attention, executive function, and visuospatial skills instead of memory loss, although memory problems usually start to appear as the disease advances.

Literature Review

The Four Core Features

Diagnosis of probable DLB requires progressive cognitive decline and at least two of the following core clinical features, while possible DLB requires one (Armstrong, 2021; McKeith et al., 2017):

1. Fluctuating Cognition: This refers to noticeable ups and downs in attention and alertness. These fluctuations appear as moments of confusion, incoherence, or changes in consciousness that can vary significantly from day to day or even within the same day. This can be especially challenging for caregivers, who witness significant shifts in the patient's cognitive abilities
2. Recurrent Visual Hallucinations: These hallucinations are usually vivid and detailed, often involving people or animals. They occur in more than 70% of patients with DLB and often appear early in the disease. Unlike hallucinations seen in other conditions, those in DLB tend to be complex, persistent, and can provoke a range of emotional reactions from the patients.
3. REM Sleep Behavior Disorder (RBD): This condition involves acting out dreams during REM sleep because the usual muscle paralysis doesn't happen. Recent studies suggest that RBD often appears before other key symptoms, especially in men, and could be an early warning sign of DLB. Research indicates that RBD can show up years or even decades before a formal DLB diagnosis.
4. Parkinsonism: This includes motor symptoms that resemble those found in Parkinson's disease, such as slowed movement (bradykinesia), stiffness (rigidity), and resting

tremors. While the parkinsonian symptoms in DLB might not be as severe as those in Parkinson's disease, they still play a significant role in affecting daily functioning.

Effective Treatment in DLB

Managing DLB involves treating symptoms based on their presentation. Treatment decisions must carefully balance therapeutic benefits and potential side effects, as DLB patients are particularly sensitive to certain medications, especially antipsychotic (Armstrong, 2021; McKeith et al., 2017).

1. Cognitive symptom:
   First-line pharmacologic treatment for cognitive impairment in DLB includes cholinesterase inhibitors (CHEIs) like rivastigmine and donepezil, which improve cognition and daily function while slowing deterioration. Memantine, though less established, is well-tolerated and may benefit cognition and neuropsychiatric symptoms, either alone or alongside CHEIs.
2. Neuropsychiatric Symptoms:
   Managing behavioral and psychiatric symptoms in DLB can be quite tricky, especially because patients often have a heightened sensitivity to antipsychotic medications. CHEIs are a great option to consider first, as they can effectively address issues like apathy, hallucinations, and delusions. Antipsychotics should be avoided unless necessary, with low-dose quetiapine and clozapine recommended, or alternatives like pimavanserin preferred. Selective Serotonin Reuptake Inhibitors (SSRIs) and Serotonin-norepinephrine reuptake inhibitors (SNRIs) may help with depression and anxiety, though data are limited. Nonpharmacological approaches, including environmental modifications, music therapy, cognitive training, and caregiver education, are recommended as first-line interventions.
3. REM Sleep Behavior Disorder (RBD):
   Treatment options for RBD in DLB include clonazepam, which is effective but requires caution due to cognitive side effects. Melatonin is a safer option, while memantine might provide some advantages
4. Motor Symptoms:
   For Parkinsonian features in DLB, treatment options include Levodopa/Carbidopa: Improves motor function but offers less benefit than in Parkinson’s disease and may worsen psychiatric symptoms or cause confusion.
   Zonisamide: A potential adjunct for managing motor symptoms.
5. Autonomic Dysfunction:
   Treatment approaches for common autonomic symptoms include:
   Orthostatic Hypotension: Midodrine, fludrocortisone, or droxidopa may be beneficial.
   Constipation: Management with stool softeners and laxatives.
   Sialorrhea (Excessive Drooling): Botulinum toxin injections or glycopyrrolate may provide relief.
6. Urinary Dysfunction:
   Mirabegron, a β3-adrenoceptor agonist lacking typical anticholinergic side effects, may help manage urinary urgency and frequency while minimizing cognitive side effects.

Exercise Interventions for Dementia With Lewy Bodies

Exercise has been shown to provide significant benefits for individuals with dementia, including improvements in physical function and potential cognitive and behavioral

enhancements. Evidence supports the efficacy of supervised multi-modal exercise programs in enhancing strength, balance, mobility, and walking endurance in individuals with mild cognitive impairment or dementia. These findings highlight the importance of structured exercise interventions as a key component of dementia care to promote functional independence and overall well-being (Lam et al., 2018; Li et al., 2019).

A thorough systematic review (Inskip et al., 2016) highlights a significant issue: they found only five studies—comprising one uncontrolled trial, one randomized controlled trial, and three case reports—that evaluated a mere 16 participants with DLB. Exercise interventions were varied and included verbal cueing with movement, motor training, stationary cycling, large amplitude bodyweight exercise, high intensity functional exercises and light leisure activities (control group, n = 2). The duration of sessions ranged from 1 to 180 mins, frequency ranged from once only to 5 times/week, and total program intervention ranged from 1 session to 12 wks. The intensity was not reported in three studies, while the cycling intervention reported 50–75% of heart rate maximum, and Telenius and colleagues set a target of performing a maximum of 12 repetitions of given weighted or body weight exercises (Inskip et al., 2016, p. 10).

The most reported outcomes were related to physical function measures. Habitual gait speed changes were reported in 15 participants across four studies (n = 2 participants in a control group). Habitual walking speed of exercise participants (n = 13) increased by 0.18 m/s on average (95% CI -0.02, 0.38m/s) Standing function was reported in six participants across two case reports and one Randomized Controlled Trial (RCT). In one study, a participant showed improvement in single chair stand function using a customized rating scale. For the 30-second chair stand test, exercise group participants (n = 3) performed a mean of 3 more stands (range 2-4) compared to the control group (range 0-1 stands) after training For functional assessment Basic Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs) were assessed in six participants across two case reports and one RCT by Telenius et al. (with two control participants). The change in the Barthel Index was inconclusive due to incomplete data.

Cognitive, psychiatric, quality of life, and physiological outcomes were assessed, but only 2 of 5 studies reported neuropsychiatric outcomes (5 participants in total, n = 2 control), limiting group analysis. One study found a single participant improved on the Color Trail Test (57.5% and 56.7%), Parkinson's Disease-Cognitive Rating Scale (PD-CRS) (+15 points), and Unified Parkinson's Disease Rating Scale Part I (UPDRS-I) mood/cognition scores (+15/16 points). Another study reported MMSE, Neuropsychiatric Inventory (NPI), Cornell Scale for Depression in Dementia, and Quality of Life in Late-Stage Dementia Scale (QUALID) outcomes, but MMSE data were incomplete, and other measures showed mixed or non-significant changes.

The case study (Dawley, 2015) used Parkinson-specific interventions, primarily Lee Silverman Voice Treatment (LSVT) BIG (signifying big movements), a program designed to enhance movement amplitudes in people with Parkinson's disease (PD). The program consisted of maximum daily exercises, task-specific training, and functional activities. Due to insurance and medical conflicts, the patient could not fully adhere to the program. The patient had a tentative diagnosis of DLB with a differential diagnosis of PD, and it was assumed that similar physical therapy interventions could be applied. Under the supervision of a certified physical therapist, he participated in twice-weekly sessions over three months, completing a total of eight sessions. Outcome measures showed significant improvement in gait speed,

classifying him as a safe community ambulator, and his TUG test improved to the "unimpaired" category. However, it is important to note that the diagnosis of DLB had not been confirmed and remained a differential diagnosis in this case.

This glaring gap in the available evidence poses considerable challenges for clinicians who are trying to create exercise prescriptions grounded in solid evidence for this specific group.

Case Presentation

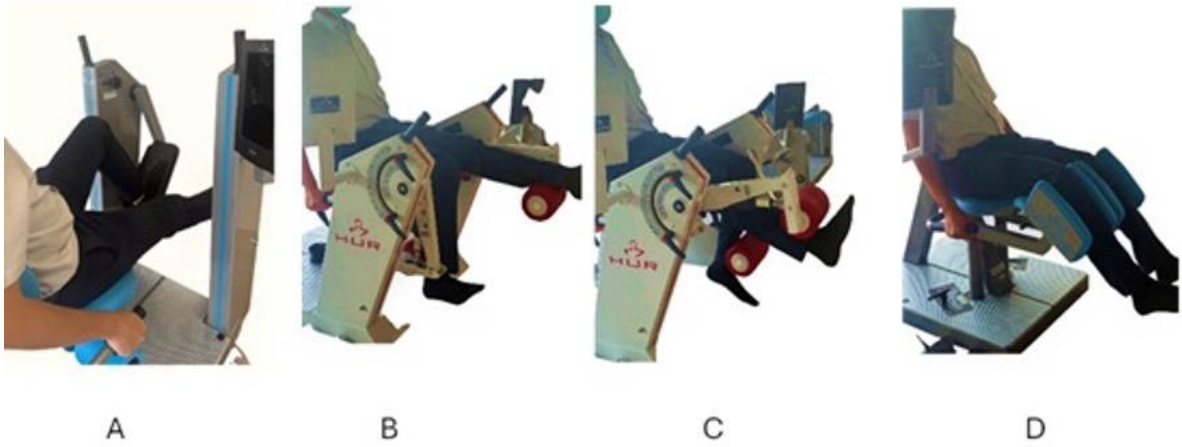
A 78-year-old right-handed man came in with symptoms like bradykinesia, vivid visual hallucinations, muscle stiffness, trouble walking, RBD, and some cognitive decline. After a thorough evaluation, a neurologist diagnosed him with DLB and prescribed a range of medications including Melatonin, Clonazepam, donepezil, Quetiapine, Pitavastatin, and levodopa 200/ benserazide 50 (Madopar 250). Initially in September 2020, his scores were MMSE 25/30, MoCA 17/30, and he took 47 seconds on the TUG test.

Methodology

To help with his condition, he started treatment at the Smart Medical Wellness Gym. The Smart Medical Wellness Gym at the Institute of Geriatric Medicine offers exercise programs specifically designed for older adults. Developed by physicians, sports scientists, and movement scientists, these programs incorporate specialized equipment tailored to meet the needs of the elderly, ensuring safe and effective physical activity, focusing on weight training. Based on the clinical records, in December 2020, he engaged in a structured exercise program five days per week, with each session lasting approximately 1 to 1.5 hours. Strength training was performed using pneumatic (air resistance) machines targeting the quadriceps, hamstrings, hip adductors/abductors, and core muscles, incorporating exercises such as leg press, leg curl, abduction–adduction, and core strengthening for both abdominal and back muscles. Each session also included 15–30 minutes of cardiovascular exercise using a Cybercycle. Then the day's program ended with a karaoke singing session. This program continued for two years, with an annual assessment to track progress.

Figure 1

The Example of Exercise, "A Leg Press", "B & C Leg Curl" and "D Abduction and Adduction"



Note. He received an exercise the same position 15 times for each set, completing 3 sets in total.

Table 1

The Protocol of the Strength Training and Cardio

Type of exercise		Resistance/ Distance
Strength training	Abdomen	9 (kg)
	Back	10 (kg)
	Pull down	6 (kg)
	Abduction/adduction	6.5 (kg)
	Leg extension	1.4 (kg)
	Leg curl	8 (kg)
	Leg press	23 (kg)
	Rhomboid	3 (kg)
Cardio training	Cybercycle	1-2 (km)

Table 2

Changes in Interventions

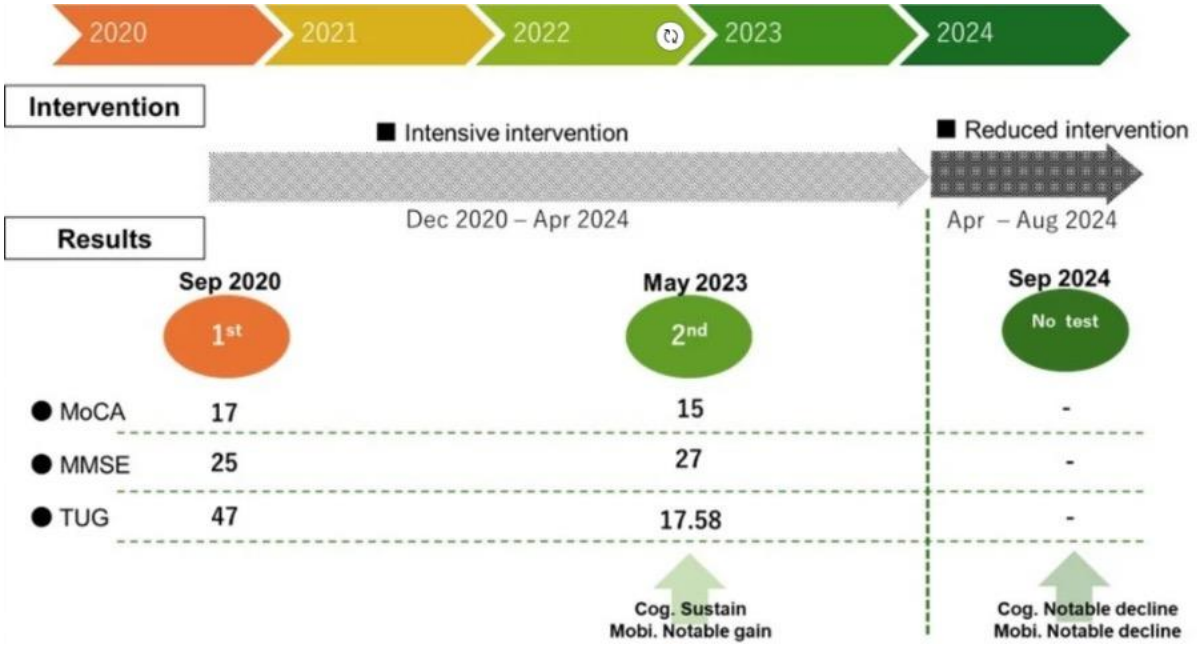
	Intensive Intervention Period	Reduced Intervention Period
Period	Dec 2020 – Apr 2024	Apr 2024 – Aug 2024
Year of assessment	Sep 2020/ May 2023	No test (mobility notable decline)
Strength training time	90 – 120 mins/day (5 days/wk.)	90 – 120 mins/day (2-3 days/wk.)
Cardio time (Cybercycle)	15 – 30 min/day (3 days/wk.)	15 min/day (0 – 1 days/wk.)
Other therapy	Karaoke 15-30 mins/day (5 days/wk.)	Music therapy (2 times/mo.)
		Brain stimulation by OT (2-3 days/wk.)

Source. Clinical data record

Result

The assessment in May 2023 showed improvement, with a TUG time of 17.6 seconds, an MMSE score of 27/30, and a MoCA score of 15/30. Remarkably, he was able to walk independently without a cane or wheelchair. However, six months later, he started to cut back on his exercise routine, reducing it to 2-3 days a week due to access to facilities was limited for several reasons, including inconvenient transportation to the facility. But he kept up with cognitive stimulation through occupational therapy twice a week. In the last assessment in November 2024, He struggles to walk on his own. The neurologist has increased his dosage of Madopar, but unfortunately, it hasn't been effective for him.

Figure 2
Timeline of Intervention and Results



Discussion

Exercise has been recognized as a potential adjunctive therapy for managing symptoms in DLB, though specific research is limited. A review by Inskip M. et al. highlights that exercise studies in Parkinson's disease and dementia often exclude DLB participants, resulting in a scarcity of evidence for this population. However, recent pilot studies suggest that exercise interventions can improve functional independence, cognition, and physical function in DLB patients (Inskip et al., 2016).

The Promoting Independence in Lewy Body Dementia through Exercise (PRIDE) trial showed that high-intensity progressive resistance training and balance exercises were not only well-received but also effective in enhancing functional independence and cognitive abilities in people with DLB. This research offers valuable insights into how exercise programs can be designed specifically for those dealing with DLB (Inskip et al., 2022). Patients engage in resistance exercise three times a week for a whole year. This routine can boost balance, strengthen muscles, reduce the risk of falls, and enhance mobility, tackling the parkinsonian symptoms often seen in DLB. Ultimately, it helps improve the overall quality of life for patients.

In this patient, there wasn't much decline in cognitive function. This is probably due to a combination of cognitive stimulation and exercise, as it was discovered that exercise has been linked to improved cognitive function in other neurodegenerative conditions (Du et al., 2018; Groot et al., 2016). This suggests potential benefits for DLB patients experiencing cognitive fluctuations and impairments.

Conclusion and Recommendation

Strengths of the Study

This case report provides a detailed, long-term observation of a patient with Dementia with Lewy Bodies (DLB), offering insights into symptom progression and the effects of combined pharmacological treatment, exercise, and cognitive stimulation. The multidisciplinary approach, including a specialized exercise program for older adults, highlights potential benefits in managing DLB. Use of standardized assessments like MMSE, MoCA, and the Timed Up and Go (TUG) test allows objective tracking of cognitive and physical functions. The report also reflects real-world challenges, such as reduced access to facilities affecting functional decline. By documenting improvements following consistent intervention, it supports growing evidence that exercise may benefit DLB patients. Importantly, this report addresses a gap in the literature by providing data on exercise in DLB, a group often excluded from larger dementia and Parkinson's studies, thus contributing valuable information for future research.

Limitations of the Study

There are several limitations to this case study. First, one sample of DLB patient limits the generalizability of the findings, as only a few DLB cases receive treatment at the institute. Consequently, the results may not be fully applicable to other DLB patients. Second, the absence of a control group makes it difficult to determine whether the observed improvements are due to the exercise intervention or other factors. Lastly, the lack of blinding may introduce detection bias, potentially leading to an overestimation of treatment effects.

Conclusion and Recommendation

Exercise shows great potential as a beneficial therapy for managing DLB symptoms. However, further research is needed to fully understand its benefits and the most effective implementation strategies. By addressing current challenges and bridging knowledge gaps, future studies can provide the solid evidence necessary to develop tailored exercise guidelines for DLB patients.

