

Clinical Practice Guidelines for Primary Care for Older Persons, Families, and Communities

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Abstract

This study explores the complex health and social care needs of aging populations, with a focus on addressing critical gaps in healthcare delivery, workforce competencies, and policy frameworks. Drawing from a comprehensive literature review and regional case studies in Kenya, Uganda, Rwanda, Yemen, and Tunisia, the study identifies common issues such as chronic diseases, multiple long-term conditions (MLTC), mental health concerns, social isolation, functional decline, and inequities in healthcare access. It highlights the additional challenges posed by gender disparities, cultural influences, caregiving burdens, and limited healthcare infrastructure, particularly in low-income countries. The shift to framing health challenges as MLTC underscores the need to address a broader spectrum of interrelated conditions, including long-term infectious diseases such as HIV and Hepatitis B and C, as well as mental health conditions, within aging populations.

This research evaluates existing frameworks, including Integrated Care for Older People (ICOPE), and highlights the importance of adopting preventive health measures, community-level interventions, and gender-sensitive approaches. Innovative strategies such as stress management techniques and epigenetic reprogramming for aging reversal are proposed as promising avenues for improving health outcomes. The study emphasizes the need for scalable and sustainable interventions tailored to the cultural and socioeconomic contexts of diverse regions.

Key recommendations include strengthening geriatric care infrastructure, enhancing workforce competencies through localized training programs, and integrating synchronous courses for effective guideline adoption. Policy reforms should address healthcare inequities, support caregivers, and foster intergenerational and family-based care models. The study calls for collaborative efforts between policymakers, healthcare providers, and researchers to implement holistic, evidence-based strategies that ensure equitable and dignified aging experiences. This research provides a roadmap for advancing elderly care, bridging critical gaps, and improving the quality of life for aging populations worldwide.

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Introduction

Objective and Scope of the Guidelines

These guidelines aim to assist primary care providers in making informed decisions alongside their older patients and their caregivers. They focus on addressing healthcare needs and issues specific to older persons, ensuring that care is equitable, comprehensive, and tailored to this demographic. The guidelines draw on the World Health Organization's (WHO) [Global Competency Framework for Universal Health Coverage](#), which outlines core competencies required for health professionals to deliver quality care. This framework emphasizes the importance of person-centered, integrated care and provides a benchmark for health worker education and training programs. By adapting these principles to the needs of older people, the guidelines promote the development of a health workforce capable of addressing the unique and complex challenges associated with aging.

Target Audience

The target audience for this initiative includes health and social care professionals engaged in supporting older populations. This group comprises family physicians, primary health care practitioners, professionals serving older persons in primary care and public health settings, and community health workers. Additionally, it extends to individuals working in related social health contexts, such as care coordinators and social service providers. By focusing on this diverse audience, the initiative seeks to equip professionals with the tools and knowledge necessary to deliver comprehensive, person-centered care that addresses the complex needs of older adults.

Purpose

The guidelines can be customized by different countries to address prevention, treatment, rehabilitation, and care for older people, encompassing not only professionals and families but also individuals and communities. These guidelines will assist in raising awareness and provide a framework for training programs tailored specifically for professionals. Furthermore, they can support the training of individuals, families, and community members who serve older populations, fostering a comprehensive understanding of the social and economic determinants of health for older people.

Definition of Terms

Dementia Care is a specialist support system designed to help a person with dementia to manage their symptoms – it's provided by carers who are experienced and trained in caring for someone with dementia. However, in many low- and middle-income countries (LMICs), dementia care is predominantly provided by untrained or minimally trained individuals, such as family members, community health workers, and other non-professional caregivers. Dementia Care refers to caring for all conditions defined as dementia. Common types include Alzheimer's, Lewy Body dementia, vascular dementia, frontotemporal dementia, and mixed dementia – which is a combination of two or more types of dementia. It covers care for these conditions at all stages – from the early stages, when people may experience difficulty concentrating or finding the right words in conversation, to the later stages, when a person with dementia may have a tendency to wander and become lost, or find it difficult to eat (Elder.org, 2024).

Elderly Care, also known as “senior care” or “aged care”, is a broad term that covers various services centered around meeting seniors' emotional, social, and physical needs. Its premise lies in recognizing the unique requirements of every older adult and offering integrated healthcare services to meet these needs. Elderly care supports seniors' journeys towards aging gracefully, helping them retain their comfort, independence, and dignity (Bowdler, 2023).

Palliative Care is a holistic approach to medical care that focuses on improving the quality of life for patients and their families who are facing challenges associated with life-threatening illnesses. This approach addresses not only the physical aspects of suffering, such as pain and difficulty breathing, but also the psychological, social, and spiritual needs of both patients and their caregivers and families (World Health Organization, 2020).

End of Life Care is given to people who are near the end of life and have stopped treatment to cure or control their disease. End-of-life care includes physical, emotional, social, and spiritual support for patients and their families. The goal of end-of-life care is to control pain and other symptoms so the patient can be as comfortable as possible. End-of-life care may include palliative care, supportive care, and hospice care. Also called “comfort care” (National Cancer Institute, n.d.).

Types of Care and Workforce

Community-Based Health Care includes services delivered by a broadly defined community health workforce, according to their training and capacity, encompassing a range of health workers, lay and professional, formal and informal, paid and unpaid, as well as facility-based personnel who support and

supervise them and provide outreach services and campaigns. Where applicable, specific occupational groups and their roles are highlighted. In every community, there are local actors, relationships and processes that intersect with the health sector and are central to delivering high-quality, person-centered health care and to building health system resilience. Relevant actors include local authorities, faith leaders and nongovernmental organizations (NGOs) and community groups, such as women's, scouting and youth groups. As trusted members of the community, the community health workforce usually has strong ties with these groups.

Home Care refers to the provision of medical and non-medical services delivered directly to individuals in their homes, often as part of a coordinated and tailored plan of care. It is designed to assist individuals, particularly the elderly or those recovering from hospitalization, with healthcare needs, personal assistance, and support for daily activities while allowing them to remain in the comfort of their own homes. Home care can encompass a range of services, including nursing care, physical therapy, personal hygiene assistance, medication management, and help with mobility (World Health Organization, 2015).