In the meantime, healthcare professionals should approach exercise interventions with caution, emphasizing personalized treatment plans, a multidisciplinary team approach, and ongoing evaluations to maximize benefits while prioritizing patient safety.

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References

Armstrong, M. J. (2021). Advances in dementia with Lewy bodies. *Therapeutic Advances in Neurological Disorders, 14.* https://doi.org/10.1177/17562864211057666

Capouch, S. D., Farlow, M. R., & Brosch, J. R. (2018). A review of dementia with Lewy bodies' impact, diagnostic criteria and treatment. *Neurology and Therapy, 7*(2), 249–263. https://doi.org/10.1007/s40120-018-0104-1

Chin, K. S., Teodorczuk, A., & Watson, R. (2019). Dementia with Lewy bodies: Challenges in the diagnosis and management. *The Australian and New Zealand Journal of Psychiatry, 53*(4), 291–303. https://doi.org/10.1177/0004867419835029

Dawley, C. (2015). *The use of Parkinson's disease specific rehabilitative interventions to treat a patient with Lewy body dementia: A case report (Case report paper No. 21).* University of New England. https://dune.une.edu/pt_studcrpaper/21

Dharmasaroja, P. A., Assanasen, J., Pongpakdee, S., Jaisin, K., Lolekha, P., Phanasathit, M., Cheewakriengkrai, L., Chotipanich, C., Witoonpanich, P., Pitiyarn, S., Lertwilaiwittaya, P., Dejthevaporn, C., Limwongse, C., & Phanthumchinda, K. (2021). Etiology of dementia in Thai patients. *Dementia and Geriatric Cognitive Disorders Extra, 11*(1), 64–70. https://doi.org/10.1159/000515676

Du, Z., Li, Y., Li, J., Zhou, C., Li, F., & Yang, X. (2018). Physical activity can improve cognition in patients with Alzheimer's disease: A systematic review and meta-analysis of randomized controlled trials. *Clinical Interventions in Aging, 13,* 1593–1603. https://doi.org/10.2147/CIA.S169565

Groot, C., Hooghiemstra, A. M., Raijmakers, P. G., van Berckel, B. N., Scheltens, P., Scherder, E. J., van der Flier, W. M., & Ossenkoppele, R. (2016). The effect of physical activity on cognitive function in patients with dementia: A meta-analysis of randomized control trials. *Ageing Research Reviews, 25,* 13–23. https://doi.org/10.1016/j.arr.2015.11.005

Inskip, M., Mavros, Y., Sachdev, P. S., & Fiatarone Singh, M. A. (2016). Exercise for individuals with Lewy body dementia: A systematic review. *PloS One, 11*(6), e0156520. https://doi.org/10.1371/journal.pone.0156520

Inskip, M. J., Mavros, Y., Sachdev, P. S., Hausdorff, J. M., Hillel, I., & Singh, M. A. F. (2022). Promoting independence in Lewy body dementia through exercise: The PRIDE study. *BMC Geriatrics, 22*(1), 650. https://doi.org/10.1186/s12877-022-03347-2

Lam, F. M., Huang, M. Z., Liao, L. R., Chung, R. C., Kwok, T. C., & Pang, M. Y. (2018). Physical exercise improves strength, balance, mobility, and endurance in people with cognitive impairment and dementia: A systematic review. *Journal of Physiotherapy, 64*(1), 4–15. https://doi.org/10.1016/j.jphys.2017.12.001

Li, X., Guo, R., Wei, Z., Jia, J., & Wei, C. (2019). Effectiveness of exercise programs on patients with dementia: A systematic review and meta-analysis of randomized controlled trials. *BioMed Research International, 2019,* 2308475. https://doi.org/10.1155/2019/2308475

McKeith, I. G., Boeve, B. F., Dickson, D. W., Halliday, G., Taylor, J. P., Weintraub, D., Aarsland, D., Galvin, J., Attems, J., Ballard, C. G., Bayston, A., Beach, T. G., Blanc, F., Bohnen, N., Bonanni, L., Bras, J., Brundin, P., Burn, D., Chen-Plotkin, A., … Kosaka, K. (2017). Diagnosis and management of dementia with Lewy bodies: Fourth consensus report of the DLB Consortium. *Neurology, 89*(1), 88- 100. https://doi.org/10.1212/WNL.0000000000004058

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Ageing in a Digitally Connected World: What Lived Experiences Tell Us About Digital Engagement?

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Abstract

Older adults are disproportionately affected by rapid technological advancements. In the UK, nearly 60% of the 11 million adults lacking essential digital skills are over 65 years old. This digital deficit significantly impacts their ability to access vital online services. The paper draws on written evidence submitted to the UK Parliament's inquiry into the Rights of Older People under "Digital Exclusion". We analysed submissions from older individuals, local authorities, age-related charities, training providers and experts, identifying key barriers to older adults' digital engagement. These barriers were categorised as either "pre-use" (before engaging with digital services) or "in-use" (during engagement). Our analysis revealed that financial limitations, lack of ability to engage, and the absence of alternative access methods and protective legislation were the most prominent "pre-use" challenges. Also, the pressure to participate online negatively impacts well-being, hindering initial engagement. "In-use" challenges primarily revolved around the need for basic digital skills training and confidence-building, coupled with website and app accessibility issues. While some of these challenges have been documented for nearly three decades, the strong emphasis on the need for alternatives to access services offers a new perspective on how to mitigate the negative effects of digital exclusion. We conclude by presenting the Innovation for Ageing Societies Toolkit that was created considering the pre- and in-use challenges to help designers and developers empathise with them, linking real stories with capability losses and design consequences.

Keywords: older adults, digital skills, disengagement, design toolkit, inclusive design

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Introduction

The benefits of being digitally connected are immense. Our experience during the COVID-19 pandemic lockdowns has shown us how technologies were pivotal in enabling work from home, conducting remote medical appointments, accessing diverse services, and keeping family and friends connected. However, not everybody is connected or digitally literate enough to carry on essential tasks. For many people in the United Kingdom (UK), the pandemic brought new digital needs, particularly to those who had never or had not recently used the internet, which, according to the Centre for Ageing Better, affected three million people who were offline in the UK at the beginning of the pandemic. Among them, a great proportion (32%) were people aged between 50 and 69, and the majority (above 65%) were aged 70 or over (Office for National Statistics, 2021).

Older adults have been pointed out as the group of people most impacted by technological changes. Older adults' use of digital resources is highlighted as problematic by the two populational representative surveys conducted recently in the UK by Lloyds Banking Group and Nuffield (Lloyds Banking Group, 2021; Yates et al., 2021). Being in the age group with the lowest engagement and digital skills affects how they use essential services provided online (Allmann & Blank, 2021).

Digital Skills Among Older Adults in the United Kingdom

The UK government (Gov.uk) introduced the Essential Digital Skills (EDS) framework in 2018 to assess the digital proficiency of people living in Britain. This framework is built upon the earlier Basic Digital Skills Framework from 2015. Much like other prominent digital skills studies (e.g., Hargittai et al., 2019; Helsper, 2015; van Dijk & van Deursen, 2014; van Deursen & Helsper, 2015) the EDS Framework uses a categorised structure to evaluate competence in specific online tasks. These categories are outlined below:

1. **Foundation skills**: this area assesses skills such as turning on devices; using various devices like computers, tablets, and smartphones; interacting with different input methods like keyboards, mouse, and touchscreens; adjusting accessibility settings; connecting to Wi-Fi; locating applications; navigating websites; creating, entering, and changing passwords; and understanding the need to protect passwords and personal data.
2. **Communicating**: this focuses on the ability to communicate using various online tools, including email, chat, messaging, voice, and video applications. It covers setting up email accounts, composing emails and attaching files, posting messages, images, and videos on social media, and understanding the importance of secure online communication.
3. **Handling information and content**: this evaluates awareness of and the ability to identify untrustworthy online information. It also measures skills in using different search engines, storing information online or using bookmarks for retrieval, and organising digital content.
4. **Transacting**: this measures the capacity to conduct online transactions, including purchasing goods and services, using public services, accessing banking services, completing online forms, and managing bank card details for online purchases.
5. **Problem Solving**: this assesses the use of online resources to find needed information, such as recipes, travel details, and instructional guides.

6. **Being safe and legal online**: this evaluates awareness of security measures for data protection, including password creation, use of two-factor authentication, and the use of antivirus software and other security tools.

The Lloyds Banking Group 2021 annual report utilised the EDS framework to assess the digital abilities of a representative sample of the British population. This research provides data to the UK government's Gov.uk website concerning the nation's digital skills, which helps inform the development of public policies and community programs. As illustrated in Figure 1, the survey categorizes the population into four groups: 1) the digitally excluded, comprising individuals lacking basic digital skills; 2) those at the foundation level, possessing the ability to complete simple, individual tasks; 3) individuals with life EDS, demonstrating skills in communication, information handling, online transactions, problem-solving, and online safety and legality; and 4) those with work EDS, who can meet the digital skill demands of their jobs.

Figure 1

Lloyds Banking Group Survey Application of the Framework on Essential Digital Skills for Life and Work

Source: Lloyds Banking Group (2021)

The survey (Lloyds Banking Group, 2021) revealed that, within the population over 65, nearly 48% have the Life EDS. The others, who **lack** essential digital skills for life, 51% are at the lowest level of digital inclusion (grey section), while 49% possess only foundational digital skills (purple section of the pyramid). The study also identifies other contributing factors to digital skills gaps, such as level of education, retirement status, living alone, and having a disability. Of the 11 million adults over 18 in the UK who **lack** essential digital skills for life, nearly 60% are 65 or older, and more than half (52%) live with at least one impairment. Among those who are retired, live alone, and have impairment, almost 70% lack even foundational digital skills (compared to 51% of all over-65s). It's estimated that 10 million UK residents lack foundational digital skills, and these individuals are primarily concentrated within three groups: 1) those aged 65 and over; 2) people with disabilities; and 3) those without formal qualifications.

Digital Exclusion of Older Adults Over the Years

Digital exclusion among older adults has been a topic very much explored for many years. More than two decades ago, Selwyn et al. (2003) analysed a sub-sample of 352 adults aged 60 or more from a larger household survey in England and Wales and found that computer use was not a common activity among older adults in their everyday lives. At that time, the use of information communication technologies (ICTs) among older adults was influenced by factors such as gender, age, marital status, and educational background. The authors state several intrinsic and extrinsic barriers that older adults faced at that time:

- Being afraid that they could break something or make mistakes
- Lacking skills and confidence to use ICTs
- Limited experience with technology in the past
- Unable to afford to buy a computer, software or internet access
- Lacking support to learn how to use ICTs
- Finding affordable training programs and being impacted by the negative stereotypes that technology was not for them.

The authors mentioned that although there were many challenges, for many older adults, ICTs were not *relevant* as they could carry on their lives without engaging online.

The scenario of adoption of ICTs among older adults has changed since Selwyn et al.'s study, and the role that familiarisation plays has become evident (Wilson et al., 2023; Garcia Reyes et al., 2023). Older adults who have used computers and other devices throughout their lives are likely to have an advantage over those whose pre-retirement work did not involve technology (Hanson, 2011). In general, the number of older people who are users of computers, tablets and smartphones has grown over the years (ONS, 2021; Statista, 2023). The proportion of those aged 75 years and over who are recent internet users nearly doubled since 2013, from 29% to 54% in 2020.

Also, what Selwyn et al. (2003) call "*low relevance*" has gradually changed during the last decades, with a significant change in the most recent years. If in 2003 older people in the UK could manage their lives perfectly well without being online, then now this is not possible anymore. Allmann et al. (2021) quite correctly call our society a "compulsory computing society" in which engaging online is not a choice anymore. In a more complete report, the authors provide details of the ethnographic study conducted among the digital helpers in the libraries of Oxfordshire for two years (Allmann et al., 2021). They present several examples of essential services that were only available online and the impact on people's lives. People were disadvantaged as they did not match two expectations of the "compulsory computing" society: 1) the idea that everyone has a smartphone, and 2) everybody has enough digital skills to use the online services.

In one of the cases presented by Allmann et al. (2021), a lady in her 60s could not access the council housing benefit as she did not have a combination of three essential skills for life (communicating, handling information and being safe online) that are highlighted in the green part of the pyramid (Figure 1). The combination of the three EDS was essential to be able to complete the local authority online form. Moreover, the lady did not have a smartphone, which stopped the process as she needed it for the authentication process. Her example contradicts the assumption that "everyone has a smartphone" and "enough skills to engage with digital services".

Although we understand that nearly 48% of the older adults in the UK are self-reported as digitally engaged and have at least one of the EDS for life (Lloyds Banking Group, 2021) accounting for those who are in the green part of the pyramid, we want to understand the barriers that are still stopping over 52% of the people 65+ to fully engage online. The lived experiences of older people, as well as people working with older adults, like charities, training services and age-related institutions, or those who offer services to them, like local authorities, as well as experts in the field, may offer a nuanced perspective of the challenges. This might direct efforts in fronts less explored by human-computer interaction and inclusive design research. In this way, we analysed the written evidence submitted to the digital exclusion inquiry as detailed in the next section.

Methods

This paper is part of an ongoing research project that explores the lived experiences of people aged 65 and over who live in the UK. It combines primary research conducted with older adults, through interviews and co-creation sessions, with available lived experiences presented in secondary research. This paper concentrates on the evidence submitted to the inquiry into the Rights of Older People under "Digital Exclusion", commissioned by the Women and Equalities Committee in the United Kingdom Parliament, which is part of the secondary research in the project. We mapped out what older people, local authorities, charities, training services, experts in the field, and age-related institutions highlighted as barriers to the digital engagement of older adults. The pieces of evidence submitted received an ID (ROP00) as presented in Table 1 and are available in the Women and Equalities Committee enquiry website (2024).

As the inquiry into the Rights of Older People had more than one topic, we analysed the 51 submissions and selected the 32 written evidence that were related to digital exclusion. We conducted a thematic analysis across all the documents submitted.

Thematic Analysis

Thematic analysis is a systematic method for identifying, analysing, and interpreting patterns or themes in qualitative data, generally collected through interviews, focus groups, surveys, and textual records. It can provide considerable insight into human behaviour and perceptions. This method often allows for interpreting complex social phenomena and lived experiences. Bruwn and Clarke (2021) describe thematic analysis as an "umbrella term" encompassing a diverse family of approaches, three of which are: 1) coding reliability thematic analysis, 2) reflexive thematic analysis, and 3) codebook thematic analysis. Each approach offers unique perspectives and techniques, enabling analysis for the specific study needs while maintaining methodological rigour.

This study employs reflexive thematic analysis, a theoretically flexible approach that emphasises the researcher's active role in interpreting the data. Reflexive thematic analysis is an iterative process whereby themes are developed and refined through continued engagement with data. This approach most closely aligns with the objectives of this study, as it allows nuanced exploration of the dataset while acknowledging the critical role of the researcher in shaping the analysis (Braun & Clarke, 2021).

This analysis aimed to describe themes, including their key characteristics and the meaning and importance attributed to them based on the collected evidence. It is grounded in inductive

phenomenology, which is based on an essentialist theoretical perspective following an experiential orientation to data (Byrne, 2022). Inductive reasoning was used to let themes naturally emerge from the diverse dataset, which included governmental reports, case studies, testimonials, and organisational evidence. This method ensured that the analysis stayed closely connected to the lived experiences and insights reflected in the data. The essentialist perspective was chosen to delve into the subjective meanings and narratives presented in the evidence, viewing them as genuine reflections of actual experiences. Additionally, the experiential approach aligns well with the essentialist one by focusing on practical and lived contexts of the issues raised in the analysed materials.

The thematic analysis was performed manually by two researchers using a Miro board. The thematic analysis followed the 6 phases Braun and Clarke (2012) described. These were:

- Familiarising with the data: After a careful review of all the evidence reported by older adults, local authorities, charities, and digital inclusion experts. The important data was highlighted.
- Generating initial codes: After performing systematic clustering of data related to recurring issues. Key quotes were coded to provide lived experiences that empirically support each identified category.
- Generating initial themes: Grouping related codes into broader themes of nature that would point out the relevant patterns.
- Reviewing themes: Scrutinising the codes and themes to ensure the data collected is accurate and relevant; eliminating redundancy and inconsistency.
- Refining, defining, and naming new themes: The theme's names appear brief but explicitly capture underlying data, such as "*Emotional pressures to using technology"*.
- Writing up: Thematic analysis is complemented by direct quotes and examples from the evidence to provide a clear understanding.

As the coding process was conducted by two researchers, they were able to review each other's codes, discuss similarities and differences in classification, until they reached a consensus. A third researcher helped to refine and name new themes. The results are presented below.

Results

The themes that emerged in the thematic analysis were divided into two main areas:

1. "Pre-use", referring to the most recurrent codes related to barriers and challenges that hinder older people from initiating any digital engagement.
2. "In-use", related to challenges faced when engaging digitally.

The themes emerged from a combination of related codes on documents based on research conducted by academic experts; others based on lived experiences of older people submitted directly by them to the UK Parliament inquiry, or through charities; others a collection of experiences from not-for-profit organizations dealing with diverse needs of older people and others from local authorities or commissioners working with local authorities dealing with issues related to digital engagement of older adults. All of them give a portrait of the digital landscape in the UK and the impact on older people's lives. Table 1 outlines the evidence reference (ID) related to each theme and the type of source based on who wrote and submitted it.

Theme 1: Issues Related to "Pre-use"

Among the "Pre-use" themes that emerged from data analysis, there were the impact on well-being that hinders older people to initiate digital engagement; costs related to afford a smartphone and broadband; disengagement from services, social activities and other opportunities; the need for alternatives and legislation in place that avoid exclusion. The several pieces of evidence submitted to the inquiry and associated with each theme can be seen in Table 1, and some examples are described below.