Formal Caregivers (Long-Term Care Workers) are referred to by the World Health Organization (WHO) as “long-term care (LTC) workers”. These are individuals who provide paid care under various employment relationships, either formal or informal. These workers are responsible for delivering professional assistance and support to older adults or individuals with disabilities who require help with daily living activities, medical care, or other specialized support. LTC workers may be employed through medical institutions, community-based organizations, or directly by care recipients or their families. They are typically trained professionals with skills in caregiving, medical assistance, or rehabilitation. In some contexts, formal caregivers may also include care workers operating in informal employment arrangements, reflecting the diverse and flexible nature of care delivery systems (Oh et al., 2024)

Informal Caregivers (Family/Volunteer Caregivers), often referred to as “carers” by the WHO, are individuals such as family members, partners, friends, or neighbors who deliver care to older adults or other individuals in need. They commonly share affective or social bonds with care recipients and provide unpaid support either on a regular, occasional, or routine basis. Informal caregivers may assist with daily living activities, physical and emotional support, or organizing care delivery by others. While they perform many of the same tasks as formal caregivers, they often lack formal training or compensation. In some countries, policies support informal caregivers by offering social benefits such as paid leave or cash-for-care transfers. The boundaries between informal and formal caregiving can sometimes blur, particularly in practices where informal carers receive partial payment or support (Oh et al., 2024; World Health Organization, 2024).

Family/Friend Caregivers are used in many situations, the use of the words “family” or “friend” can help clarify the caregiving role. The term “family” is inclusive and can include a neighbor or friend who is typically not biologically related to the care recipient (International Organization for Standardization, n.d.).

Digital Health is an overarching term that is defined as: the use of digital technologies to improve health. It includes e-Health and m-Health (e.g. telemedicine, electronic health records and wearable sensors) as well as developing areas such as the use of advanced computing sciences in the fields of big data and artificial intelligence. Digital technologies also include some medical devices and assistive products (World Health Organization, 2024).

Life Skills for the Elderly—Digital Health Literacy refers to the skills, knowledge, and attitudes necessary to successfully use digital solutions, effectively understand and utilize data outputs from such solutions as well as actively participate in the digital information society (World Health Organization, 2024).

Methodology

The methodology employed for developing these clinical guidelines for aging populations began with a comprehensive literature review, drawing on globally recognized frameworks, including those from the World Health Organization (WHO) and other international bodies. The review examined chronic diseases, mental health, functional ability, and Multiple Long-Term Conditions (MLTC) while addressing workforce competencies, social determinants of health, digital health training, and integrated care models. Key health challenges relevant to older adults were explored, such as chronic diseases, mental health conditions, social isolation, functional decline, frailty, and nutritional needs. Additionally, the methodology included an analysis of gender differences in elderly care, cultural and regional influences on health-seeking behaviors, caregiving roles, and intergenerational support. Existing clinical guidelines, including the Integrated Care for Older People (ICOPE) framework, were reviewed alongside community-level, preventive, and gender-sensitive approaches to care. Workforce competencies were evaluated to identify training needs, particularly in low-resource settings. To enhance understanding, case studies from Kenya, Uganda, Rwanda, Yemen, and Tunisia were included, providing insights into regional contexts and healthcare systems.

Literature Review

Common Issues and Health Needs for Elderly and Aging Populations

Access to healthcare remains a significant challenge for the elderly population, especially in low- and middle-income countries (LMICs). Geographical and physical isolation, weak healthcare infrastructure, and lack of access to essential medicines are among the prevailing barriers to healthcare in most cases for older adults in these regions. These challenges are worse in rural areas due to the concentration of healthcare services in urban centers, which may imply longer waiting times and lower quality of care. This suggests that about 80% of older adults face inequities in healthcare within LMICs, often struggling for timely care amidst overburdened healthcare systems and a lack of social protection programs (Dableh et al., 2024). Further, high out-of-pocket expenses and limited public health insurance are significant barriers to accessing healthcare for the aging population, particularly in low- and middle-income countries (Kowal et al., 2012). Socio-economic factors and inability to afford healthcare were major obstacles, as reflected by Carroll et al. in a review, 2022.

Similarly, in Canada, older adults face unique challenges in accessing healthcare due to fragmented systems that hinder timely and integrated service delivery. Although Canada's universal healthcare model provides broad access, structural inefficiencies and workforce shortages lead to delays and gaps in care for aging populations. By the year 2030, one in five Canadians will be over the age of 65, intensifying the demand for health services (Little & Morley, 2022). Similarly, in the United States, barriers also exist regarding a fragmented health system that may prevent older adults accessing health care. By the year 2030, one in five Americans will also be over age 65 and will more intensively utilize health services. However, current global health workforce shortages are expected to increase. For example, a deficit of up to 139,000 physicians is projected by 2033, further limiting access to care for older adults (Jones & Dolsten, 2024). A large portion of healthcare spending also comes from older adults. For instance, Medicare beneficiaries aged 85 years and older have an average annual expenditure of \$16,145—nearly twice that of those aged 65 to 74 (Jones & Dolsten, 2024). Similarly, in Canada, healthcare expenditures for individuals aged 65 and older are significantly higher compared to younger age groups, reflecting the increased utilization of health services (Little & Morley, 2022).

Mental Health Concerns

Mental health disorders, such as depression, anxiety, and the separate condition of dementia, are common among older adults and often coexist with physical health problems. The increasing prevalence of dementia—particularly Alzheimer's disease—is a growing concern, especially in high-income countries faced with demographic aging. Dementia is a syndrome that can be caused by a number of diseases that, over time, destroy

nerve cells and damage the brain, leading to deterioration in cognitive function (i.e., the ability to process thought) beyond what might be expected from the usual consequences of biological aging (WHO, 2021). While consciousness is not affected, impairments in cognitive function are commonly accompanied—and occasionally preceded—by changes in mood, emotional control, behavior, or motivation.

Dementia has significant physical, psychological, social, and economic impacts, not only for people living with the condition but also for their carers, families, and society at large. Furthermore, there is often a lack of awareness and understanding of dementia, resulting in stigmatization and barriers to diagnosis and care (WHO, 2021). It is important to distinguish dementia from mental health disorders to avoid further stigmatization, as including it as a mental health condition may exacerbate the stigma associated with the disease. Globally, it is estimated that around 55 million people currently suffer from dementia, with this number projected to rise as the population ages (WHO, 2021). Depression, another significant mental health problem in the older adult population, has a much higher prevalence among those with chronic diseases compared to the general population. This psychiatric condition exacerbates existing physical diseases, thereby raising the mortality rate associated with those physical illnesses (Kim et al., 2021).

Moreover, there is often a dearth of mental health support delivery in low- and middle-income countries, further exacerbated by cultural stigmas, inadequate resources, and bureaucratic barriers, leaving many people with mental health problems unattended. Older adults in LMICs often depend on younger family members for basic needs, especially if they do not have pensions or other means of livelihood, which heightens their vulnerability. One systematic review emphasized the need for community-based psychosocial interventions to address issues of depression, anxiety, and to raise general well-being among older adults. Some promising interventions include reminiscence therapy, programs aimed at increasing social interactions, and exercise, which have been shown to be effective in improving the mental health outcomes of older persons (Giebel et al., 2022)

Social Isolation and Loneliness

Social isolation and feelings of loneliness are major health concerns for the older adult population. As people grow older, their social ties tend to weaken due to several possible factors: friends and family members die; they retire; or they become restricted in their mobility. These changes can lead to feelings of loneliness, which have been linked to severe health consequences, such as depression, cognitive decline, and a higher risk of mortality.

One study found that social isolation increases the risk of mortality by 29%, loneliness by 26%, and living alone by 32% (Holt-Lunstad et al., 2015). Such comparative risks are equivalent to other major health risks like smoking, obesity, and physical inactivity. Moreover, the outcomes of social isolation and loneliness are not confined to just the augmentation of the risk of dying. It can have a very devastating effect on both mental and physical health, increasing blood pressure, increasing stress hormones like cortisol, weakening the immune system, and increasing inflammation in the body. These changes can worsen chronic conditions like heart disease and diabetes (Holt-Lunstad et al., 2015). Social isolation is associated with a decline in cognitive functioning and an increased risk of dementia and other memory-related disorders.

Considering that about 24% of the elderly population reports experiencing significant feelings of loneliness, this issue should be addressed through community-based activities and strengthened social support systems. Strategies including the facilitation of social gatherings, increasing access to social services, and using digital tools to help older adults stay connected can alleviate loneliness and improve their overall quality of life. A combined approach, using these methods, will be needed to cut down on the long-term health impacts of social isolation and loneliness among older populations.

Functional Decline and Frailty

Functional decline is becoming a common problem in the older adult population. It has been described as a decline in both physiological and cognitive function, leading to the condition of frailty. Frailty defines a decreased physiological function of the body to respond to stressors like disease or trauma (Fried et al., 2001). It has been related to severe health consequences, such as more functional impairment, disability, and increased risk for mortality. Studies show that 6.9% of older adults living at home are frail, and these individuals are four times more likely to experience poor health outcomes (Fried et al., 2001). Frailty is even more common in the elderly who are hospitalized; 57.4% of them are frail. It predicts a decline both in function during hospitalization and after hospitalization. Vulnerable people are more likely to be readmitted to the hospital and in need of more social support after discharge (Tavares et al., 2021). Preventing and postponing functional decline is important so older adults can live independently and have a better quality of life. Physical activity, rehabilitation programs, and occupational therapy have been found to be effective in preventing and slowing down the development of functional decline and frailty (Giné-Garriga et al., 2014). Such programs can help the elderly to maintain their well-being and lower other healthcare utilization.

Healthcare Access and Equity

One of the most-cited major barriers in accessing health care is geography, especially for older adults in low- and middle-income countries. Most older adults in LMICs experience barriers not only in the lack of healthcare infrastructure but also in access to primary medicines. The barriers are even higher in rural areas, where healthcare services are most often concentrated in urban locations, which in turn results in longer waiting times and lower quality of care. It's estimated that about 80% of the older adult population in LMICs experience health inequity and are regularly not able to receive their care in time, as health systems become overburdened and social protection is generally weak (Dableh et al., 2024). High out-of-pocket expenses and poor coverage through public health insurance further reduce access. Socioeconomic matters and inability due to an affordability issue with healthcare are major barriers, as found in a review by Carroll et al. (2022).

Similarly, older adults in the United States experience difficulties in accessing healthcare because of the fragmented nature of the healthcare system. This demand will only continue to increase by the year 2030, when one in five Americans will be over the age of 65. However, workforce shortages are also projected to create a shortage of up to 139,000 physicians by the year 2033, which will further restrict access to care for older adults (Jones & Dolsten, 2024). In addition, a great deal of spending on healthcare is attributed to the older adult population. For example, the average amount spent annually by Medicare beneficiaries aged 85 and older is \$16,145—nearly double that of those between ages 65 and 74 years (Jones & Dolsten, 2024). A study conducted by Geffen et al. (2019) in poor, under-resourced, and under-serviced communities in Cape Town, South Africa, revealed that older persons; lacked trust in healthcare services, doctors and nurses; lacked understanding of problems related to aging; care was highly process-driven; communication from healthcare providers was poor; and care was fragmented and not person-centered. These findings highlight the importance of building trust and tailoring healthcare delivery to the unique needs of older adults in LMICs.

Nutritional Needs

The nutritional needs of older adults are influenced by a complex interplay of biological and environmental factors, for which they must be cognizant, in order to prevent malnutrition and its serious health consequences. As people age, physiological changes such as a decline in appetite, alterations in taste and smell, and a decline in renal function commonly lead to a decrease in nutrient intake. For example, the ability of the human body to absorb crucial nutrients—such as protein, vitamin D, and calcium—decreases with advanced age, thus increasing the risk for diseases like sarcopenia and osteoporosis (Kaur et al., 2019). Also, older adults are at a

higher risk of experiencing difficulties with mastication and deglutition arising from conditions like dental issues, which may lower their food intake and consequently worsen nutritional deficiencies.