Theme 2: Emotional Pressures

This theme explores how digitally excluded people feel about technology and its usage. The codes associated with it are *Loss of confidence*, *Avoidance*, and *Threat from technology* (related to digital skills, but also the cost associated with it). Senior citizens feel threatened by the pressure to use mobile Apps. For example, the recent strategy to replace landline services has been a source of anxiety among some older people as they are losing access to traditional landline services. They mention the stress the digital demand brings in terms of feeling unprotected and the financial burden the additional costs of having a smartphone can represent.

> This isn't for my protection at all! The pressure that I am put under is immense! I've had it go wrong twice and it's quite a kerfuffle to put it right… 'Use our app' represents more like a threat that I avoid it like the plague. (older person - ROP0005)

> The withdrawal of landline services is a great concern (a plan to migrate all landlines to digital), leaving no choice but to use smartphones. (not-for-profit organisation - ROP0027)

> The information in this section has been taken from our Independent Age -September 2023 report on household costs, 'A constant struggle: The impact of high household costs on older people facing financial hardship', which highlighted the impact of the cost of broadband, and the knock-on costs people face if they can't afford to be online. (charity - ROP0042)

Theme 3: Access to Digital Services

This theme explores how a lack of foundational skills and digital devices creates barriers to digital onboarding and engagement. Two of the codes associated with it are *Inadequate digital skills* and *Digital gap*. The lack of skills to use services creates an immense digital gap between older adults and the opportunities available online, from healthcare-related, basic services to socialisation.

> Making an appointment with my GP surgery seems so complicated now, I don't like to try. (older adult experience submitted by a charity - ROP0054)

> The receptionist told me the procedure is to go online and complete a form. I don't have a computer. (older adult experience submitted by academic expert - ROP0011)

> There is currently a significant cohort who do not wish to or cannot (for various reasons) embrace technology. Sadly, life is becoming increasingly hard for the

> digitally excluded… Being unable to use technology has significant adverse effects… Reduced quality of life and wellbeing: for example, increased difficulty or impossibility accessing many services and support, from booking medical appointments, getting medicines and banking to supermarket home deliveries - useful for those with reduced mobility… reduced knowledge of local community opportunities, developments and issues. (older person - ROP0023)

Theme 4: Financial Constraints

This theme explores how economic constraints hinder access. to the necessary tools to initiate digital engagement. The codes associated with it are *Affordability* and *Economic trade-offs*. Unaffordable digital devices and broadband at home remain a critical challenge among older adults, leading to digital exclusion.

> I don't have broadband; I don't understand it, and I want to learn more about it. The cost is far too high and it's too much for what I want to use it for. Social tariffs would be something I'd be interested in if it was explained to me. (older adult experience submitted by a charity - ROP0042)

> If we became unable to pay our bills, we would have no choice but to cancel the least necessary service, i.e. broadband. (older adult experience submitted by a charity - ROP0042)

Theme 5: The Need for Alternatives

This theme focuses on creating a comfortable entry point by combining digital and traditional services. Codes like *Technology alternatives* and *Balanced approach* are associated with this theme. Alternatives are suggested to ensure accessibility for older individuals, prioritising in-person engagement alongside digital services. This means that technology could supplement human interactions. For example, the establishment of local banking hubs can offer alternative accessible formats of services, promoting a balanced approach that considers sensorial and cognitive demands and accessibility.

> To stop older people from being digitally excluded is to accept our wish for 'digital rejection' and make it illegal for companies, national and local Government organisations to try and force older people, and anyone with poor eyesight or arthritis in their hands, to use compulsory mobile phone apps. (older person - ROP0008)

> For older women, we become invisible...we become invisible when it comes to things that we need to keep us healthy, and that's why the fact that we're not able to do some of the online stuff feels unfair. (not-for-profit organization - ROP0010)

> Non-online contact options, especially for health services, banking, and utilities. (older person - ROP0040)

Theme 6: Change in Regulation

This theme proposes legal protection and policy initiatives focused on addressing digital poverty and exclusion. There were several codes associated with it, like *Policy solutions*, *National strategies*, *Public demands*, *Human Rights* and others. Several policies were

highlighted in the submissions to prevent digital exclusion through accessible design, offline access alternatives, and governmental coordination to ensure affordable and inclusive solutions. Legal protection against digital coercion, free internet, participatory design, and scam awareness were some of the topics highlighted in several evidence documents. They urged that new policies should be proposed effectively.

> Equality law needs to be strengthened to force companies and national and local government organisations to provide 'reasonable adjustments' to accommodate the needs of older people, as in theory, they have to for people with a disability, else they will attract a fine proportionate to their profit level. Then none of the above (referring to struggles to use public, banking and many other services) would have happened. (older person - ROP0008)

> Having my broadband is my only means of communication with the outside world via email, messages, phone, etc. I cut back on food and cut down on other bills to be able to afford my internet provider. (older adult experience submitted by a charity - ROP0042)

> Legislation to mandate offline platforms - banking, utilities, and key services are the areas for offline access that should be available still. (commissioner who works with local authority - ROP0026)

> Mandate industry to actively promote social tariffs to customers that are in low-income households, are facing financial difficulties or unable to regularly pay their bills on time. (group of not-for-profit organisations – ROP0049)

> It is a basic human right to access information in all its forms, whether that is by TV, radio, newspapers, receiving documentation, on the telephone or from a computer. Just as there is a basic human right to heat, light, water, and food, there must be a basic human right to access affordable and free digital services or non-digital alternatives. (not-for-profit organization - ROP0038)

Theme 7: Impact on Well-being

This theme refers to the effects of digital exclusion on senior citizens' health, feelings of loneliness and the need for support, especially for vulnerable older adults. Two of the codes related to it are *Digital Awareness* and *Social Exclusion.* It calls for recognition that many older adults require support; otherwise, the isolation, digital barriers, and service gaps they face can impact their health and well-being.

> Limited internet and technology skills and access to online healthcare information and remote medical services caused unmet needs, isolation, and loneliness. (not-for-profit organisations - ROP0041)

> Healthcare providers (should) ensure that older people living with HIV, who may face digital exclusion, have access to online services, removing accessibility and financial barriers. (not-for-profit organisations - ROP0051)

Hold Back Daily Lives

The last "pre-use" theme is crucial regarding building digital inclusion projects to support people facing barriers in an increasingly digital society. The codes linked to this theme are *Funding solutions, Inclusion, Training, Support* and *Wellbeing*. Many senior citizens in the UK are unable to adapt and complete tasks online. Sometimes, their inability to digitally engage is connected to several intersectional factors, including impairments and disabilities. Their struggles demonstrate the need for comprehensive solutions to ensure their inclusion and well-being in this growing digital society.

> They make no allowances for disabilities...there is no sympathy or empathy anymore as well as lack of respect. (older person - ROP0009)

> Age is strongly associated with digital exclusion, and millions of older people are excluded or limited in how they engage online. One in three people aged 65 or over either do not have, or do not use, the internet at home - approximately 3.2 million people in England. It is important to note that older people from Black, Asian and Minority Ethnic (BAME) communities have the lowest level of digital usage. (not-for-profit organization - ROP0046)

> Provide financial support to councils for digital inclusion initiatives. (group of local authorities ROP0034)

> Funding community-based projects for device support, staff training, and connectivity. (not-for-profit organisations - ROP0044)

Table 1

The Written Evidence Related to the Seven "Pre-use" Themes

Themes	Evidence ID	Written and submitted by	Evidence source
Theme 1	ROP0032	Dr. Sarah Lonbay, Dr Karen Atkinson, and Carrie Phillips (University of Sunderland), Dr Alisoun Milne (University of Kent), Dr Carole Southall (Northumbria University), Dr Maria Wolmesjö (University of Borås, Sweden), and Bridget Penhale (University of East Anglia)	Academic Experts
	ROP0042	Independent Age	Charity
	ROP0005	P E Stevens	Older Person
	ROP0027	Flourishing Lives	Not-for-profit Organisation
Theme 2	ROP0054	Age UK	Charity
	ROP0020	Dr. Efpraxia D. Zamani, Associate Professor of Information Systems at Durham University Business School	Academic expert
	ROP0023	Maggy Pigott CBE FRSA	Older person
	ROP0038	The National Pensioners' Convention	Not-for-profit Organisation
	ROP0011	Dr Emilene Zitkus, Loughborough University	Academic Expert
	ROP0015	Dr Robin A Hadley	Older person
	ROP0028	Ms Geraldine Nosowska (Director at Effective Practice), Dr Denise Tanner (Associate Professor at University of Birmingham), and Dr Paul Willis (Associate Professor at University of Bristol)	Academic Experts

	ROP0029	Aberystwyth University and Swansea University	Academic Experts
	ROP0046	Centre for Ageing Better	Not-for-profit Organisation
	ROP0047	Hourglass (Safer Ageing)	Not-for-profit Organisation
	ROP0049	Greater Manchester Ageing Hub	Group of Organisations
	ROP0034	The Local Government Association (LGA)	Group of Local Authorities
	ROP0044	Wakefield Social Digital Inclusion (WSDI) Group	Not-for-profit Organisation
	ROP0041	leader in the end-of-life experience in the UK at Marie Curie	Not-for-profit Organisation
	ROP0042	Independent Age	Charity
Theme 3	ROP0032	Sarah Lonbay, Dr Karen Atkinson and Carrie Phillips (University of Sunderland), Dr Alisoun Milne (University of Kent), Dr Carole Southall (Northumbria University), Dr Maria Wolmesjo (University of Boras, Sweden) and Bridget Penhale (University of East Anglia)	Academic Experts
	ROP0040	Name Withheld	Older Person
	ROP0042	Independent Age	Charity
Theme 4	ROP0008	Hilary Leighter	Older Person
	ROP0010	The Scottish Women's Convention (SWC)	Not-for-profit Organisation
	ROP0011	Dr Emilene Zitkus, Loughborough University	Academic Expert
	ROP0020	Dr. Efpraxia D. Zamani, Associate Professor of Information Systems at Durham University Business School and Dr Paul Willis (Associate Professor at University of Bristol)	Academic Experts
	ROP0028	Ms Geraldine Nosowska (Director at Effective Practice), Dr Denise Tanner (Associate Professor at University of Birmingham),	Academic Experts
	ROP0015	Dr Robin A Hadley	Older Person
	ROP0026	Older People's Commissioner for Wales	Work with Local Authorities
	ROP0029	Aberystwyth University and Swansea University	Academic Experts
	ROP0038	The National Pensioners' Convention	Not-for-profit Organisation
	ROP0040	Name Withheld	Older Person
	ROP0046	Centre for Ageing Better	Not-for-profit Organisation
	ROP0041	Marie Curie	Not-for-profit Organisation
	ROP0044	Wakefield Social Digital Inclusion (WSDI) Group	Not-for-profit Organisation
	ROP0049	Greater Manchester Ageing Hub	Group of Organisation
	ROP0054	Age UK	Charity
	ROP0056	Equality and Human Rights Commission	Work with Government
Theme 5	ROP0008	Hilary Leighter	Older Person
	ROP0015	Dr Robin A Hadley	Older Person

	ROP0026	Older People's Commissioner for Wales	Working with Local Authorities
	ROP0034	The Local Government Association (LGA)	Group of Local Authorities
	ROP0036	British Geriatrics Society	Not-for-profit Organizations
	ROP0038	The National Pensioners' Convention	Not-for-profit Organizations
	ROP0041	Marie Curie	Not-for-profit Organization
	ROP0049	Greater Manchester Ageing Hub	Group of Organisations
	ROP0011	Dr Emilene Zitkus, Loughborough University	Academic Expert
	ROP0020	Written evidence submitted by Dr. Efpraxia D. Zamani, Associate Professor of Information Systems at Durham University Business School	Academic Experts
	ROP0023	Maggy Pigott CBE FRSA	Older Person
	ROP0042	Independent Age	Charity
	ROP0029	Aberystwyth University and Swansea University	Academic Experts
	ROP0058	The London Age-Friendly Forum	Group of Organisations
Theme 6	ROP0029	Aberystwyth University and Swansea University	Academic Experts
	ROP0047	Hourglass (Safer Ageing)	Not-for-profit Organisation
	ROP0051	National AIDS Trust	Not-for-profit Organisation
	ROP0034	The Local Government Association (LGA)	Group of Local Authorities
	ROP0023	Maggy Pigott CBE FRSA	Older Person
	ROP0041	Marie Curie	Not-for-profit Organisation
Theme 7	ROP0041	Marie Curie	Not-for-profit Organisation
	ROP0040	Name Withheld	Older Person
	ROP0034	The Local Government Association (LGA)	Group of Local Authorities
	ROP0044	Wakefield Social Digital Inclusion (WSDI) Group	Not-for-profit Organisation
	ROP0054	Age UK	Charity
	ROP0008	Hilary Leighter	Older Person
	ROP0009	Name Witheld	Older Person
	ROP0010	The Scottish Women's Convention (SWC)	Group of Organisations
	ROP0026	Older People's Commissioner for Wales	Work with Local Authority
	ROP0049	Greater Manchester Ageing Hub	Group of Organisations
	ROP0012	55/Redefined	Company
	ROP0023	Maggy Pigott CBE FRSA	Older Person
	ROP0035	Leadership for Today (L4T) Ltd	Company
	ROP0046	Centre for Ageing Better	Not-for-profit Organisations

Issues Related to "In-Use"

Among the "in-use" themes, the following were the most recurrent in the evidence submitted (see Table 2).

Theme 1: Building Confidence

This theme is related to developing a confident approach to digital services, emphasising the benefits that digital technologies can bring to daily life. Some codes related to it are *Empathy-driven solutions* and *Enhanced Quality of Life*. Among crucial points to build confidence among older adults are the design of accessible and safe services based on their actual needs, development ot user-friendly health technologies, and a constant emphasis on the benefits of online resources and activities to enhance quality of life.

> You've got to be careful with technology - that it's a false sense of security. (older person - ROP0015)

> All levels of government provide support for people to get online – whether through improving their digital skills or the provision of social tariffs for broadband… Age is strongly associated with digital exclusion, and millions of older people are excluded or limited in how they engage online. One in three people aged 65 or over either do not have, or do not use, the internet at home - approximately 3.2 million people in England. (not-for-profit organisation - ROP0046)

Theme 2: Training Programs and Facilities

This theme is related to the essential measures and support programs to develop skills and provide services that enable comfortable navigation in the digital world. Two of the codes associated with it are *Staff training* and *Senior-citizen training*. There is a need for buddy schemes, like digital helper programs that were available in public libraries; training on digital skills and safety online, providing trustworthy and dignified support for digital engagement.

> I would be anxious to know, to learn how to use the Google map to start with or something like that. Or some of the apps, common apps. But there's no one to teach me as such. (older adult experience submitted by academic expert - ROP0011)

> Develop and deliver digital training for older adults, in age-friendly environments. Training should focus on developing skills and confidence, as well as online access. Promote the support that is available already as it may be that older adults are not aware of what is available. Promote opportunities for inter-generational collaboration on the sharing of digital skills and knowledge. (academic expert - ROP0050)

Theme 3: Accessibility Regulations

According to several pieces of evidence submitted, there is a need for regulations on accessibility barriers, financial constraints, poor infrastructure, and the shift of essential services online, worsening the conditions for older adults. The codes related to it were *Lack of Alternatives*, *Usability* and *Accessibility*. High-priority services like healthcare, banking, and utilities need to have accessibility regulations considering the cognitive and physical

disabilities of older population. Many older people have a digital device but are unable to use it well due to the lack of consideration for accessibility features. Thoughtful digital design decisions are needed.

> Poorly designed websites: Small fonts which become hard to see. The poor colour contrast of the text and background making it hard to read. Logouts on websites for users with slower movements can be time-consuming and frustrating. (commissioner who works with local authority - ROP0026)

Table 2

The Written Evidence Related to the Three "In-Use" Themes

Themes	Evidence ID	Written and submitted by	Evidence source
Theme 1	ROP0015	Dr Robin A Hadley	Older Person
	ROP0023	Maggy Pigott CBE FRSA	Older Person
	ROP0046	Centre for Ageing Better	Not-for-profit Organisation
	ROP0027	Flourishing Lives	Not-for-profit Organisation
	ROP0020	Dr. Efpraxia D. Zamani, Associate Professor of Information Systems at Durham University Business School	Academic Expert
Theme 2	ROP0050	Faculty of Public Health	Academic Expert
	ROP0011	Dr Emilene Zitkus, Loughborough University	Academic Expert
	ROP0010	The Scottish Women's Convention (SWC)	Not-for-profit Organisation
	ROP0029	Aberystwyth University and Swansea University	Academic Expert
	ROP0032	Dr. Sarah Lonbay, Dr Karen Atkinson, and Carrie Phillips (University of Sunderland), Dr Alisoun Milne (University of Kent), Dr Carole Southall (Northumbria University), Dr Maria Wolmesjö (University of Borås, Sweden), and Bridget Penhale (University of East Anglia)	Academic Expert
	ROP0035	Leadership for Today (L4T) Ltd	Company
	ROP0044	Wakefield Social Digital Inclusion (WSDI) Group	Not-for-profit Organisation
	ROP0045	Anchor	Not-for-profit Organisation
	ROP0015	Dr Robin A Hadley	Older Person
	ROP0012	55/Redefined	company
	ROP0020	Dr. Efpraxia D. Zamani, Associate Professor of Information Systems at Durham University Business School	Academic Expert
	ROP0043	Name Withheld	Older Person
	ROP0040	Independent Age	Charity
	ROP0047	Hourglass (Safer Ageing)	Not-for-profit Organisation
Theme 3	ROP0056	Equality and Human Rights Commission	Work with Government
	ROP0026	Older People's Commissioner for Wales	Work with Local Authority
	ROP0040	Name Withheld	Older Person

Discussion

The results described above highlighted two stages for digital engagement that require attention to ensure inclusive societies: the "pre-use" and the "in-use".

First, in the "pre-use", the emerging themes highlighted challenges that disengage older adults before starting any online service. The examples range from 1) the high costs of digital devices and broadband to 2) the exclusion caused by the inability to use essential services (e.g. healthcare-related) or the missed social activities and other opportunities. Both can be sources of stress, negatively impacting their health and well-being. Additionally, both lead to the need for alternatives and legislation in place that avoids exclusion.

Second, in the "in-use" stage, the themes emerged, highlighting barriers that people over 65 face when using online services that limit or even stop them from engaging further. Several written evidence presented examples of such challenges across their communities, whether they cannot find digital training or struggle to navigate poorly designed interfaces.

The outcomes of the analysis of the evidence submitted by older people, academic experts, charities, not-for-profit organizations, local authorities and companies reinforces some of the needs that were described more than 20 years ago by many authors investigating digital skills and online engagement since then (e.g. Choudrie et al., 2010; Garcia et al., 2023; Hanson, 2011; Hargittai et al., 2019; Helsper, 2015; Selwyn et al., 2003; van Dijk & van Deursen, 2014; van Deursen & Helsper, 2015; Wilson et al., 2023, among others). Among them is the fact that many older people lack digital skills and confidence. Also, the high costs of devices and internet access, as well as the lack of training and support to learn how to use ICTs, are still evident among the experiences analysed.

Although the written evidence reinforces old challenges, there are interesting points highlighted by them that open fronts for considerations by human-computer interaction and user-experience design communities. For example, when Selwyn et al. (2003) conducted a study, some older adults did not see the relevance of ICTs in their daily lives. They could manage their lives perfectly well without them. Now it is different, we live in a compulsory computing society, a much more connected society than 20 years ago, in which essential services, like public and healthcare, are offered online and, in some cases, online only. This continuous need for digital engagement can cause distress, exclusion from services and even social isolation. All of them can negatively impact the health and well-being of older adults. *This link between health, well-being and digital engagement is something not much explored in literature that deserves attention.*

Also, it is interesting to find that the written evidence highlights the intersectional factors of being excluded from or having limited access to digital services. Older adults' low-income impacts access to devices and broadband. The evidence confirms the cases highlighted in the Oxfordshire Digital Inclusion Project Report (Allmann et al., 2021), in which people who did not have smartphones and broadband at home were unable to access services only available online. They might represent the issues found by a great proportion of the 52% of people aged 65 and over who do not have life EDS and who are at the bottom of the pyramid (Lloyds Banking Group, 2021). Nevertheless, the outcomes highlight other factors, like disability impacting access, as well as impairments such as vision and dexterity playing against digital engagement. Also, ethnically diverse older people have the lowest level of

digital usage. *The intersectional factors impacting digital engagement must be further explored and alternatives must be thought of to accommodate diversity.*

The complexity of the tasks associated with engaging online can be a barrier. Therefore, the need for alternatives so much highlighted in the submitted evidence is a sign that other ways to access services must be in place. We may need to consider new alternatives, ranging from exclusively non-digital interfaces to the lowest possible level of interaction.

Non-inclusive Interfaces

Another old challenge highlighted in the pieces of evidence was related to the accessibility of the digital interface. People within the excluded population have a range of different problems, physical, sensorial and cognitive capabilities, skills, past experiences, needs and opinions well stated in all the evidence presented in Table 2 under Theme 3 and in Table 1 under Theme 4.

To make informed design decisions one needs to see beyond the typical misguided perspective that people are either disabled or fully able. The challenge is to enable creators of new interactions to incorporate inclusive design elements addressing accessibility and usability effectively as well as considering potential offline alternatives.

Innovation for Ageing Societies Toolkit

To support designers and developers in designing for inclusivity, we have started the development of an innovation for ageing societies toolkit, based on the initial findings of our ongoing research project. The toolkit was created considering the "pre-use" and "in-use" challenges to help designers and developers empathise with older adults' needs. It is a collection of cards that combines real stories with capability losses and design consequences. Figure 2 presents some of the cards created for the toolkit.

Figure 2

Innovation for Ageing Societies Toolkit: Some Cards Linking Case Studies With Losses of Capability and How Design Can Enhance Interactions

The cards present a range of capabilities that might change as we age. It addresses vision, hearing, dexterity, cognition and mobility. It notes that older adults may experience a reduced ability to see fine details, distinguish between light and dark, and differentiate colours. Similarly, ageing can affect the ability to locate sounds and can cause hearing loss. Moreover, grip, hand strength, precision, and joint mobility are some of the big dexterity challenges we may face as we age. Additionally, issues such as memory loss, reaction time, information processing speed and complexity of tasks are some of the cognitive problems that can slow daily activities of older adults. They are all considered in the cards, with examples of design features that can be used to address such problems.

As stated by Hanson (2011), the design plays a critical role in engaging users. In the case of older adults, the consideration of the needs and abilities of a wide range of older users can help to mitigate the challenges associated with age-related changes. The toolkit is unique as it uses older people's stories to build empathy, whilst demonstrating how creators can use inclusive design principles to develop products that are more satisfying, accessible, and reach a wider audience.

Recommendations for Future Research

As technology continues to advance, it will be important to identify and address the challenges that older adults face. We highlighted the connection of digital engagement to health and well-being, as well as the impact that intersectional factors might have in excluding the most vulnerable older adults. In-depth research to further understand them and how lived experiences keep older people digitally engaged or disengaged is still necessary.

Conclusion

In analysing the 51 pieces of written evidence submitted to the inquiry into the Rights of Older People concerning “Digital Exclusion” in the United Kingdom Parliament, we gained a nuanced understanding of the challenges faced by older adults in today's “compulsory computing society”. The lived experiences shared by older adults, charities, not-for-profit organisations, academic experts, local authorities, and companies illuminate the reasons why over 52% of individuals aged 65 and older in the UK struggle to engage fully online.

Among the findings, two particularly stood out:

1) Unlike the past, when people could manage their lives without being online, today’s society places continuous pressure on individuals to engage digitally. This can lead to distress, exclusion from essential services, and even social isolation, all of which negatively impact the health and well-being of older adults.
2) The evidence indicates that factors such as low income, disability, impairment, and ethnicity affect how individuals engage with digital services. Although these factors are often discussed separately, their intersection suggests that the more of these issues older adults face, the more dependent on others they will be to use digital services. *This insight could guide further exploration in the fields of human-computer interaction and inclusive design research.*

These findings, along with other outcomes related to costs of smartphones and broadband services, as well as the lack of support and training, highlight the need for alternatives, such as offline and in-person services, and improved interaction design. There is also a need for legislation to prevent exclusion.

While we recognise the structural issues that policymakers must address, we believe that accessibility and inclusive design information, as well as case studies, can build empathy and enhance design practices. Therefore, we conclude by presenting a toolkit we have developed to assist designers and developers in innovating for ageing societies.

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References

Allmann, K., & Blank, G. (2021). Rethinking digital skills in the era of compulsory computing: Methods, measurement, policy and theory. *Information, Communication & Society*, *24*(5), 633–648. https://doi.org/10.1080/1369118X.2021.1874475

Allmann, K., Blank, G., & Wong, A. (2021). *Libraries on the front lines of the digital divide: The Oxfordshire Digital Inclusion Project Report*. Centre for Socio-Legal Studies, University of Oxford. https://www.law.ox.ac.uk/research-and-subject-groups/oxfordshire-digital-inclusion-project

Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57–71). American Psychological Association. https://doi.org/10.1037/13620-004

Braun, V., & Clarke, V. (2021). *Thematic analysis: A practical guide*. Sage.

Byrne, D. (2022). A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Qualitative and Quantitative*, *56*, 1391–1412. https://doi.org/10.1007/s11135-021-01182-y

Choudrie, J., Grey, S., & Tsitsianis, N. (2010). Evaluating the digital divide: The silver surfer's perspective. *Electronic Government, an International Journal*, *7*(2), 148–167.

Garcia Reyes, E., Kelly, R., Buchanan, G., & Waycott, J. (2023). Understanding older adults' experiences with technologies for health self-management: Interview study. *JMIR Aging*, *6*(1), e43197. https://doi.org/10.2196/43197

Gov.uk. (n.d.). *Essential Digital Skills Framework*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/738922/Essential_digital_skills_framework.pdf

Hanson, V. L. (2011). Technology skill and age: What will be the same 20 years from now? *Universal Access in the Information Society*, *10*, 443–452. https://doi.org/10.1007/s10209-011-0224-1

Hargittai, E., Piper, A. M., & Morris, M. R. (2019). From internet access to internet skills: Digital inequality among older adults. *Universal Access in the Information Society*, *18*, 881–890. https://doi.org/10.1007/s10209-018-0617-5

Helsper, E. (2015). Inequalities in digital literacy: Definitions, measurements, explanations and policy implications. In Brazilian Internet Steering Committee (Ed.), *Pesquisa sobre o uso das tecnologias de informação e comunicação nos domicílios brasileiros: TIC domicílios 2015 survey on the use of information and communication technologies in Brazilian households* (pp. 175–185). Comitê Gestor da Internet no Brasil.

Lloyds Banking Group. (2021). *Lloyds Essential Digital Skills Report 2021: Third edition – Benchmarking the essential digital skills of the UK*.

Office for National Statistics (ONS). (2021). *Internet users, UK 2021*. Retrieved from https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/datasets/internetusers

Selwyn, N., Gorard, S., Furlong, J., & Madden, L. (2003). Older adults' use of information and communications technology in everyday life. *Ageing and Society*, *23*(5), 561–582. https://doi.org/10.1017/S0144686X03001302

Statista. (2023). *Adult internet usage penetration in the United States from 2000 to 2023, by age group*. Retrieved from https://www.statista.com/statistics/184389/adult-internet-users-in-the-us-by-age-since-2000/

van Deursen, A. J., & Helsper, E. J. (2015). A nuanced understanding of Internet use and non-use among the elderly. *European Journal of Communication*, *30*(2), 171–187. https://doi.org/10.1177/0267323115578059

van Dijk, J., & van Deursen, A. (2014). *Digital skills: Unlocking the information society*. Palgrave Macmillan US. https://doi.org/10.1057/9781137437037

Wilson, G., Gates, J. R., Vijaykumar, S., & Morgan, D. J. (2023). Understanding older adults' use of social technology and the factors influencing use. *Ageing and Society*, *43*(1), 222–245. https://doi.org/10.1017/S0144686X21000490

Women and Equalities Committee. (2024). *Written evidence: Inquiry into the rights of older people*. UK Parliament. https://committees.parliament.uk/work/7930/the-rights-of-older-people/publications/written-evidence/?page=1

Yates, S. J., Carmi, E., Lockley, E., Wessels, B., & Pawluczuk, A. (2021). *Me and my big data: Understanding citizens data literacies research report*. Nuffield Foundation: Developing Citizen's Data Literacy.

Stress as a Strategic Resource in Late Adulthood: Introducing the STRIVE Model for Psychological Resilience

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Abstract

Although aging often leads to physical and emotional vulnerability, emerging scientific evidence suggests that stress can be a catalyst for resilience rather than decline. This article presents the STRIVE (Stress Transformation and Resilience through Intentional Values-based Empowerment) model, an integrative system designed specifically for older adults. Combining principles from cognitive behavioral therapy, narrative psychology, positive psychology, and neuroplasticity research, STRIVE views stress not as a threat but as a biopsychosocial signal. Core components of the model include triadic adaptation (body-mind-spirit alignment through biofeedback, cognitive reframing, and values clarification), resilience narratives (re-writing life stories to emphasize their adaptive power), intergenerational scaffolding (intergenerational peer mentoring), volitional flexibility (cognitive pivot training), and empowerment through legacy (channeling stress into meaningful, long-term contributions). The model utilizes both high-tech tools, such as wearable biofeedback devices and gamified applications, and low-tech, community-based approaches for accessibility. Drawing on cutting-edge theories such as polyvagal theory, social-emotional selectivity theory, and post-traumatic growth, STRIVE offers a holistic pathway for turning stress into a force for conscious evolution in later life.

Keywords: stress resilience, cognitive-behavioral therapy, aging, neuroplasticity, legacy building

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Introduction

As populations around the world age, the question of how to maintain psychological well-being and resilience in late life has become increasingly relevant. While aging is often viewed in terms of decline and loss of former strength and capabilities, a growing body of research in psychology, neuroscience, and gerontology suggests that later adulthood also holds unique potential for growth, meaning-making, and adaptive transformation (Carstensen, 2006; Park & Bischof, 2013). Specifically, stress, which is typically viewed as a harmful or destructive force, can, under certain conditions, serve as a strategic resource for developing resilience, creativity, and legacy building in older adults.

The issue of transforming stress into a strategic resource has become particularly relevant in light of recent global events. The COVID-19 pandemic, geopolitical instability, and economic uncertainty have had an extraordinary impact on older adults, intensifying experiences of chronic stress, isolation, and loss of agency (Armitage & Nellums, 2020). At the same time, rising life expectancy has extended the length of late adulthood, creating both new challenges and unprecedented opportunities for second-wave flourishing (Kleiber & Linde, 2014). As demographic trends predict a dramatic rise in the number of adults over 65 in both developed and developing countries (UN, 2023), the need for culturally sensitive, scalable, and evidence-informed ways to support this group of people becomes apparent.

The current study presents a novel integrative model, STRIVE (Stress Transformation and Resilience through Intentional Values-based Empowerment), to change the perception of stress as a biopsychosocial signal rather than a threat, and to implement resilience interventions specifically designed for people in late life. Drawing upon evidence-based approaches from cognitive-behavioral therapy (CBT), narrative psychology, acceptance and commitment therapy (ACT), positive psychology, and recent findings in neuroplasticity and aging, the STRIVE model offers a structured yet flexible pathway to support older adults in transforming stress into fuel for personal and generational empowerment.

The model consists of six interrelated components – Stress as Signal, Triadic Adaptation, Resilience Narratives, Intergenerational Scaffolding, Volitional Flexibility, and Empowerment Through Legacy – each addressing a specific aspect of the psychological and social challenges associated with aging. STRIVE also emphasizes cultural adaptability, technological accessibility, and cross-network scalability, making it suitable for both clinical and community applications.

STRIVE also emphasizes cultural adaptability, technological accessibility, and cross-setting scalability, making it suitable for both clinical and community-based applications.

The purpose of this article is to (1) present the conceptual foundations and structure of the STRIVE model; (2) explore its potential applications in diverse aging-related contexts; and (3) outline a roadmap for empirical validation. In doing so, we aim to contribute to the development of integrative approaches to mental health and resilience in late adulthood.

Model Overview: Conceptual Foundations of STRIVE

The acronym STRIVE stands for Stress Transformation and Resilience through Intentional Values-based Empowerment. The term “strive” itself – meaning to exert effort in pursuit of something meaningful – encapsulates the core philosophy of the model: not the avoidance or

suppression of stress, but the intentional and values-driven engagement with it as a potential catalyst for growth, wisdom, and purpose.

The STRIVE model was developed as a response to the unique psychological challenges and opportunities of late adulthood, where stress often intersects with issues of health decline, identity shifts, social loss, and existential questioning. Rather than viewing these stressors as threats to be minimized, STRIVE reframes them as biopsychosocial signals – invitations to deepen self-understanding, expand adaptive capacities, and foster meaningful legacy.

This integrative framework draws upon principles from cognitive-behavioral therapy (CBT), narrative psychology, acceptance and commitment therapy (ACT), and positive psychology, alongside insights from neuroplasticity research, polyvagal theory, and theories of aging and generativity.

Each component of the model addresses a distinct but interrelated dimension of adaptive functioning in older adults – including physiological regulation, cognitive reframing, life story integration, intergenerational dialogue, psychological flexibility, and legacy building. Together, they form a coherent system for transforming stress from a source of vulnerability into a strategic resource for resilience, contribution, and self-transcendence.

Stress as Signal

In the STRIVE framework, the first and foundational component – Stress as Signal – reconceptualizes stress not as pathology but as adaptive communication. This shift is rooted in the neurovisceral integration model (Thayer et al., 2009), which emphasizes the bidirectional relationship between the central autonomic network and emotional regulation. Rather than suppress physiological stress responses, older adults are taught to recognize these cues – such as elevated heart rate or muscle tension – as bio-intelligent feedback. Psychoeducational sessions introduce the concept of stress literacy, encouraging clients to monitor bodily cues using HRV-monitoring wearables or analog self-tracking. This aligns with Lazarus and Folkman's (1984) transactional model of stress and coping, where appraisal, not stimulus intensity, determines adaptive potential. By rebranding stress as a signal, STRIVE creates the cognitive and emotional space necessary for more empowered and values-aligned responses.

Triadic Adaptation

This component of STRIVE reflects a systemic approach to resilience-building by synchronizing interventions across the somatic, cognitive, and existential domains. Physiologically, it utilizes biofeedback training – particularly heart rate variability (HRV) – as an entry point for autonomic self-regulation. This approach is grounded in polyvagal theory (Porges, 2011), which posits that vagal tone modulates social engagement and stress responsiveness. Cognitively, it incorporates cognitive restructuring and cognitive defusion, encouraging flexible reinterpretation of stressors as growth opportunities. Spiritually, participants engage in values clarification, a core process in Acceptance and Commitment Therapy (Hayes et al., 2006), fostering alignment between stress and meaningful action. By integrating these three dimensions, Triadic Adaptation promotes not only symptom relief but also enhanced coherence and psychological agency in late adulthood.