Additionally, the impact of medications, such as anticholinergics, on a dry mouth should also be noted, as it can further complicate chewing and swallowing, exacerbating nutritional challenges in this population. (MeetCaregivers, 2023). The situation in developing countries is compounded by the "double burden" of malnutrition and obesity. According to Tucker and Buranapin (2001), in these countries, rapidly changing populations are at increased risk of both undernutrition and obesity because of rapid urbanization and dietary transitions. These changes—characterized by increases in consumption of high-fat foods and low-nutrient foods—contribute to a rise in diseases such as diabetes and cardiovascular diseases. Simultaneously, changes in the social and economic structures, including increased food insecurity and breakdown of traditional family support systems, seriously undermine the ability of older adults to access nutritious food (Tucker & Buranapin, 2001).

Gender Differences in Elderly Health Needs and Care Utilization Health Status and Chronic Conditions

Gender differences in health status among the elderly are well-documented, with women facing a significantly higher burden of chronic illnesses and functional impairments compared to men. This disparity has critical implications for eldercare, as women's longer life expectancy does not translate into better health in old age; rather, they often live longer with multiple chronic conditions, including arthritis, osteoporosis, and cardiovascular disease (Doser Joz-Roland & Monod-Zorzi, 2010). Women are particularly underdiagnosed and undertreated in cardiovascular disease, with symptoms frequently overlooked, as highlighted in the British Cardiovascular Society's consensus document, which explains the need to advance access to cardiovascular diagnosis and treatment for women (Tayal et al., 2024). These health issues lead to increased dependency and a higher demand for both formal and informal care. Women are more susceptible to geriatric syndromes and are more likely than men to experience limitations in daily activities, requiring greater healthcare support over an extended period (Arber & Cooper, 1999). Additionally, these health challenges are exacerbated by social and economic vulnerabilities, with elderly women more frequently experiencing social isolation, lower income, and inadequate social support structures (Doser Joz-Roland & Monod-Zorzi, 2010).

Healthcare Utilization Patterns

Research consistently indicates that older women engage with healthcare services more often than their male counterparts, a phenomenon attributed to a greater incidence of female chronic diseases and functional

limitations. In Spain, for example, women over 60 are more likely to visit a doctor (24% more than men) and to receive home care services (67% more often than men), attributed largely to their higher rates of chronic disease and the consequent need for continuous medical support (Redondo-Sendino et al., 2006). Similar trends have been observed in the Nordic countries, where older women use both primary and specialized healthcare services more than their male counterparts; however, in Norway, the men had a 29% increased risk of being hospitalized, this shows possible economic and system barriers that may prevent women from accessing hospital care (Suominen-Taipale et al., 2006). Home health services are utilized 27% more by women than men in the United States among those 65 and older, although women are less likely to receive the more intense hospital-based procedures, possibly due to economic constraints as well as a preference for home care (Cameron et al., 2010). These results suggest that older women, despite greater need, may experience financial and systemic barriers to receiving intensive medical care.

Psychological and Social Support Needs

Psychosocial needs are also highly gendered, with elderly women more likely to experience depression, loneliness, and cognitive impairments than their male counterparts. For instance, in a South Korean study, 77.8% of elderly individuals living alone were women, and they reported lower socioeconomic and health statuses than men. These women had a greater need for support services related to mobility, residential environment, and emergency health, while elderly men showed higher levels of loneliness and suicidal thoughts (Ko et al., 2019). Additionally, evidence suggests that suicide rates among older men are significantly higher than those among women, underscoring the importance of addressing the specific mental health vulnerabilities faced by older men (Kiely et al., 2019). Cultural norms may further deter men from seeking emotional support or social services, leaving women as the primary beneficiaries of community-based support programs. Moreover, women are more inclined toward self-care practices, whereas men are more likely to seek formal medical consultations, indicating divergent approaches to managing health (Musil, 1998).

Caregiving Roles and Economic Constraints

Economic disparities profoundly affect elderly women's health needs, especially in societies where caregiving expectations fall primarily on women. In China, elderly women are 7.6% more likely to require care than men and have a 29.3% higher likelihood of unmet needs due to limited access to familial or spousal support (Chen et al., 2018). Women in caregiving roles often experience economic strain, as their involvement in elder care can reduce their economic independence and access to health resources (Zhan, 2005). Male caregivers, on the other hand, are more likely to provide financial assistance, whereas female caregivers perform the majority of

direct care tasks, such as personal and household care. This gendered division of labor leaves women more vulnerable to health and financial disadvantages as they age (Chen et al., 2018; Zhan, 2005).

Cultural and Regional Influences on Health-Seeking Behavior

Cultural norms also heavily influence gendered healthcare utilization, particularly in Southeast Asia. For example, in Vietnam, older women are less likely to seek care for conditions that carry social stigma, which affects their health-seeking behavior (Rodgers & Zveglich, 2021). In contrast, women in Cambodia and the Philippines are more proactive in seeking healthcare services than men, highlighting regional variations in how cultural expectations shape access to care (Rodgers & Zveglich, 2021). Such differences underscore the need for culturally sensitive healthcare policies that address the specific barriers faced by elderly women in different regions, particularly in societies where stigmatization may prevent them from receiving essential care.

Intergenerational and Family-Based Care Needs

In many countries, caregiving responsibilities for elderly family members predominantly fall on daughters, especially in welfare states with strong familial obligations and limited public eldercare services. Studies reveal that daughters are generally more responsive to their parents' needs, while sons tend to contribute less to hands-on care (Haberkern et al., 2013). This gender inequality in caregiving persists even in welfare states with significant public support for eldercare, indicating that cultural norms around family obligations continue to place a greater burden on women. Furthermore, the expectation for women to provide care increases in countries where public support is lower, amplifying the gendered division of care responsibilities (Haberkern et al., 2013).

Epigenetic Reprogramming of Aging Reversal

Epigenetic interventions have practical implications for the elderly, especially in immunity decline and frailty. One study using a combination of growth hormone, DHEA, and metformin has shown thymic regeneration and a reversal of immune aging markers in humans with reduced vulnerability to infections and chronic inflammatory conditions (Fahy et al., 2019). These findings provide direct support for the development of therapies aiming at enhancing immune system resilience in older adults.

Stress Management for Biological Recovery

Stress-related aging aggravates conditions like hypertension and cognitive decline. In the study by Poganik et al. (2022), it has been shown that markers of biological age increase during stress but go back to normal upon recovery, emphasizing the need for integrating protocols for stress management into the care of the elderly. This could include psychosocial stress management therapies and physical rehabilitation.