Resilience Narratives

The "Resilience Narratives" component of STRIVE leverages the reconstructive power of autobiographical storytelling to promote meaning-making and psychological integration. Building on narrative identity theory (McAdams, 2001), participants are supported in reframing past adversities as turning points of growth. This process aligns with post-traumatic growth (PTG) theory (Tedeschi & Calhoun, 2004), which posits that trauma can catalyze new perspectives, personal strength, and deeper appreciation of life. Structured interventions include digital storytelling (e.g., audio journals, video diaries), group discussions, and intergenerational narrative exchanges. In addition to enhancing cognitive coherence and emotion regulation, Resilience Narratives foster social connection, self-efficacy, and legacy creation – essential factors in healthy aging. This narrative re-authoring supports identity continuity while inviting reinterpretation of stress as a source of enduring value.

Intergenerational Scaffolding

This component of STRIVE is designed to counteract social isolation and age-based marginalization by fostering reciprocal mentorship between older and younger adults. Rooted in Socioemotional Selectivity Theory (Carstensen, 2006), this component acknowledges that emotional salience and generative purpose become primary motivators in late life. Structured interventions include digital storytelling partnerships, "Tech & Wisdom Exchanges," and co-led community projects. Older adults contribute emotional regulation strategies, resilience narratives, and life wisdom, while younger participants offer digital fluency, cultural trends, and energizing perspectives. This mutual exchange enhances psychological resilience, promotes role continuity, and strengthens social identity. Beyond therapeutic benefit, Intergenerational Scaffolding fosters cultural transmission and helps dismantle ageist narratives – aligning with gerontological models of successful aging.

Volitional Flexibility

The "Volitional Flexibility" component in the STRIVE model refers to the intentional cultivation of cognitive and emotional agility in the context of stress. This component integrates principles from cognitive-behavioral therapy (CBT), Acceptance and Commitment Therapy (ACT), and contemporary neuroplasticity research. Participants engage in structured cognitive "pivoting" exercises that challenge habitual negative appraisals and promote adaptive reinterpretation (e.g., reframing threat as challenge). The use of gamified platforms reinforces neurocognitive retraining by providing real-time feedback, rewards, and social encouragement. This approach counters age-related stereotypes about mental rigidity and leverages the brain's enduring capacity for change (Park & Bischof, 2013). By repeatedly practicing reframing in safe, engaging contexts, older adults develop greater psychological flexibility, emotional self-efficacy, and resilience in real-world stress encounters.

Empowerment Through Legacy

This component represents the culminating phase of the STRIVE model, where stress is reframed as a driver for meaning-making and contribution. Anchored in generativity theory (Erikson, 1950) and terror management theory (Greenberg et al., 1997), this component invites participants to engage in acts of symbolic immortality – from memoir writing and creative expression to mentoring, ritual creation, and cultural storytelling. The process

acknowledges that legacy is not solely material or familial, but also spiritual and narrative, tied to one's values, beliefs, and sense of interconnectedness. Activities such as "Legacy Labs," wisdom-sharing circles, or community storytelling projects help older adults reclaim agency over their narrative and construct a purposeful frame around life's adversities. This not only fosters psychological well-being, but reinforces continuity of identity, dignity, and cultural belonging – essential dimensions of healthy aging.

Implementation and Practical Applications

The STRIVE model is designed not only as a conceptual framework but also as a flexible, action-oriented system adaptable to diverse real-world contexts. Its strength lies in its modular structure and multimodal delivery formats, which allow for tailored implementation in both clinical and community settings.

In clinical contexts, STRIVE can be integrated into individual or group therapy with older adults experiencing stress, anxiety, or life transitions. A typical eight-week protocol includes psychoeducation on interpreting stress as a biopsychosocial signal, biofeedback training, cognitive reframing exercises, narrative reconstruction, and legacy-focused interventions. Therapists are trained in using wearables to monitor physiological stress responses, applying ACT techniques for values clarification, and guiding clients through structured resilience timelines and "legacy labs." This application prioritizes therapeutic depth, client-centered pacing, and psychophysiological feedback tools (see Appendix A).

In community settings, STRIVE is implemented through group-based formats such as monthly workshops, peer-led storytelling circles, or intergenerational events. Emphasis is placed on resilience narratives, creative legacy-building, and mutual mentoring between older and younger participants. Activities may include digital or analog biofeedback games, collaborative art projects, and low-tech stress tracking tools like "stress diaries" or bingo cards rewarding adaptive coping (see Appendix B). This format enhances accessibility and leverages local resources, making the model especially suited for retirement communities, religious groups, or rural populations.

Cross-setting strategies ensure sustainability and scalability. These include train-the-trainer initiatives, grant-based funding, cultural and linguistic adaptation of materials, and hybrid delivery formats (e.g., in-person and virtual). Evaluation combines validated quantitative measures (e.g., PSS-10, Connor-Davidson Resilience Scale) with qualitative feedback to assess changes in participants' relationship to stress (see Appendix C).

The model's flexibility allows it to function as a formal therapeutic protocol, a public education curriculum, or a community engagement platform. STRIVE can be adapted for different cultural belief systems, material resources, and time frames – ranging from brief psychoeducational series to ongoing therapeutic groups. By honoring context while preserving core principles, the STRIVE model promotes a sustainable, person-centered approach to aging well under pressure.

Planned Empirical Validation of the STRIVE Model

While the STRIVE model is grounded in evidence-based principles from cognitive-behavioral therapy, neuroplasticity, narrative identity theory, and positive psychology, it has not yet undergone full empirical validation as an integrated framework. To address this, a

multi-phase validation plan is proposed to assess the feasibility, acceptability, and effectiveness of STRIVE interventions across both clinical and community contexts.

Phase 1. Feasibility and Acceptability Study

Objective: assess whether older adults (65+) find the STRIVE model understandable, relevant, and engaging.

Design:

- Mixed-method pilot study involving 30 older adults conducted over 8 weeks in a community center.
- Participants experience each of the 6 STRIVE components.
- Data collected via:
  - pre/post Perceived Stress Scale (PSS-10);
  - Connor-Davidson Resilience Scale (CD-RISC);
  - qualitative interviews on meaning, relevance, and clarity.

Expected outcome: improved scores on perceived resilience and stress management; rich feedback for model refinement.

Phase 2. Randomized Controlled Trial (RCT)

Objective: evaluate the model's clinical effectiveness in enhancing psychological resilience and reducing stress-related symptoms in late adulthood.

Design:

- 2-arm RCT with intervention group (STRIVE-based 8-week program) vs. active control (psychoeducation-only group).
- 120 older adults recruited from outpatient geriatric clinics.
- Measures:
  - PSS-10;
  - CD-RISC;
  - Geriatric Depression Scale (GDS-15);
  - Purpose in Life Scale (Ryff);
  - HRV (heart rate variability) biofeedback for physiological data (optional lab substudy).

Hypotheses: (1) participants in the STRIVE group will show significantly greater improvement in resilience, purpose, and stress-related biomarkers than control; (2) neurocognitive and emotional flexibility will mediate treatment outcomes.

Phase 3. Longitudinal Implementation Study

Objective: assess long-term sustainability and real-world application of the STRIVE model in diverse settings.

Design:

- 6–12-month follow-up of community-based programs.
- Multi-site implementation in senior centers, primary care, and faith-based organizations.

- Focus on intergenerational scaffolding and legacy projects as key mediators of enduring change.

Methods: (1) semi-structured interviews, focus groups, legacy project analysis; (2) measures of continued practice (e.g., journaling, mentoring) and subjective well-being.

All phases will follow strict ethical protocols for working with older adults, with particular attention to cognitive impairment screening, informed consent, and dignity-centered communication. Materials will be adapted for multilingual and multicultural populations.

This stepwise empirical validation plan ensures that STRIVE is more than an inspiring framework – it becomes a rigorously tested, evidence-based approach to psychological resilience in late adulthood. These studies will not only assess clinical outcomes but also illuminate how older adults actively transform stress into meaning, redefining the landscape of aging.

Conclusion

The STRIVE model offers a novel, integrative approach to psychological resilience in late adulthood by repositioning stress as a potential ally in the process of conscious aging. Grounded in well-established therapeutic traditions – such as cognitive-behavioral therapy, narrative psychology, and acceptance and commitment therapy – and supported by emerging evidence in neuroplasticity and gerontology, STRIVE reframes stress not as a threat to be managed, but as a meaningful signal to be engaged with intentionally.

Through its six interdependent components – Stress as Signal, Triadic Adaptation, Resilience Narratives, Intergenerational Scaffolding, Volitional Flexibility, and Empowerment Through Legacy – the model supports older adults in cultivating self-awareness, adaptive agency, and a sense of intergenerational purpose. It embraces a strengths-based perspective, encouraging individuals to not only cope with stress, but to transform it into an opportunity for reflection, growth, and contribution.

A key strength of the STRIVE model lies in its flexibility and contextual adaptability. Designed as a modular framework rather than a fixed protocol, STRIVE can be tailored to suit a wide range of cultural, technological, and therapeutic environments.

It is applicable in settings ranging from resource-rich clinical practices utilizing wearable biofeedback devices, to community centers operating with analog tools like stress journals and storytelling circles.

Delivery formats may include ongoing group therapy, short-term psychoeducational programs, legacy-building workshops, or intergenerational programs, lecture series or hybrid digital delivery.

This adaptability ensures that the model is both inclusive and scalable, empowering practitioners to preserve its core philosophy – transforming stress into meaning – while honoring the unique values and capacities of the individuals and communities they serve.

While STRIVE is grounded in strong theoretical foundations, future research is needed to empirically evaluate its effectiveness across populations and settings. Pilot studies, mixed-

method evaluations, and longitudinal follow-ups will be essential to validate the model's impact on psychological well-being, resilience, and quality of life among older adults.

By shifting the narrative around aging and stress, STRIVE contributes to a broader paradigm shift in mental health – one that emphasizes agency over decline, meaning over loss, and legacy over limitation. In doing so, it offers not just a model, but a philosophy of empowered aging in an increasingly uncertain world.

References

Adler, J. M. (2012). Living into the story: Agency and coherence in a longitudinal study of narrative identity development and mental health over the course of psychotherapy. *Journal of Personality and Social Psychology*, *102*(2), 367–389. https://doi.org/10.1037/a0025289

Armitage, R., & Nellums, L. B. (2020). COVID-19 and the consequences of isolating the elderly. *The Lancet Public Health*, *5*(5), e256. https://doi.org/10.1016/S2468-2667(20)30061-X

Atchely, R. C. (2009). *Spirituality and aging*. Johns Hopkins University Press.

Ayalon, L. (2020). There is nothing new under the sun: Ageism and intergenerational tension in the age of the COVID-19 outbreak. *International Psychogeriatrics*, *32*(10), 1221–1224. https://doi.org/10.1017/S1041610220000575

Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, *312*(5782), 1913–1915. https://doi.org/10.1126/science.1127488

Charlton, B. G. (2000). Cognitive decline in ageing: A fundamental limit to human cognition? *Medical Hypotheses*, *55*(3), 284–287. https://doi.org/10.1054/mehy.2000.1044

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396. https://doi.org/10.2307/2136404

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Erikson, E. H. (1950). *Childhood and society*. W. W. Norton & Company.

Garland, E. L., Geschwind, N., Peeters, F., & Wichers, M. (2015). Mindfulness training promotes upward spirals of positive affect and cognition: Multilevel and autoregressive latent trajectory modeling analyses. *Frontiers in Psychology*, *6*, 15. https://doi.org/10.3389/fpsyg.2015.00015

Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 61–139). Academic Press. https://doi.org/10.1016/S0065-2601(08)60016-7

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, *44*(1), 1–25. https://doi.org/10.1016/j.brat.2005.06.006

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2012). *Acceptance and commitment therapy: The process and practice of mindful change* (2nd ed.). Guilford Press.

Kim, H. G., Cheon, E. J., Bai, D. S., Lee, Y. H., & Koo, B. H. (2018). Stress and heart rate variability: A meta-analysis and review of the literature. *Psychiatry Investigation*, *15*(3), 235–245. https://doi.org/10.30773/pi.2017.08.17

Kleiber, D. A., & Linde, B. D. (2014). The evidence base for leisure education in preparation for the retirement transition. *Journal of Park and Recreation Administration*, *32*(1), 111–128. https://www.researchgate.net/publication/276918220

Knight, B. G., & Satre, D. D. (1999). Cognitive behavioral psychotherapy with older adults. In P. M. Camic & S. H. Knight (Eds.), *Clinical Handbook of Psychological Disorders in Older Adults* (pp. 65–90). Wiley.

Langer, E. J. (2009). *Counterclockwise: Mindful health and the power of possibility*. Ballantine Books.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping.* Springer.

Lehrer, P., & Gevirtz, R. (2014). Heart rate variability biofeedback: How and why does it work? *Frontiers in Psychology*, *5*, 756. https://doi.org/10.3389/fpsyg.2014.00756

McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology*, *5*(2), 100–122. https://doi.org/10.1037/1089-2680.5.2.100

McAdams, D. P., & de St. Aubin, E. (1992). A theory of generativity and its assessment through self-report, behavioral acts, and narrative themes in autobiography. *Journal of Personality and Social Psychology*, *62*(6), 1003–1015. https://doi.org/10.1037/0022-3514.62.6.1003

Newman, S., & Hatton-Yeo, A. (2008). Intergenerational learning and the contributions of older people. *Ageing Horizons*, *8*, 31–39.

Park, D. C., & Bischof, G. N. (2013). The aging mind: Neuroplasticity in response to cognitive training. *Dialogues in Clinical Neuroscience*, *15*(1), 109–119. https://doi.org/10.31887/DCNS.2013.15.1/dpark

Porges, S. W. (2011). *The polyvagal theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation*. W. W. Norton & Company.

Rejeski, W. J., & Mihalko, S. L. (2001). Physical activity and quality of life in older adults. *Journals of Gerontology: Series A, 56*(Suppl 2), 23–35. https://doi.org/10.1093/gerona/56.suppl_2.23

Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, *15*(1), 1–18. https://doi.org/10.1207/s15327965pli1501_01

Thayer, J. F., Hansen, A. L., Saus-Rose, E., & Johnsen, B. H. (2009). Heart rate variability, prefrontal neural function, and cognitive performance: The neurovisceral integration perspective. *Psychophysiology*, *46*(1), 143–152. https://doi.org/10.1111/j.1469-8986.2008.00716.x

United Nations, Department of Economic and Social Affairs, Population Division. (2023). *World population ageing 2023: Highlights.* https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undesa_pd_2024_wpa2023-report.pdf

Wong, P. T. P. (2012). Meaning-centered approach to research and therapy. In P. T. P. Wong (Ed.), *The human quest for meaning: Theories, research, and applications* (2nd ed., pp. 619–647). Routledge.

Appendices

Appendix A: STRIVE Model Implementation in Clinical Settings

Target Population: older adults in individual or group therapy facing stress, anxiety, or major life transitions.

Core Focus Areas:
- S – Stress as Signal
- T – Triadic Adaptation
- R – Resilience Narratives
- V – Volitional Flexibility

A1. Staff Training

Clinicians receive training in:
- Biopsychosocial Framing (based on Lazarus & Folkman)
- Biofeedback Use (e.g., HRV via HeartMath/Fitbit)
- ACT Techniques: values clarification, cognitive defusion

A2. Eight-Week Clinical Protocol

Phase	Focus	Example Activities
Weeks 1–4	Psychoeducation, biofeedback, cognitive pivoting	HRV awareness, resilience timeline, reframing exercises
Weeks 5–8	Intergenerational scaffolding, legacy projects	Role-playing, storytelling, legacy project design and showcase

A3. Tools & Partnerships
- Apps: Calm, Happify for gamified engagement
- Community Links: Schools for digital mentoring sessions.

Appendix B: STRIVE Model Implementation in Community Settings

Target Population: older adults in community centers, religious groups, or residential communities.

Core Focus Areas:
- R – Resilience Narratives
- I – Intergenerational Scaffolding
- E – Empowerment Through Legacy

B1. Program Design: Monthly Workshops
1. Stress as Your Superpower – biofeedback demo
2. Storytelling for Strength – oral history sessions
3. Legacy Lab – art/memoir projects
4. Bridging Generations – "Tech & Wisdom Exchange"

B2. Volunteer Involvement
- Students – tech guidance
- Artists – lead creative legacy projects
- Healthcare workers – deliver self-regulation mini-trainings

B3. Low-Tech Alternatives
- Stress Diaries – paper tracking
- Analog Games – resilience bingo
- Community Boards – shared story murals

Appendix C: Cross-Cutting Implementation Strategies

C1. Sustainability & Reach
- Funding: AARP grants, local crowdfunding
- Train-the-Trainer: empower community leaders for scalability

C2. Cultural Adaptability
- Translation: multilingual handouts
- Flexible Legacy Framing: spiritual, cultural, or familial meaning

C3. Evaluation & Feedback
- Quantitative: PSS-10, Connor-Davidson Resilience Scale
- Qualitative: Focus groups ("How has your relationship with stress changed?")

C4. Case Example: STRIVE in a Rural Senior Center
- Wisdom Garden: planting with personalized resilience messages
- Story & Soil: monthly sessions with 4-H youth — gardening + storytelling
- Minimal Tech: oral stories, handwritten reflections, nature-based practices.

Fiscal Effects of Community-Based Outreach Health Concepts Using the Example of Community Nursing in Austria

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Abstract

Introduction: Community Nursing (CN) was piloted in Austria through the federal government programme, with pilot projects running from 2022 to 2024. Managed by the Austrian Federal Ministry of Social Affairs, Health, Care and Consumer Protection (BMSGPK) and the Austrian National Public Health Institute (GÖG), 117 projects with 273 community nurses were implemented nationwide. CN aimed to provide low-threshold, community-based health and care support primarily to older adults, caregivers, and relatives, serving 3,000–5,000 residents per full-time nurse.
Method: As part of the evaluation of the pilot projects, the fiscal effects on the healthcare system were examined. A multi-method approach analyzed costs of CN, changes in the use of health and care services, and its fiscal effects. Moreover, costs of inpatient and outpatient care were compared to discuss potential long-term savings.
Results: In the short-term, CN increased public expenditure due to greater uptake of medical, therapeutic, and care and support services. From the long-term perspective, the program hypothetically yields potential savings, if supported individuals could remain at home longer, reducing reliance on institutional care facilities.
Discussion: While initial costs rose, CN demonstrates potential for future health system efficiency and cost containment. But attribution of cost savings exclusively to CN remains complex due to overlapping interventions and data limitations. Further longitudinal, controlled studies are recommended to verify fiscal effects more robustly.

Keywords: community nursing, economic evaluation, public health care, fiscal effects

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Introduction

The piloting of Community Nursing (CN) in Austria was a central initiative of the government programme 2020–2024, designed to strengthen primary health and care services with a focus on prevention and health promotion. As part of the Austrian Recovery and Resilience Plan 2020–2026 (ARP) and supported and funded by Next Generation EU (NGEU), this pilot program aimed to address challenges in care through low-threshold, and community-based interventions. It was managed by the Federal Ministry of Social Affairs, Health, Care and Consumer Protection (in German *Bundesministerium für Arbeit, Soziales, Gesundheit, Pflege und Konsumentenschutz*; BMSGPK) in partnership with the Austrian National Public Health Institute (in German *Gesundheit Österreich GmbH*; GÖG), which oversaw both the implementation and the evaluation of the projects. At the end of 2024, a total of 117 CN projects employing 273 qualified nurses were launched across all nine provinces in Austria.

Community Nurses play a central role in delivering services directly within local communities. They focus on strengthening health literacy, delaying the need for care, and helping individuals to stay in their own homes for as long as possible. Each Community Nurse serves 3,000 to 5,000 inhabitants, providing support preferably to older adults with and without care needs, as well as informal caregivers and/or family members.

The CN approach combines home visits, counseling and support, network-building, and targeted health promotion measures at individual, family, and community levels. A key ambition was to better connect existing health and social care services by building or reinforcing local and cross-sectoral networks. The pilot made strides toward these objectives, although integrating CN consistently across Austria's diverse provincial governmental settings remained a challenge.

Against this backdrop, this article examines the extent to which CN can have positive fiscal effects from the public health sector's perspective. These effects could be realized by promoting healthier lifestyles, reducing care needs, and enabling people to live independently for longer rather than moving into residential care.

To adequately answer these questions, a literature review was conducted and the costs of CN were examined. Primary data from users (including questionnaire surveys) and secondary data (including Statistics Austria) were also evaluated. Finally, the limitations are discussed and an outlook is provided.

Literature Review

The literature search was conducted systematically across multiple international and national scientific databases, including Springer, Thieme, Wiley, Science Direct, PubMed, Google Scholar, ResearchGate, and the Cochrane Library, as well as in Austrian university and university of applied sciences libraries. This was further supplemented with grey literature and project-specific materials. In total, 59 relevant journal articles and two books dealing with the economic evaluation of CN or models of primary care and prevention were analyzed in depth. The reviewed literature comes mainly from the United Kingdom, the United States, Australia, Canada, and New Zealand, with additional contributions from Singapore, China, South Africa, and a range of European countries. Notably, substantial differences in health systems, nursing practices, and target populations are found across these studies.

The literature review reveals that health-related outcomes of CN are frequently positive. Studies often report modest improvements in mortality, blood pressure, health-related quality of life, and satisfaction (Laurant et al., 2018). However, the evidence supporting these findings is typically moderate to low. In contrast, no significant differences are consistently found regarding adverse effects, hospital length of stay, or the frequency of outpatient consultations (Lukewich et al., 2022; Xu et al., 2022). Several works demonstrate that CN can lead to a reduction in emergency department visits and unplanned hospital admissions, especially among older adults with chronic illnesses (Buzath & Zechmeister-Koss, 2023; Xu et al., 2022). For other categories of health and social services, no consistently significant effects are observed. The impact of CN on nursing home admissions, in particular, varies widely; some studies observe delays or reductions, while others report no effect or even higher admission rates (Buzath & Zechmeister-Koss, 2023).

From an economic perspective, selected studies indicate cost-saving potential through early CN interventions for specific indications – yielding savings of several hundred to a few thousand euros or pounds per person. These savings are especially apparent in the areas of home care, rehabilitation, or fall prevention (Evers et al., 2019). Conversely, other analyses point to higher costs associated with more complex client groups or particular diseases, such as Parkinson's disease (Tappenden et al., 2012). The overall trend in the current literature suggests that while initial costs rise due to increased use of health and nursing services, long-term savings may be realized if institutionalization is delayed or prevented. Overall, cost-effectiveness of CN has been demonstrated for certain patient groups, whereas prevention and health promotion measures are generally linked with increased costs (Buzath & Zechmeister-Koss, 2023).

There remains a strong need for additional research on standardized, context-sensitive economic evaluations of CN. The impact of specific factors such as the level of engagement of nursing staff and clients, or the regional context of care delivery makes direct comparison of international findings challenging and complicates the transferability of results to broad implementation in Austria (Buzath & Zechmeister-Koss, 2023; Lopatina et al., 2017).

In summary, the international state of research points to a generally positive influence of CN on health status and quality of life. However, the effects on the use of other health and social care services, and the attendant costs, remain heterogeneous. Against this backdrop, the empirical and model-based analyses of the Austrian CN pilot projects presented in the following sections are especially relevant as a source of information and for the further development of the national care landscape.

Methodology

This study applied a mixed-methods approach to evaluate the financial and service-utilization impacts of the Austrian Community Nursing (CN) pilot projects. The research was carried out as a pre-post observational study, with data drawn from all pilot regions spanning Austria's diverse provincial healthcare landscape, as well as geographical and demographic situation. Such diversity ensured broad representativeness but posed constraints in relation to establishing a control group and causality.

The evaluation of fiscal effects refers to the year 2023 as an annual data basis is advantageous in order to enable comparison with secondary statistical data. Furthermore, the CN projects

were only set up in the course of 2022, and at the time of the analysis, data for the entire calendar year 2024 was not available; Against this background, 2023 was chosen as the period under review. Furthermore, it should be noted that all projects that were active for less than three months in 2023 and did not focus on older people (e.g., "school nurses") were excluded from the subsequent analysis. This led to the inclusion of 115 pilot projects in the evaluation. A total of 165 Com-munity Nurses were employed in full-time equivalents (FTEs) in these evaluated projects, resulting in an average of 1.43 FTEs per CN project.

Data for the analysis were drawn from a combination of primary and secondary sources. (1) A survey was administered to service recipients (predominantly elderly people and/or informal caregivers; in German *Zielgruppen-Fragebogen*; ZG-FB), in which individuals retrospectively reported their use of medical, therapeutic, care and support services as well as informal care – before and after participation in the CN pilot projects; a total of 698 data sets were generated from paper questionnaires completed. (2) Information on the costs of the pilot projects was obtained directly from contracting authorities GÖG and BMSGPK as well as the Austrian Health Promotion Fund (in German *Fonds Gesundes Österreich*; FGÖ). (3) To facilitate cost calculations on health and care services used, administrative data from the Austrian Health Insurance Fund (in German *Österreichische Gesundheitskasse*; ÖGK), covering more than 80 % of the national population, provided standard tariffs for healthcare services (ÖGK, 2024a). (4) Additionally, expenditure statistics on care from Statistics Austria were used.

The costs associated with CN provision itself were determined using expenditure figures from 2023, with calculations adjusted both by caseload ratio and by the proportion of the Austrian population aged 65 and above—reflecting the primary target group for the CN interventions.

For the financial impact assessment, the mean changes in the use of medical, therapeutic and care and support services from before to after were multiplied by ÖGK's official cost per unit tariffs. Where national fees varied, ÖGK's generally lower rates were consistently used, providing conservative estimates for public sector costs or savings. Total annual change in costs per person was calculated as the sum of changes in usage and its financial effects across all services utilized.

Descriptive statistics, including means and standard deviations, were reported for all key measures at both reference points t_0 and t_1. The statistical significance of mean differences was assessed using paired samples t-tests, while changes in proportions—particularly in care allowance levels—were examined using chi-squared or z-tests for proportions as appropriate, with standardized reporting of significance thresholds.

To analyze potential long-term cost savings over different care trajectories, scenario modelling was undertaken. Estimated net expenditure per person for outpatient versus inpatient care scenarios was modelled across three different time frames: three, six, and twelve months. These analyses incorporated national mean values as well as minimum and maximum per-person expenditure differing by province. The calculated savings included the costs associated with providing CN services, for a net impact estimate.

Despite a robust dataset and modelling approach, it is important to note several limitations. The study did not incorporate a control group and therefore cannot rule out confounding influences from external policy changes occurring during the pilot period or variations in

regional healthcare organization. Moreover, the use of ÖGK tariffs may understate the fiscal impact in national contexts where other insurers pay higher rates. Finally, the variability in healthcare infrastructure and expenditure between Austria's provinces may limit the generalizability of the findings.

Results

Costs of Community Nursing

The European Union (EU) financed Community Nursing (CN) pilot projects through the Next Generation EU (NGEU) funding programme. The funding amount for the implementation of the 115 CN pilot projects under review totaled approximately 49,390,046 € for the project years 2022 to 2024. This means that an average amount of 16,463,349 € was available per year.

The total funding amount for each project is divided into different cost categories, i.e., "personnel costs", "material expenses", "overhead costs", and "e-mobility". The personnel costs category is intended exclusively for Community Nurses. When submitting applications each project had the option of billing one third of the cost category as material expenses as optional lump sum. This optional lump sum was limited to certain expenses (e.g., travel expenses, electricity costs). The overhead costs category is intended for ongoing operating expenses (e.g., office rent, payroll accounting), and the e-mobility cost category covers the costs for cars or bicycles.

Table 1

Funding Amount per Cost Category, Total, per Year and per FTE

Cost type	Total funding (all project years)	Average funding (per year)	Average per FTE (per year)
Personnel costs	38,113,034.90 €	12,704,344.97 €	76,996.03 €
Material expenses	5,387,602.39 €	1,795,867.46 €	10,884.05 €
Overhead costs	3,699,714.05 €	1,233,238.02 €	7,474.17 €
E-mobility	2,189,694.41 €	729,898.14 €	4,423.63 €
Total	49,390,045.75 €	16,463,348.58 €	99,777.87 €

Note. own calculations are based on the number of projects/FTEs in 2023. *Source:* GÖG, FGÖ.

Table 1 summarizes the total funds approved for the 115 evaluated projects: personnel costs of around 38,113,035 €, material expenses (including the optional lump sum) of around 5,387,602 €, overhead costs of around 3,699,714 €, and an e-mobility subsidy amount of around 2,189,694 €. This results in an average total funding amount of just under 99,778 € per FTE (in 2023), broken down as follows: around 76,996 € for personnel costs, around 10,884 € for material expenses (including the optional lump sum), just under 7,474 € for the overhead flat rate, and around 4,424 € per FTE on average for e-mobility.

Table 2
Supporting Costs per Cost Type, per Year

Cost type	Personnel costs	Material expenses
Networking activities	141,235.88 €	40,159.89 €
Coordination and project management	63,327.00 €	27,058.67 €
Training (e.g., webinars)	55,524.75 €	20,968.51 €
Monitoring and evaluation	14,884.88 €	146,940.08 €
Public relations	n.A. €	311,111.00 €
Total	274.972,50 €	546.238,15 €

Note. own calculations are based on planned costs of the BMSGPK. *Source:* GÖG, FGÖ.

Table 1 summarizes the total funds approved for the 115 evaluated projects: personnel costs of around 38,113,035 €, material expenses (including the optional lump sum) of around 5,387,602 €, overhead costs of around 3,699,714 €, and an e-mobility subsidy amount of around 2,189,694 €. This results in an average total funding amount of just under 99,778 € per FTE (in 2023), broken down as follows: around 76,996 € for personnel costs, around 10,884 € for material expenses (including the optional lump sum), just under 7,474 € for the overhead flat rate, and around 4,424 € per FTE on average for e-mobility.

Short-Term Financial Effects of Changes in the Use of Medical, Therapeutic and Care and Support Services

This section provides an annual estimate of the potential fiscal short-term effects on the public sector of the significant changes in health and care service use identified due to the intervention. A highly significant difference in the use of medical services before (t_0) and after (t_1) the CN intervention was found in visits to general practitioners (in practice; p-value = 0.002), with a decrease in service use from an average of 1.29 to 1.10 visits per month. However, no significant difference was found in home visits by general practitioners, visits to specialists, outpatient clinic visits, hospital stays without overnight stays, hospital stays with overnight stays, or ambulance and rescue services.

Significant differences in the use of therapeutic services before and after the CN intervention were observed in physiotherapy (p-value < 0.001) and speech therapy (p-value = 0.002). The use of physiotherapy services had increased (t0 = 0.53; t1 = 0.80), as had the use of speech therapy services (t0 = 0.03; t1 = 0.06. For occupational therapy and psychotherapy no significant change in service use was found.

A highly significant difference in the use of care and support services before and after CN intervention can be seen in home and support services (p-value < 0.001), mobile care and support (p-value < 0.001), and 24-hour care (p-value < 0.001). The number of hours increased significantly for both home support services (t0 = 0.47, t1 = 1.48) and mobile care and support services (t0 = 0.44, t1 = 1.69), as did the number of days per week for 24-hour care services (t0 = 0.60, t1 = 2.28). There was no significant difference in care in an inpatient setting (in a hospital or nursing home). As for informal care and support services, i.e., care and support provided by relatives and friends, the statistical tests did not yield any significant results.

To calculate the fiscal effects of the change in service use, the costs of each service were researched. Because of the provincial governmental structures and the large number of public national health insurance funds in Austria, this step was difficult. Since 7.6 million people, or more than 80.0 % of all people living in Austria (ÖGK, 2024a), are insured by the Austrian Health Insurance Fund (ÖGK), this fee schedule was used (details on the calculations can be found in Aigner-Walder et al. (2024) in German). In this situation, it is important to know that the prices for registered doctors and therapists of this health insurance funds are, in most cases, lower than the prices of other national health insurance funds. Consequently, if there's a big drop in the services caused by CN, the calculations show the lowest possible savings. On the other hand, if there is more use, the costs will probably be underestimated.

Care and support service data from Statistics Austria (in German *Pflegedienstleistungsstatistik*) was used for outpatient and inpatient care and support services, using net expenditures, i.e., the gross expenditures minus contributions and substitutes as well as other revenues (Statistics Austria, 2024a, 2024b, 2024c). 24-hour care is not included in the respective data sets. This is why information on the relevant costs is taken from reports published by the Federal Ministry of Social Affairs, Health, Care and Consumer Protection (in German *Pflegevorsorgebericht 2022*; BMSGPK, 2023). In this regard, it should be noted that the costs presented here are purely public costs and that in many cases private co-financing takes place.

As shown in Table 3, the additional use of services (measured in natural units like hours per week) results in higher costs for the public sector and national health insurance companies per year. This increase in costs is particularly striking in care and support services, which include mobile care and support (+2,065.70 € per person), home support services (+1,667.14 € per person) and 24-hour care (+1,655.61 € per person). In contrast, the increase in costs for thera-peutic services is comparatively low (+92.51 € for speech therapy and +832.61 € for physio-therapy per person) and, with regard to medical services, a reduction in costs is estimated for general practitioner’s consultations (in practice) due to lower utilization (-18.29 € person).

Table 3

Effects of Changes in Use of Medical, Therapeutic, Care and Support Services, per Person

Type of service	Change in mean (t_0 to t_1)	p-value	Cost per unit	Financial change (per year)
General practitioners (in practice) (number per month)	-0.19	0.002**	23.13 € 8.02 €	-18.29 €
Physiotherapy (hours per week)	+0.27	< 0.001***	59.10 €	832.61 €
Speech therapy (hours per week)	+0.03	0.002**	59.10 €	92.51 €
Home support services (hours per week)	+1.01	< 0.001***	31.63 €	1,667.14 €
Mobile care and support (hours per week)	+1.25	< 0.001***	31.67 €	2,065.70 €
24-hour care (days per week)	+1.68	< 0.001***	18.89 €	1,655.61 €

Note. significance: * 5 % ** 1 % *** 0.1 % level, own calculations. *Source.* ZG-FB, ÖGK (2024b), ÖGK (2024c), ÖGK (2024d), Statistics Austria (2024a), Statistics Austria (2024b), BMSGPK (2023).

To sum up, the above estimates show that the activities and consultations induced by the Community Nurses will lead to extra costs of 6,295.28 € per person each year, assuming minimal costs to the public sector and national health insurance funds. However, it should be emphasized that the survey recorded changes in the use of services after utilization of the CN service; this does not mean that corresponding usage patterns must necessarily continue in the middle or long term.[1] Further longitudinal research combined with a control group would be needed to verify fiscal effects more robustly.

Hypothetical Discussion of Long-Term Fiscal Effects

This section discusses potential long-term financial effects for the public sector caused by CN intervention. The calculations compare potential savings resulting from a longer stay in one's own home enabled by the intervention taking also into regard associated costs of CN services. The hypothesis that CN has a positive effect on longer stays in one's own home cannot be tested within the scope of the project due to the limited implementation period. For this reason, the following cost and savings estimates are solely hypothetical.

Within this theoretical framework, the subsequent two care scenarios will be examined: (1) Use of mobile care and nursing services (including CN services) at home, (2) Use of inpatient care and nursing services. The calculations are based on average data from official statistics, and the savings are extrapolated to a three-month, six-month, and one-year period. The analysis considers the net expenditure per person receiving care in Austria in 2022, depending on the type of care received, i.e., outpatient care (in German *Mobile Pflege- und Betreuungsdienste*; Statistik Austria, 2024b) and inpatient care (in German *Stationäre Pflege- und Betreuungsdienste*; Statistik Austria, 2024d). As costs vary throughout Austria due to differing provincial health and care structures, the average cost saving (medium), as well as the federal state in which the lowest (minimum) and highest (maximum) levels of savings per person receiving care/support are recorded is also indicated.