Existing Published Clinical Guidelines

In countries like Canada, the rapid rise in the aging population has caused major rewrites and updates to Clinical Practice Guidelines (CPGs) (Pon et al, 2011). In Canada, for example, the Baby Boomer generation was born between 1946 and 1964, and currently comprises approximately a third of the population. By 2025, the number of those over age 65 will surpass the number of those under the age of 14 (Pon et al, 2011). This demographic shift is not confined to a single country or region, as many nations worldwide are experiencing significant growth in their elderly populations. This trend places substantial pressure on healthcare systems globally to develop and implement age-appropriate clinical practice guidelines (CPGs) that address the unique and often complex healthcare needs of older adults (Pon et al, 2011). Clinical guidelines systematically bring together evidence relating to one or more generally related conditions and provide recommendations for the management of patients based on available evidence and consensus where there is no evidence (Hughes et al., 2013). However, one of the most crucial challenges to existing clinical guidelines is Multiple Long-Term Conditions (MLTC) (traditionally known as multimorbidity), a condition where one has multiple chronic and/or acute diseases complicating medical treatment and necessitating tailored interventions (Hughes et al., 2013). Most current guidelines are usually too generalized; the majority of their recommendations are based on clinical trials that mainly exclude older adults with multiple comorbidities. As a result, guidelines cannot address the complexities in caring for the elderly, whose physiological responses to medications and treatments differ significantly from those of the general population (Hughes et al., 2013).

In this regard, the lack of appropriate guidelines therefore puts a patient at risk of polypharmacy, whereby simultaneous multiple drug prescription exacerbates side effects among aged patients, inducing adverse drug interactions (Hughes et al., 2013).

Although there is a growing need for care that is adapted to geriatric populations, many clinical practice guidelines inadequately reflect these specific needs of the elderly (Muir et al., 2011). Notably, the exclusion from clinical trials of older adults—especially those with multiple chronic conditions—is a common practice. This practice leads to a lack of information on the safety and efficacy of treatments for older populations (Marum, 2020). This is usually cast in terms of practitioners being forced to extrapolate treatment guidelines from studies in younger, healthier populations, which means less than ideal care for the older adult with increased complexity in health needs (Marum, 2020). Older patients often have multiple comorbidities, which the prevailing guidelines often fail to account for. Clinical guidelines for diseases such as diabetes, hypertension, and cardiovascular disease tend to concentrate on these conditions in a very compartmentalized way and hence

miss the bigger picture of health issues an elderly patient might be confronting (Vitry & Zhang, 2008). This can result in fragmented care where several therapies may interact in unpredictable ways and hence complicate holistic management of health for a patient (Vitry & Zhang, 2008).

Mutasingwa et al. (2011) highlight the fact that many existing clinical practice guidelines (CPGs) were not designed with older adults in mind, particularly those with comorbidities. They argue that CPGs often focus on single diseases, which leads to fragmented care and does not consider the complexity of managing multiple chronic conditions simultaneously (Mutasingwa et al., 2011). They suggest that the evidence base used to create these guidelines may not be entirely applicable to older adults who present with several coexisting health issues. This presents a significant challenge for clinicians who must make care decisions without clear guidance on how to manage MLTCs (Mutasingwa et al., 2011).

In line with this, Singh and Bajorek (2014) discuss the ambiguity in defining 'elderly' in clinical practice guidelines for pharmacotherapy. The criteria for defining 'elderly' vary widely across different guidelines, which makes it difficult to standardize care for older adults, particularly when it comes to medication management (Singh et al., 2014). The failure to account for age-related physiological changes in guidelines contributes to inappropriate medication use and heightened risk of adverse drug reactions. This can be especially problematic for older adults who often take multiple medications concurrently (Singh et al., 2014).

To address the issue of MLTC, experts recommend cross-referencing guidelines for frequently co-occurring conditions. Cross-referencing enables clinicians to develop comprehensive care strategies that take into account how different conditions and treatments may interact. For instance, treating diabetes in a patient with heart disease may require careful management of both blood glucose and cardiovascular risk factors (Hughes et al., 2013). Clinical vignettes are increasingly being integrated into CPGs to illustrate complex real-world scenarios where multimorbid conditions coexist. These case-based examples assist clinicians in navigating complex medical decisions, such as adjusting medication regimens to avoid drug interactions in patients taking multiple prescriptions. Clinical vignettes offer practical guidance on how to manage care holistically rather than focusing narrowly on individual conditions (Hughes et al., 2013).

Practical issues related to treatment decisions are often overlooked in clinical guidelines, even though they can significantly impact patients' ability to follow through with care (Heen et al., 2021). A framework has been developed to systematically include patient-important practical issues, such as recovery time, coordination of

care, and effects on physical, emotional, and social well-being, into evidence summaries and recommendations. This ensures that clinical guidelines not only focus on medical outcomes but also take into account factors like a patient's capacity to engage in their care and daily life demands (Heen et al., 2021). By addressing these practical issues, shared decision-making can be more patient-centered, helping healthcare professionals align treatment options with the individual preferences, values, and circumstances of older adults' treatment paths, ensuring that the chosen course of action aligns with the patient's values (Heen et al., 2021).

A recurring theme in the literature is the need for multidisciplinary care teams in the management of elderly patients. Geriatric care often requires coordination between multiple specialists, including physicians, nurses, social workers, and caregivers. This team-based approach ensures that all aspects of the patient's health—physical, emotional, and social—are addressed (Beaupierre et al., 2019). The American College of Emergency Physicians (ACEP) emphasizes the need for emergency departments to implement systematic approaches to geriatric care, focusing on comprehensive assessment and interdisciplinary care models. The Geriatric Emergency Department Guidelines recommend the adoption of comprehensive geriatric assessment tools that allow healthcare providers to identify issues such as cognitive impairment, frailty, and polypharmacy, which are commonly under-recognized in older adults. These tools help streamline the care process by systematically addressing multiple dimensions of an elderly patient's health, including physical, mental, and social factors (American College of Emergency Physicians [ACEP], 2017). Furthermore, the guidelines advocate for the creation of interdisciplinary care models, which integrate the expertise of various healthcare professionals, including geriatricians, emergency physicians, nurses, social workers, and pharmacists. By leveraging this team-based approach, emergency departments can ensure that elderly patients receive holistic care that addresses not only their immediate medical needs but also long-term health considerations, such as medication management, fall prevention, and post-discharge support. The guidelines also emphasize the importance of tailored care plans that account for the unique complexities of treating older adults in high stress.