The annual total costs of CN per FTE are 104,755 € (2023; see chapter above). This results in costs of 20.95 € to 34.92 € per capita based on the total population and considering the range of nurse-to-inhabitant ratio of 3,000 to 5,000. If these per capita expenditures are allocated exclusively to the main target group of CN (aged 65 and over) accounting for 19.0% of the Austrian population (Statistics Austria, 2024e), per capita spending range from 110.27 € to 183.78 €. The maximum value is used for the calculations.

The estimates in Table 4 show that if people stayed at home with mobile care for three months instead of staying in inpatient care (Δ 3), the public sector could save between 2,406 € and 7,636 € for each care recipient. Over a period of one year (Δ 12), this would result in hypothetical savings ranging from 9,626 € to 30,545 €, depending on the respective province; the mean estimate is 19,559 €.

The calculations only consider the cost of care and support services. The cost of medical or therapeutic services is not included.

[1] For example, an increase in physiotherapy services at the time of the survey does not necessarily mean that this applies to the entire year.

Table 4
Hypothetical Long-Term Savings per Person, 2022

Net expenditure	Mobile	Inpatient	Estimated savings (incl. costs of CN; in months)		
			Δ 3	Δ 6	Δ 12
Minimum	3,263 €	13,072 €	2,406 €	4,813 €	9,626 €
Mean (Austria)	3,331 €	23,074 €	4,890 €	9,780 €	19,559 €
Maximum	5,803 €	36,531 €	7,636 €	15,273 €	30,545 €

Note. own calculations and presentation. *Source:* Statistics Austria, 2024b, Statistics Austria, 2024d.

Discussion and Conclusion

This evaluation of the Austrian Community Nursing (CN) pilot projects provides initial evidence that such services influence patterns of health and care utilization, with measurable financial implications for the public sector. The analysis suggests that participation in CN was associated with increased use of certain medical, therapeutic and care services. While some of these changes indicate additional short-term costs, particularly for mobile and 24-hour care, they may also reflect a shift towards earlier, preventive, and more personalized interventions compared to later-stage, institution-based care.

From a broader health system perspective, these findings can be interpreted as a re-balancing of resources from inpatient to community-based settings, which is aligned with international policy goals of fostering ageing in place and maintaining autonomy for as long as possible. The scenario modelling demonstrates that potential cost savings could emerge in the long-run—particularly if increased CN service use helps delay or prevent transitions to costly inpatient care. This underscores the importance of viewing CN not only in terms of immediate expenditures but also in light of long-term health and social care system sustainability.

Nevertheless, several important limitations must be acknowledged. First, the study applied a pre–post design without a control group, meaning that causal attribution to CN services cannot be firmly established. Second, the primary data were collected via a single survey relying on retrospective self-reporting, which introduces potential recall bias and limits the precision of before–after comparisons. Third, the cost calculations are based on Austrian Health Insurance Fund (ÖGK) tariffs, which tend to be lower than those of other health insurance providers—therefore representing a conservative estimate of true fiscal impact. Fourth, the diversity of pilot regions in terms of geography, population structure, and health infrastructure means that aggregated results may mask important local variations. Finally, the follow-up period was relatively short, and it remains unclear whether the observed utilization patterns and care allowance changes will persist over the medium to long term.

In conclusion, while the CN pilot projects appear to have influenced care pathways and resource use patterns in Austria, further longitudinal, controlled studies are required to clarify their causal impact and cost-effectiveness. Despite the limitations, the findings presented here confirm previous empirical findings and contribute valuable further insights that can help shape the scaling-up and strategic design of community-based nursing interventions in Austria and beyond.

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Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The authors declare that DeepL, an AI-assisted translation software, and DeepL Write, an AI-assisted writing tool, were used throughout the manuscript. DeepL was applied for translating text, while DeepL Write was used to improve clarity, style, and grammatical accuracy across the full document. The usage was limited to language translation, grammatical correction, and stylistic refinement; no AI tools were used to generate original research content. The ideas, design, procedures, findings, analyses, and discussion are entirely the author's own work, derived from careful and systematic conduct of the research.

References

Aigner-Walder, B., Luger. A., & Putz, S. (2024). *Ökonomische Bewertung von Community Nursing in Österreich [Economic Evaluation of Community Nursing in Austria]*. In: Pichler, C., Aigner-Walder, B., Horak, M., Oberzaucher, J., Fenzl, T., Hagendorfer-Jauk, G., Ströckl, D., Breuer, J., Luger, A., Perchtaler, M., Putz, S., Voutsinas, C., Zografou, E., Kräuter, S., Bauer, C., Lidolt-Petscher, B.: *Evaluation Community Nursing Österreich* [Evaluation Community Nursing Austria], 54–93. https://cn-oesterreich.at/system/files/inline-files/EvalCN_Endbericht_final_0.pdf

Bundesministerium für Soziales, Gesundheit, Pflege und Konsumentenschutz (BMSGPK). (2023). *Österreichischer Pflegevorsorgebericht 2022* [Austrian Long-Term Care Report 2022]. Wien: Bundesministerium für Soziales, Gesundheit, Pflege und Konsumentenschutz. https://www.sozialministerium.at/dam/jcr:788ac2e7-9238-47a6-9125-d6f49d6a896a/BMSGPK_Pflegevorsorgebericht_2022.pdf

Bundespflegegeldgesetz (BPGG). (2024). https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10008859

Buzath, K., & Zechmeister-Koss, I. (2023). Economic Dimensions of Community Nursing: A Systematic Literature Review. HTA-Projektbericht 153.

Evers, S. M. a. A., Dorresteijn, T. a. C., Wijnen, B. F. M., Van Haastregt, J. C. M., Kempen, G. I. J. M., & Zijlstra, G. a. R. (2019). Economic evaluation of a home-based programme to reduce concerns about falls in frail, independently-living older people. *Expert Review of Pharmacoeconomics & Outcomes Research, 20*(6), 641–651. https://doi.org/10.1080/14737167.2019.1666714

Laurant, M., Van Der Biezen, M., Wijers, N., Watananirun, K., Kontopantelis, E., & Van Vught, A. J. (2018). Nurses as substitutes for doctors in primary care. *Cochrane Library*, *2019*(2). https://doi.org/10.1002/14651858.cd001271.pub3

Lopatina, E., Donald, F., DiCenso, A., Martin-Misener, R., Kilpatrick, K., Bryant-Lukosius, D., Carter, N., Reid, K., & Marshall, D. A. (2017). Economic evaluation of nurse practitioner and clinical nurse specialist roles: A methodological review. *International Journal of Nursing Studies*, *72*, 71–82. https://doi.org/10.1016/j.ijnurstu.2017.04.012

Lukewich, J., Asghari, S., Marshall, E. G., Mathews, M., Swab, M., Tranmer, J., Bryant-Lukosius, D., Martin-Misener, R., Norful, A. A., Ryan, D., & Poitras, M. (2022). Effectiveness of registered nurses on system outcomes in primary care: a systematic review. *BMC Health Services Research*, *22*(1). https://doi.org/10.1186/s12913-022-07662-7

Österreichische Gesundheitskasse (ÖGK). (2024a). *Über die ÖGK* [About the Austria Health Insurance Fund]. https://www.gesundheitskasse.at/cdscontent/?contentid=10007.867331&portal=oegkportal

Österreichische Gesundheitskasse (ÖGK). (2024b). *Honorarordnung für Einzelvertragsärzte und Vertragsgruppenpraxen für Ärzte für Allgemeinmedizin und Fachärzte (ausgenommen Fachärzte für Zahn-, Mund- und Kieferheilkunde) im Bundesland Steiermark* [Fee schedule for individual contract physicians and contract group practices for general practitioners and specialists (excluding specialists in dentistry, oral and maxillofacial surgery) in the province of Styria]. https://www.gesundheitskasse.at/cdscontent/load?contentid=10008.764049&version=1644229507

Österreichische Gesundheitskasse (ÖGK). (2024c). *Kostenerstattung Physiotherapie* [Reimbursement of physiotherapy costs]. https://www.gesundheitskasse.at/cdscontent/load?contentid=10008.776042&version=1704981178

Österreichische Gesundheitskasse (ÖGK). (2024d). *Kostenerstattung Logopädie* [Reimbursement of speech therapy costs]. https://www.gesundheitskasse.at/cdscontent/load?contentid=10008.776041&version=1688116018

Statistics Austria. (2024a). *Betreuungs- und Pflegedienste. Mehrstündige Alltagsbegleitungen und Entlastungsdienste 2017 bis 2022* [Care and nursing services. Multi-hour daily assistance and relief services from 2017 to 2022] [Data file]. https://www.statistik.at/fileadmin/pages/346/2_Mehrstuendige_Alltagsbegleitungen_Entlastungsdienste_2017-2022.ods

Statistics Austria. (2024b). *Betreuungs- und Pflegedienste. Mobile Betreuungs- und Pflegedienste 2017 bis 2022* [Care and nursing services. Mobile care and nursing services 2017 to 2022] [Data file]. https://www.statistik.at/fileadmin/pages/346/1_Mobile_Betreuungs_Pflegedienste_2017-2022.ods

Statistics Austria. (2024c). *Betreuungs- und Pflegedi enste der Bundesländer im Jahr 2022* [Care and nursing services provided by the provinces in 2022] [Data file]. https://www.statistik.at/fileadmin/pages/346/Betreuungs-_und_Pflegedienste_der_Bundeslaender_im_Jahr_2022.pdf

Statistics Austria. (2024d). *Stationäre Betreuungs- und Pflegedienste 2017 bis 2022* [Inpatient care and nursing services 2017 to 2022] [Data file]. https://www.statistik.at/fileadmin/pages/346/4_Stationaere_Betreuungs_Pflegedienste_2017-2022.ods

Statistics Austria. (2024e). *Bevölkerung zu Jahresbeginn ab 2002 (einheitlicher Gebietsstand: 01.01.2024)* [Population at the beginning of the year since 2002 (regional status of 1.1.2024)] [Data file]. http://statcube.at/statcube/opendatabase?id=debevstandjbab2002

Tappenden, P., Campbell, F., Rawdin, A., Wong, R., & Kalita, N. (2012). The clinical effectiveness and cost-effectiveness of home-based, nurse-led health promotion for older people: a systematic review. *Health Technology Assessment, 16*(20). https://doi.org/10.3310/hta16200

Xu, Y., Koh, X. H., Chua, Y. T. S., Tan, C. G. I., Aloweni, F. a. B., Yap, B. E. J., Tan, P. C., Chua, X., Lim, Y. K. S., Oh, H. C., Teo, S. H. S., & Lim, S. F. (2022). The impact of community nursing program on healthcare utilization: A program evaluation. *Geriatric Nursing*, *46*, 69–79. https://doi.org/10.1016/j.gerinurse.2022.04.024

Habit Turns Into Livelihood Program: Senior Citizen Preference in the Province of Laguna, Philippines

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Abstract

This study focused on the different habits of the senior citizens and the most dominant among them as the basis for the livelihood program. The program will empower senior citizens with a particular focus on enhancing their well-being and social inclusion. A quantitative research methodology was used in the study, using a researcher-made questionnaire that included the demographic profile of the respondents, identified dominant habits, and their willingness to conduct a livelihood program. Based on the findings, the majority of the respondents were aged 66-70, and most of them were married. Their economic status is as follows: they need 5,000 pesos or below to meet their monthly expenses. The majority of them have no source of income. In determining the habits, the following were highlighted: sewing, cooking, and planting. Most respondents answered planting as their enjoyable habit. Most respondents want to earn money using their habits, particularly in planting. The researcher recommended that the Department of Agriculture be the primary contributor of the seedlings and the provision of an expert trainer/ lecturer in agricultural guidelines and practices. The Negosyo or Business Center will conduct an orientation for the business owners to help the senior citizen sell their harvested crops, which can be business-to-business (B2B) transactions or business-to-consumer (B2C). This will be the source of the livelihood program to meet the personal needs of the senior citizens, and socialization through community involvement that promotes a sense of achievement.

Keywords: livelihood program, habit, senior citizen

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Introduction

In the Philippines, a senior citizen can be considered and legally accepted by the law as any resident citizen who is at least sixty (60) years old. This is based on Republic Act No. 7432, as amended by Republic Act No. 9994, also known as the Expanded Senior Citizens Act. They are entitled to various benefits and privileges, including discounts on goods and services, and are covered by the national health insurance program. This act focuses on the maximization of the contribution of senior citizens to nation building, granting benefits and special privileges, and for other purposes. The constitutional principles declared policies from the Act: a) To motivate and encourage the senior citizens to contribute to nation building; b) To encourage their families and communities they live with to reaffirm the valued Filipino tradition of caring for the senior citizens. Odong (2025) stated that in Los Banos, Laguna a major milestone in elderly care has been achieved as the National Commission for Senior Citizens (NCSC), in collaboration with the local government, they official launched its Senior Citizens Community Care Center (SC3C). This will cater skills development program for those who are still interested in working.

This study aimed to provide the intervention needed for the senior citizens to provide them with meaningful assistance in engaging and positively influencing the lives of communities. The goal is to foster empowerment among individuals, with a particular focus on enhancing the well-being and social inclusion of senior citizens in the province of Laguna, particularly in the city of Santa Rosa. By providing them with livelihood opportunities, social engagement activities, and essential skills training. The program seeks to improve their quality of life, promote active aging, and strengthen their sense of belonging within the community. The Information Management (2025) explored a potential strategic partnership to enhance livelihood opportunities and agricultural training programs for senior citizens. These include home-based gardening kits, organic farming, mushroom cultivation, poultry, aquaponics, and container farming.

The study would like to recommend an improvement regarding the preferred habit that can turn into a livelihood program for the overall quality of life for senior citizens. This will help in reducing their burden of daily living expenses and ensuring their well-being. The habit addresses the physical, emotional, social, and financial needs of seniors, promoting independence, self-sufficiency, and a sense of community. By achieving its expected outcomes and long-term impacts, the study has the potential to make a meaningful difference in the lives of senior citizens, enabling them to live healthier, happier, and more fulfilling lives. This study can provide them with livelihood opportunities, social engagement activities, and essential skills training. The livelihood program can improve seniors' financial decision-making, promote financial independence, and enhance their overall quality of life. The program fosters greater independence and dignity among seniors while strengthening community ties and promoting social equity. Overall, it represents a commitment to supporting the elderly population and serves as a model for similar initiatives in other communities.

Literature Review

Senior Citizen

Carandang et al. (2019) discussed on their study that the Philippine government faced a burden of improving health and social services for both the growing elderly and young

population. The extent of discussion on aging issues and concerns, however, is minimal at best. Their study aimed to examine the perceptions of unmet needs and to explore the coping mechanisms of senior citizens across local stakeholders in an urban area in the Philippines including the province of Laguna. Senior citizen can benefit from various livelihood initiatives through national and local government partnership. The National Commission of Senior Citizens (NCSC) is intensifying efforts for seniors with new partnerships to provide practical, income-generating skills, and the Provincial Government of Laguna offers training in areas like food processing and handicrafts. Furthermore, the Sustainable Livelihood Program (SLP) and the DOLE Integrated Livelihood Program (DILP) are national programs that can also be accessed by senior citizens to sustain businesses and improve socio-economic status (Bacelonia, 2025).

Headed by Laguna Federation of Senior Citizens Association (LASCA) President Mrs. Leticia Cabiedes, four hundred (400) officers of senior citizen associations within the province joined the celebration, where representatives from each district of the province showcased their talents in dancing and singing. Featured during the event were gift giving, exchange gifts, parlor games, and raffle courtesy of Gov. Hernandez and Congresswoman Ruth Mariano Hernandez, made livelier when the couple added more raffle prizes at stake. The event was organized by the Laguna Provincial Social Welfare and Development Office. The National Commission of Senior Citizens (2025) promote the advocacy and collaboration between different stakeholders and senior citizens (SCs) to ensure the effective implementation of various programs and services, particularly on the development of SCs and advancing their health, well-being, and ensuring a supportive and enabling environment for the elderly. Senior citizens in Laguna, particularly in Santa Rosa, Laguna, are entitled to various benefits, including a monthly social pension for indigent seniors, mandatory Philhealth coverage, discounts on goods and services, and other social safety nets. The city government, through its Office of Senior Citizens Affairs (OSCA), also provides additional support through local programs.

Habits of the Senior Citizen

Juachon (2024) assessed the elderly availment of benefits and privileges in terms of health, social, financial, education and employment. The common benefits and privileges enjoy by the elderly adult include: free health check up and medicines, and discounts in private services. Free movie and access to recreational facilities; access to basic education and being offered with job opportunities fitted to their skills and talents lead to employment. One of the determined habits mentioned is to travel, based on the study of (Pasion & Abad, 2024), Senior citizen frequently possesses a plethora of life experience and insight. Asking individuals about their travels allows the exchange of experiences, thoughts, and insights acquired over time, thus promoting intergenerational understanding and communication. With the study of Streimikiene et al. (2021), governments and tourism companies across many developed nations have expanded their target markets in response to global demographic shifts and the increasing participation of seniors in leisure travel. There are significant changes in demographics occurring across the world, including a growing number of people becoming older. More individuals are reaching retirement age as well as beyond, owing to rising life expectancy. Scholars have been inspired by this shift in the population to look at the different facets of aging, such as older individuals' travel and leisure selections.

Livelihood Program

The Philippine Institute for Development Studies (2019) evaluated that the projected increase in the number of senior citizens entails greater support needed in terms of health care and income security for the elderly. The government intervention provides various legislation and implementing various social protection programs for senior citizens. The article by Acosta and Avalos (2018), stated that the Philippines Department of Social Welfare and Development has taken the lead in providing-opportunities for income generating activities/livelihood development through the implementation of the Sustainable Livelihood Program (SLP). The task of this group is to reduce poverty and inequality by generating employment among poor households and by moving highly vulnerable households into sustainable livelihoods and toward economic stability. This note described the design and core processes of the SLP and reflects on the opportunities that the program has to improve and complement other Social Protection programs to make an impact on households' welfare, and provides recommendations to maximize its impact.

According to the Department of Budget and Management of the Republic of the Philippines, the Secretary Mina F. Pangandaman said that the administration of President Ferdinand R. Marcos Jr. will continue to ensure that the public will benefit from government programs that provide livelihood and help ensure employment to Filipinos by allocating a total of P32.720 billion for the current year. Based from General Appropriations Act (GAA).

> To fulfill the President's directive to empower our workforce, we remain committed to supporting programs that will continue to provide quality jobs and employment opportunities. The livelihood programs, educational initiatives, and safety nets we've put in place will not only provide immediate relief but also pave the way for sustainable growth.

Budget Secretary Mina Pangandaman emphasized. The allocated fund includes programs being implemented by the Department of Labor and Employment (DOLE). The TUPAD program is a community-based safety net initiative that provides temporary employment to workers in the informal sector. It specifically targets the underemployed or workers who do not receive sufficient wages in their current jobs; the self-employed individuals who work for themselves; and the displaced, marginalized workers, or those who have lost their jobs or experienced reduced income due to the pandemic.

Bacelonia (2025) report found in Philippines News Agency stated that NCSC rolls out livelihood, training programs for senior citizens. This involves the collaborations with the Department of Tourism, Technical Education and Skills Development Authority, and private group SM Cares to provide work and entrepreneurial opportunities to senior citizens across the country. The President stated that senior citizens, as pillar of our nation, should continue to be productive and must be part of the country's economic revolution.

Department of Agriculture

The Department of Agriculture (DA) promotes agricultural development and growth. In pursuit of this mandate, the DA provides the policy framework, helps direct public investments, and, in partnership with local government units, provides the support services necessary to make agriculture and agribusiness enterprises profitable and help spread the benefits of development to the poor, particularly in the rural areas. The Department of Agriculture (DA) logo shows a

bundle of freshly harvested stalks of rice. The golden grains symbolize the goal that the Department seeks to attain for the sector - a bountiful harvest, manifested in agricultural productivity, food security, and self-sufficiency. The green stalks tied together represent the various agencies and offices of the Department covering its commodity and functional concerns, i.e., crops, livestock, fisheries, alongside the provision of production support, research and development, product standards, sector policy and planning, credit, marketing support, extension, training, information and education tied together in a spirit of unity and cooperation to effectively deliver the package of services essential to attain this "bountiful harvest" (https://www.dbm.gov.ph/wpcontent/uploads/OPCCB/opif_2008/OPIF/da-FINAL.pdf).

Department of Trade & Industry / Negosyo Center

Tipon et al. (2023), on their study resulted the themes on golden years, socially connected, and unknown journey. These themes highlighted the experiences and challenges faced by the senior citizens. Also, it is highly suggested that local government agencies enhance and strictly monitor the existing program that alleviates mental and physical health concerns and senior citizens' safety and financial assistance. Garibay, H. (2024) mentioned that as the primary government agency championing consumer rights and responsibilities, the DTIs are committed to promoting fair trade practices, ensuring product safety, and empowering Filipino consumers to make informed choices. Their role is to ensure a market that is more receptive to the standards of conduct of business and industry, that allows the efficient distribution of basic commodities, and the speedy resolution of consumer concerns.

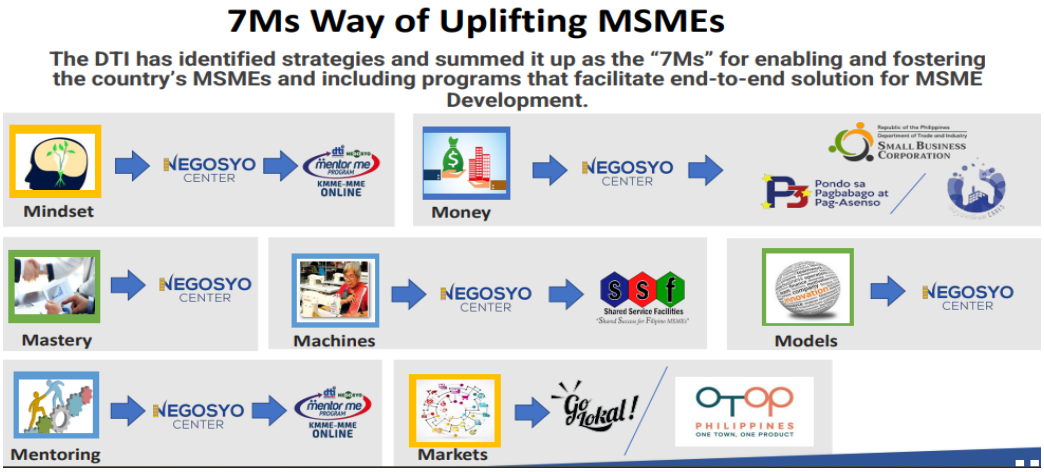
DTI (Kagawaran ng Kalakalan at Industriya) is the executive department of the Philippine government responsible for the advancement, promotion, governance, regulation, management, and growth of industry and trade. The department laid out the organizational structure of the department into the following functional groups: Competitiveness and Innovation Group (CIG); Consumer Protection Group (CPG); Industry Development and Trade Policy Group (IDTPG); Management Services Group (MSG); Regional Operations Group (ROG); and the Trade Promotions Group (TPG). Its hierarchical organization includes 27 foreign trade service posts, 17 regional offices (including Negros Island Region), 87 provincial/city/area offices, 12 bureaus, 4 attached agencies, 7 attached corporations, and 8 service offices. The department is headed by a Secretary (equivalent to Minister) and assisted by Undersecretaries (equivalent to Deputy Minister) who take charge of a certain sub-department each, and Assistant Secretaries which serve as specialized assistants of the Secretary.

Based on the research of Garibay (2024), Businesses are the engines that fuel the economic growth of every nation, democratic or not. The reason businesses are crucial to the economy is that they produce the goods and services that people use every day, the clothes to wear, the food to eat, the transportation to ride, and so on. Businesses also generate jobs. They are the largest employer, bigger than the government. When employment is healthy because of sufficient job opportunities, certainly the economy becomes healthy. Businesses are also the biggest source of tax revenue for the government to support its programs, projects, and services. From taxes, the government pays the salaries of the teachers, soldiers, police officers, and all other government employees working to provide public services. And when we say businesses, it is not only about the large business corporations that usually operate in international settings, but more so on small businesses that operate locally, the Micro, Small and Medium Enterprises (MSME).

The Negosyo Center Program is responsible for promoting ease of doing business and facilitating access to services for Micro, Small, and Medium Enterprises (MSMEs). Republic Act No. 10644, otherwise known as the "Go Negosyo Act," seeks to strengthen MSMEs to create more job opportunities in the country. The Program has five centers established in the islands of Luzon, Visayas, and Mindanao. Since then, more centers have been set up nationwide, bringing ease of doing business closer to MSMEs in all regions. Negosyo Centers help stimulate entrepreneurship development as MSMEs contribute substantially in driving the Philippine economy.

Figure 1

DTI Developed Strategies for MSMEs



Source: https://www.google.com/search?q=department+of+trade+and+industry+philippines&rlz=_e

Negosyo Centers are found in strategic areas convenient for the existing and would-be entrepreneurs, such as DTI offices, Local Government Units (LGU), academe, Non-Government Organizations (NGOs), and malls.

Figure 2

Negosyo Center's Skills Training and Development Programs

Source: https://www.google.com/search?q=department+of+trade+and+industry+philippines&rlGCC

The study of Locquiao (2024) suggested recommendations for improving the quality of life for senior citizens in rural communities. These include providing healthcare accessibility through mobile clinics or telemedicine, establishing social support programs, collaborating with local organizations, encouraging financial security and social inclusion, and implementing a survival kit and infographics to enhance their quality of life. These measures aim to improve the overall quality of life for these elderly residents.

Methodology

Research Design

A research design is the plan or framework used to conduct a research study. It involves outlining the overall approach and methods that will be used to collect and analyze data in order to answer research questions or test hypotheses. A well-designed research study should have a clear and well-defined research question. It is a detailed plan for collecting data and a method for analyzing and interpreting the results. A well-thought-out research design addresses all these features (Singh, 2023). The study's design establishes the primary and secondary study types and, if necessary, the data-gathering techniques and statistical analysis strategy. This study's methodology used a quantitative descriptive design.

Population and Sampling

This study was conducted through convenience sampling. This is a practical and efficient method for collecting data when time, resources, or access to a population are limited. It encompassed the sixty (60) senior citizens in a selected barangay in Santa Rosa, Laguna.

Instrument

The use of a survey questionnaire in gathering data includes a demographic profile of the respondents, an identified list of habits enjoyed by the respondents, and a possible livelihood program from identified habits and preferences of the respondents regarding the habits that can be turned into a livelihood program. Some parts were modified as the source of information to answer the research questions. Filipino translation of the questionnaire was also used to get appropriate answers, considering that not all senior citizens can understand the English language.

Data Collection

In gathering data, the use of a printed form of the survey questionnaire is recommended. House-to-house distribution of the instrument employed to gather data. Each question is explained to ensure understanding, attain accuracy, and truthfulness of the response.

Data Analysis

After the data has been gathered, descriptive statistics are used to analyze the frequency distribution of tables, percentiles, and rankings.

Ethical Considerations

The research procedures were followed, met, and respected by the researchers to convey the idea of making certain that something is of a certain standard or level of excellence, results can be depended upon to be consistent and accurate, both within the study itself and in future applications. It generally refers to the information obtained or determined through a research process. The participants are eager to contribute, inclined to participate, and amenable to the study. The highlights of the data were intentionally kept hidden from others. All participants received documents that permitted them or indicated that their agreement would be suitable.

The following considerations were employed in the study: Informed Consent: This will ensure that all research participants fully comprehend the study's purpose and potential applications. They will provide a clear explanation of data usage and emphasize participants' right to withdraw their consent at any time. Another is Confidentiality: This is a dedication to the preservation of confidentiality in participants' personal information and responses. Followed by Respect for Diversity: this will encompass a wide range of participants, reflecting diverse ethnicity, genders, ages, and backgrounds. Another is the Responsible Data Handling: this will consistently and securely manage research data, adhering to data protection regulations. They will take measures to anonymize and encrypt data when necessary. To consider also the Truthful Reporting: This will ensure that the reporting or research findings are accurate and honest, devoid of exaggeration or manipulation to fit preconceived expectations or interests. And lastly, Public Interest: This will prioritize the well-being of the public and society, striving to make a positive contribution to the broader discussion on beauty standards, products, and their societal impacts.

Conclusion

This study provides the following information about the profiles of the respondents, 50% of the participants were aged 60-65 years, 27% of them were aged 66-70 years, 12% were aged 71-75 years, 5% of them were aged 76-80 years and only 3% were aged 81-90 years. This means that most of the senior citizens were in the early stages of their retirement. On the other hand, 58.33% of the senior citizens were female and 41.67% were male. This means that most of the respondents were female. Meanwhile, based on the respondents' civil status, most of them, or 67% were married, followed by 15% were single, 15% were widowed, and 3% were separated. In terms of the highest educational attainment of the senior citizen, 43% of them were high school level, followed by elementary level of 32%, 10% were college level, 8% and the least number of respondents, 7% were college graduates. The source of income of the respondents, most of them, or 82% answered none, and 18% answered through a pension. Among the senior citizens, 83% their monthly expenses were below P5,000, and 17% of them incurred P5,001 above. Finally, in the area of their health, 63% of the senior citizens have mild sickness, 35% of them have no sickness, and 2% have a serious health condition. The different habits identified here, 52% of the respondents chose gardening, 18% chose cooking, 17% of them have the habit of sewing, 8% chose cleaning, and 2% or the least answered, were painting and carpentry. All the senior citizens have the desire to earn money and identified that earning money through planting can be their possible livelihood program. The respondents also chose plants as source of income 20% of them answered pechay or snow cabbage, 18% answered talong or eggplant, meanwhile, 17% of them chose lettuce & okra or ladies fingers, 13% answered mushroom, 10% spinach, 3% mustasa or mustard leaves and the least number got 2% which was sayote or pear-shaped gourd.

Based on the gathered data, the following conclusions were drawn:

1. Most of the respondents were in the ages ranging 60-65.
2. Majority of the respondents are female.
3. The respondents' civil status, most of them or 67% were married.
4. The highest educational attainment of the senior citizen, 43% of them were high school level.
5. The source of income of the respondents, most of them or 82% answered none.
6. Among the senior citizens, 83% their monthly expenses were P5,000 below.
7. Among the senior citizens, 83% their monthly expenses were P5,000 below
8. The different habits identified that majority or 52% of the respondents chose planting.

9. The respondents also chose plants as source of income 20% of them answered pechay or snow cabbage, 18% answered talong or eggplant.

Recommendation

The researchers would like to recommend the following:

1. After identifying senior citizens preferred habit, the researchers can collaborate or have partnership with the Department of Agriculture. The following activities can be requested to their office:
   1.1 To be a contributor of seedlings identified in the survey results.
   1.2 To provide an expert trainer/ lecturer in agricultural guidelines and practices.
2. Researchers can have business linkages through the Negosyo in facilitating selling the harvested crops. The following activities can be requested to their office:
   2.1 Orientation for the formation of cooperative groups intended for the senior citizens.
   2.2 The office can mediate between the business owners in relation to the output of the program.
3. The activity is sustainable through the government agencies intervention, extension program is highly recommended to reach out more barangays in Santa Rosa Laguna and it can be extended to the province of Laguna in Philippines.

Limitations

This is a quantitative study that covers the selected barangays. The coverage of the study is limited to the habits only; other areas, such as talents and skills, are not included. The number of respondents can be expanded to more than sixty senior citizens.

References

Acosta, P. A., & Avalos, J. E. (2018). *The Philippines Sustainable Livelihood Program: providing and expanding access to employment and livelihood opportunities (English)*. World Bank Social Protection Policy Note|no. 13 Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/385601527673449057

Bacelonia, W. (2025). NCSC rolls out livelihood, training programs for senior citizens. Philippines News Agency. https://www.pna.gov.ph/articles/1252435

Carandang, R. R., Asis, E., Shibanuma, A., Kiriya, J., Murayama, H., & Jimba, M. (2019). Unmet needs and coping mechanisms among community-dwelling senior citizens in the Philippines: A qualitative study. *International Journal of Environmental Research and Public Health, 16*(19), 3745. https://doi.org/10.3390/ijerph16193745

Dela Cruz, F., & Fiscal, R. (2018). Participation, Barriers and Preferences of Senior Citizens on Physical Activities. *International Journal of Asian Social Science, 8*(11), 1039–1047. https://doi.org/10.18488/journal.1.2018.811.1039.1047

Garibay, H. (2024). Programs and Services of DTI Negosyo Centers and Operationalization of the 7M Strategies. *The Review of Contemporary Scientific and Academic Studies: An International Multidisciplinary Online Journal*, *4*(5). https://doi.org/10.55454/rcsas.4.05.2024.005

Information Management. (2025, July 16). NCSC, Da Eye Joint Partnership to boost agri-livelihood, training programs for seniors. NCSC. https://www.ncsc.gov.ph/post/ncsc-da-eye-joint-partnership-to-boost-agri-livelihood-training-programs-for-seniors

Juachon, E. S. (2024). Specialized program for senior citizens of selected cities of National Capital Region-Philippines: Towards a revitalized quality of life and improved benefits and privileges. ResearchGate. https://www.researchgate.net/publication/383072110

Locquiao, M. (2024). Senior Citizens' Quality of Life in the Rural Communities in Pangasinan. *International Journal of Advanced Multidisciplinary Studies, 8*(4), 83–99. https://www.ijams-bbp.net/wp-content/uploads/2024/10/8-IJAMS-AUGUST-2024-83-99.pdf

National Commission of Senior Citizens (N. C. of S. C.). (2025, March 28). Collaboration among national and local agencies for the inauguration of the first senior citizen community care center (SC3C) in Luzon, Los Baños, Laguna. NCSC. https://www.ncsc.gov.ph/post/collaboration-among-national-and-local-agencies-for-the-inauguration-of-the-first-senior-citizen-com

Odong, C. (2025, June 2). Elderly care center opens in Laguna - Philippine Information Agency. Philippine Information Agency (PIA). https://pia.gov.ph/elderly-care-center-opens-in-laguna/

Pasion, B., & Abad, P. (2024). The Role of Attitude in Explaining Travel Behavior: A Senior Citizen's Perspective in the Province of Laguna. *Asia-Pacific Journal of Human Development and Family Studies (AHEAD), 3*(1), 16.

Philippine Institute for Development Studies. (2019). Silver linings for the elderly in the Philippines: Policies and programs for senior citizens. PIDS Policy Notes. https://www.pids.gov.ph

Singh, S. (2023). What is Research Design? Understand Types of Research Design, with Examples. https://researcher.life/blog/article/what-is-research-design-types-examples/

Streimikiene, D., Svagzdiene, B., Jasinskas, E., & Simanavicius, A. (2021). Sustainable tourism development and competitiveness: The systematic literature review. *Sustainable development, 29*(1), 259–271. https://doi.org/10.1002/sd.2133

Tipon, F. K., Baldado, K., Delos Santos, A. M., & Montaos, J. L. (2023). The quality of life, lived experiences, and challenges faced by senior citizen street vendors. *Psychology and Education: A Multidisciplinary Journal, 7*(1). https://ejournals.ph/article.php?id=21042

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