Approaches to Care for the Elderly Population

Addressing the multifaceted needs of older adults requires innovative and integrated approaches that promote healthy aging, maintain functional independence, and support both individuals and their caregivers. This literature review synthesizes key strategies from the World Health Organization's (WHO) *Clinical Consortium on Healthy Ageing 2022*, the *Be He@lthy Be Mobile* initiative, and additional scholarly sources. The focus is on the mAgeing program and the Integrated Care for Older People (ICOPE) framework, highlighting the synergistic potential of mobile health (mHealth) technologies and comprehensive care models in enhancing elderly care (WHO, 2017; WHO, 2022; WHO & ITU, 2023; Stewart et al., 2013; Hébert et al., 2003).

Integrated Care for Older People (ICOPE) Framework

The ICOPE framework is a cornerstone of elderly care, emphasizing a person-centered, integrated approach to maintain intrinsic capacity (IC) and functional ability (WHO, 2022). This model advocates for a proactive care paradigm that includes comprehensive assessments across various domains—mobility, cognition, sensory functions, psychological health, and vitality—to identify and address early signs of functional decline (WHO, 2022). By implementing personalized care plans and ensuring long-term follow-up, ICOPE aims to tailor interventions to individual needs rather than adopting a one-size-fits-all strategy (WHO, 2022).

mHealth Interventions and the mAgeing Program

The mAgeing program, developed under the WHO and International Telecommunication Union (ITU) "Be He@lthy Be Mobile" initiative, exemplifies the application of mHealth technologies in elderly care (WHO & ITU, 2023). This program leverages mobile devices, primarily through SMS or text messaging, to deliver personalized health information and support the self-management of chronic conditions (WHO & ITU, 2023). By targeting critical issues such as mobility loss, cognitive decline, hearing loss, and malnutrition, mAgeing aims to prevent or reverse declines in physical and mental capacities, thereby enabling older adults to maintain their functional ability and live independently (WHO & ITU, 2023).

Aspects of the mAgeing program include:

mHealth as a Key Approach: mHealth interventions provide accessible and cost-effective healthcare information tailored to older populations, promoting self-management of chronic conditions (WHO & ITU, 2023).

Integrated Care Approach: The mAgeing program aligns with the ICOPE guidelines by emphasizing comprehensive assessments of intrinsic capacity and developing tailored care plans. It includes messages focused on healthy living, mobility, cognitive stimulation, and fall prevention, reflecting an all-encompassing approach to elderly care (WHO & ITU, 2023).

Community-Level Interventions: mAgeing encourages self-management at the community level, supporting elderly individuals to prevent or slow declines in their physical and mental capacities. This highlights the importance of community support in managing aging-related health issues (WHO & ITU, 2023).

Use of Behavior Change Techniques: The program incorporates behavior change techniques such as reminders, encouragement for physical activity, and cognitive training. These techniques are essential for motivating older adults to adopt healthy lifestyles and manage their health more effectively (WHO & ITU, 2023).

Support for Caregivers: While the primary focus is on enabling older people to self-manage, the mAgeing program also acknowledges the role of caregivers. It suggests developing caregiver support programs to help caregivers assist elderly individuals in understanding and following mAgeing messages (WHO & ITU, 2023).

Additional Approaches in Elderly Care

Building upon the ICOPE framework and mHealth interventions, several specific approaches contribute to comprehensive elderly care:

Person-Centered Care

Person-centered care emphasizes treating elderly individuals as active participants in their own care. This approach respects the personal preferences, values, and specific health needs of older adults, rather than solely focusing on disease treatment. The aim is to empower patients by involving them in decision-making about their healthcare and tailoring treatments to their specific circumstances (Stewart et al., 2013).

Integrated Care and Multidisciplinary Teams

Integrated care involves coordinating various aspects of health and social care to address the complex health needs of older adults. Given the prevalence of MLTC (coexistence of multiple chronic conditions) in the elderly, multidisciplinary teams—consisting of doctors, nurses, physical therapists, social workers, and mental health professionals—collaborate to provide comprehensive care. This approach ensures continuity of care, reduces hospital admissions, and improves overall health outcomes (Hébert et al., 2003).

Community-Based Care

Community-based care focuses on providing services to older adults in their communities rather than institutionalizing them in care facilities. This approach is particularly beneficial in low- and middle-income countries (LMICs), where access to formal healthcare may be limited. Community health workers or primary care providers play a key role in delivering essential services such as chronic disease management, health promotion, and preventive care (Gómez-Olivé et al., 2018).

Home-Based Care

Home-based care allows older adults to receive healthcare services while staying in their own homes. This approach is particularly beneficial for elderly individuals with mobility issues or those who prefer aging in place. Services may include nursing care, physical therapy, and assistance with daily living activities. Home-based care also reduces the strain on healthcare facilities by managing chronic conditions and post-hospitalization recovery at home (Shepperd et al., 2013).

Telemedicine and Digital Health

Telemedicine and digital health tools have become increasingly important in providing remote care to older adults, especially in rural or underserved areas. Through telemedicine, healthcare providers can consult with elderly patients remotely, monitor their health conditions through wearable devices, and offer advice or treatments without requiring the patient to visit a healthcare facility. This approach is particularly useful in managing chronic conditions like hypertension, diabetes, and heart disease (George et al., 2024).

Palliative and End-of-Life Care

Palliative care focuses on improving the quality of life for older adults with serious, life-limiting illnesses by addressing physical, emotional, and spiritual needs. The goal of palliative care is not necessarily to cure, but to provide relief from symptoms such as pain, breathing difficulties, and fatigue, ensuring comfort and dignity. End-of-life care, a subset of palliative care, involves supporting individuals in their final months or weeks of life by managing symptoms and providing psychological and emotional support to both patients and their families (Dixon et al., 2015).

Rehabilitation and Physical Therapy

For older adults recovering from surgery, injury, or illness, rehabilitation services are critical in restoring mobility, strength, and independence. Physical therapy and rehabilitation programs focus on improving functional abilities, reducing the risk of falls, and maintaining overall physical health. Regular physical activity is essential for preventing further functional decline, particularly in frail elderly populations (Giné-Garriga et al., 2014).

Geriatric Mental Health Services

Mental health is an important yet often overlooked component of elderly care. Depression, anxiety, dementia, and cognitive decline are common mental health issues faced by older adults. Geriatric mental health services provide counseling, cognitive therapy, and medication management to address these concerns. Integrating mental health into the primary care of older adults helps identify issues early and prevent their escalation (Blazer, 2003).

Caregiver Support Programs

Supporting caregivers is a key aspect of elderly care, as family members and informal caregivers often provide the majority of care for older adults. Caregiver support programs offer education, respite care, and emotional support to alleviate the burden on caregivers, ensuring they are better equipped to care for their elderly loved ones while also attending to their own well-being (Pinquart & Sörensen, 2006).

Community-Level Interventions

Community-level interventions are pivotal in managing the declining physical and mental capacities of older individuals. Both the ICOPE framework and the mAgeing program emphasize the importance of community support in promoting self-management and preventing or slowing functional decline (WHO, 2017; WHO & ITU, 2023). The concept of "aging in place," which focuses on enabling older adults to remain in their homes and communities through integrated, home-based interventions, is central to these approaches (WHO, 2017).

Key strategies include:

Aging in Place: Enabling older adults to remain in their homes and communities through integrated, home-based interventions reduces the need for institutional care and supports independence (WHO, 2017).

Multimodal Exercise Programs: To combat mobility loss, WHO recommends progressive resistance strength training, balance, flexibility, and aerobic exercises (WHO, 2017).

Oral Supplemental Nutrition: For older individuals at risk of malnutrition, oral supplemental nutrition is advised to maintain adequate nutritional status (WHO, 2017).

Screening for Sensory Impairments: Regular screening for visual and hearing impairments, followed by timely interventions such as eyeglasses or hearing aids, is crucial for maintaining quality of life (WHO, 2017).

Geriatric Syndromes Management: Addressing common geriatric syndromes like urinary incontinence and fall risks through pelvic floor muscle training (PFMT), medication review, and home modifications enhances safety and well-being (WHO, 2017).

Support for Caregivers: Supporting caregivers is integral to the success of elderly care models. Both the ICOPE framework and the mAgeing program recognize the essential role caregivers play in providing care to elderly individuals (WHO, 2017; WHO & ITU, 2023). Key support strategies include:

Psychological Support and Training: Providing caregivers with psychological support and training ensures they are equipped to handle the complex needs of the elderly, reducing caregiver strain and burnout (WHO, 2017).

Integration with mHealth Technologies: Caregiver support programs integrated with mHealth technologies like mAgeing can facilitate better understanding and implementation of health messages, ensuring that caregivers can effectively support elderly individuals (WHO & ITU, 2023).

Preventive Health and Early Intervention

Preventive health and early intervention are cornerstone principles in both the ICOPE framework and the mAgeing program. These approaches advocate for interventions that delay or prevent the onset of disability through:

Promoting Physical Activity: Encouraging regular physical exercise helps maintain mobility and overall physical health (WHO, 2022; WHO & ITU, 2023).

Healthy Diets: Promoting balanced nutrition supports physical and mental health, reducing the risk of malnutrition and related health issues (WHO, 2022; WHO & ITU, 2023).

Mental Health Support: Providing mental health resources and support helps address psychological challenges, fostering cognitive resilience and emotional well-being (WHO, 2022; WHO & ITU, 2023).

Social Engagement: Facilitating social interactions and community involvement mitigates the risks of social isolation and enhances quality of life (WHO, 2022; WHO & ITU, 2023).

Early detection and personalized care plans enable timely interventions that can slow the deterioration of intrinsic capacity, thereby prolonging the independence and quality of life of older adults (WHO, 2017; WHO, 2022; WHO & ITU, 2023).

Additional Gender-Sensitive Approaches:

Gender-Specific Integrated Care Models: Address chronic disease management and psychosocial support through integrated care, particularly for elderly women facing high chronic illness burdens and social isolation (Doser Joz-Roland & Monod-Zorzi, 2010).

Tailored Primary Care Services: Enhance outpatient and home-based services to address elderly women's healthcare needs and align with their higher primary care usage and reduced hospital care reliance (Gajović et al., 2019).

Community Programs for Psychosocial Support: Develop community programs that focus on mental health and social engagement to address the higher loneliness and isolation experienced by elderly women (Ko et al., 2019).

Active Health Engagement Programs for Men: Foster preventive care and self-management skills among elderly men through health engagement initiatives that encourage proactive health behaviors (Chylińska et al., 2017).

Culturally Sensitive Healthcare Models: Address cultural barriers in accessing care, especially for elderly women in culturally sensitive regions, through culturally attuned interventions (Rodgers & Zveglich, 2021).

Caregiver Support Programs for Women: Provide respite care, training, and financial support, given the higher caregiving burdens shouldered by women, to alleviate stress and improve care quality (Haber Kern et al., 2013).

Workforce Competencies for Geriatric Care

In parallel with the development of age-appropriate guidelines, ensuring that healthcare workers possess the necessary competencies to provide quality care for the elderly is paramount (Oeseburg et al., 2015). The World Health Organization (WHO) has emphasized that specialized training and competency development are critical for creating an effective healthcare workforce to support older persons. This is particularly crucial as older

persons place increased pressure on healthcare systems globally (World Health Organization, 2020). The WHO's Integrated Care for Older People (ICOPE) framework identifies several key competencies that healthcare professionals must develop to provide high-quality geriatric care (World Health Organization, 2020). These competencies include:

Comprehensive Geriatric Assessment Skills—Healthcare providers must be trained to conduct thorough assessments that encompass not only physical health but also psychological, social, and functional status (World Health Organization, 2020). This holistic approach allows providers to address the full spectrum of an older person's healthcare needs, from managing chronic diseases to supporting mental health and social well-being. For example, a comprehensive geriatric assessment might include evaluating mobility, nutrition, and cognitive function, alongside medical history (World Health Organization, 2020).

Multidisciplinary Collaboration—Effective geriatric care requires close collaboration across multiple disciplines (World Health Organization, 2020). Nurses, doctors, social workers, and physical therapists must work together to develop and execute care plans that address the multifaceted needs of older patients. Such collaboration improves care coordination and ensures that all health and social factors are considered in the patient's treatment plan (World Health Organization, 2020).

Person-Centered Communication—Clear and sensitive communication is essential when dealing with older patients, particularly in discussing difficult subjects such as palliative care, long-term care planning, or the potential limitations of treatment. Ensuring that patients and their families are involved in the decision-making process helps maintain autonomy and dignity which is a crucial aspect of ethical geriatric care (World Health Organization, 2020).

A critical aspect of geriatric care is managing Multiple Long-Term Conditions (MLTC) and polypharmacy. Older adults frequently use multiple medications, which increases the risk of adverse drug interactions. Healthcare workers must be skilled in managing complex medication regimens to minimize risks while optimizing therapeutic outcomes (McGettigan et al., 2024). The use of pharmacovigilance—monitoring and managing potential drug interactions—is a critical competency for healthcare workers managing older patients (World Health Organization, 2020).

The WHO advocates continuous professional development (CPD) to ensure that healthcare workers remain current with the latest advances in geriatric care. This includes not only formal education but also hands-on

experience, mentorship, and participation in specialized training programs (World Health Organization, 2020). For example, medical schools and training institutions in Canada have started incorporating geriatrics into their curricula as early as the first year, ensuring that students develop the necessary competencies to manage the complex healthcare needs of aging individuals (Pon & Lai, 2014).

Furthermore, professional development should extend to nurses working in primary healthcare settings. Competency standards for nurses emphasize the importance of teamwork, communication, clinical practice, and professionalism in delivering high-quality care to older adults (American Association of Colleges of Nursing [AACN], 2021). A review of competency standards for primary healthcare nurses highlights their pivotal role in managing chronic conditions, promoting health, and facilitating interdisciplinary collaboration (Halcomb et al., 2016).

Literature Review Gaps & Analysis

The literature on elderly care, particularly in low- and middle-income countries (LMICs), reveals gaps that limit the effectiveness of care strategies for older persons. While much research focuses on high-income countries (HICs), the challenges faced by LMICs, such as inadequate healthcare infrastructure, limited financial resources, and social and cultural barriers, are often overlooked. Key gaps include a lack of case studies from LMICs on managing MLTC, insufficient integration of social determinants of health into care models, underrepresentation of non-English language research, and the challenges posed by digital health adoption in resource-constrained settings. Additionally, the role of female caregivers and the evolving family dynamics in these regions remain underexplored. Addressing these gaps is essential for developing comprehensive, context-sensitive guidelines that improve the quality of elderly care in LMICs.

Bias Toward High-Income Countries (HICs)

A major gap in the literature on elder care has to do with an overemphasis on high-income countries—at the expense of low- and middle-income countries. Numerous studies on old-age care, particularly those indexed in comprehensive databases like Ageline published by AARP, concentrate on experiences almost exclusively emanating from the developed nations, thus underplaying the special challenges that LMICs face in the management of their older populations (AARP, 2022). The healthcare systems, resources, and infrastructure in HICs are vastly different from those in LMICs, and clinical guidelines developed in resource-rich environments are often not applicable to countries with significant financial and healthcare limitations (George et al., 2024). This gap highlights the need for more inclusive research that considers the socio-economic contexts of LMICs when developing global geriatric care guidelines.

Limited Case Studies on Multiple Long-Term Conditions (MLTC) from LMICs

There has also been an obvious gap in the literature: few case studies from LMICs investigate how Multiple Long-Term Conditions (MLTC), common among the elderly, are managed. MLTC, traditionally referred to as Multimorbidity, refers to the co-occurrence of multiple chronic diseases that require integrated care approaches, which are usually difficult to implement in resource-poor settings. While much research has been conducted on MLTC in high-income countries, there is scant documentation of LMICs on how these conditions are managed with the scarce resources at hand (Asogwa et al., 2022). Such case studies are very rare, so healthcare providers cannot understand how healthcare systems in LMICs address the challenges of MLTC within their specific constraints, limiting the applicability of existing guidelines. More research and case studies from low-income countries, which will provide important input into the development of more flexible, inclusive clinical guidelines for geriatric care, are still required.

Challenges in Digital Health Adoption

Digital health technologies, such as telemedicine and electronic health records (EHRs), have the potential to transform geriatric care, particularly in low- and middle-income countries (LMICs). These tools can address critical challenges, including healthcare provider shortages and limited diagnostic capabilities, especially in rural and underserved areas. However, their adoption in LMICs remains limited due to systemic barriers. For example, a study in Uganda found that healthcare workers often lack the skills to effectively use digital health tools due to inadequate infrastructure and insufficient training in digital literacy (Kiberu et al., 2017). Similarly, research in Kenya revealed that less than 50% of rural healthcare workers were proficient in using EHRs, underscoring a significant digital divide that limits the effectiveness of these technologies (Ouma et al., 2018). To overcome these challenges, increased investment in digital infrastructure, targeted training programs, and policy support is essential to ensure that digital health tools can effectively enhance elderly care in LMICs.

Underrepresentation of Non-English Language Publications

The literature on elderly care is skewed toward English-language publications, resulting in the underrepresentation of research from non-English-speaking countries, particularly in Latin America, Asia, and Sub-Saharan Africa. This bias limits the visibility of innovative care models and practices from LMICs that could contribute valuable insights to global geriatric care (Asogwa et al., 2022). International studies in geriatric care, which focus strongly on research from developed countries, often miss important data from countries with socio-economically very different situations and healthcare infrastructure. More comprehensive literature

reviews are needed to include such studies published in languages other than English, thereby bringing much broader perspectives on the elderly and their care in different cultural and socio-economic contexts.

Neglect of Social Determinants of Health in Elderly Care

The influence of social determinants on elderly care, such as housing, nutrition, and family dynamics, is often overlooked in clinical guidelines, particularly in LMICs. In many cases, clinical guidelines tend to focus on medical interventions without considering the broader socio-economic factors that impact healthcare delivery in resource-poor settings. For example, in South Asia, the migration of younger family members to urban centers or abroad leaves elderly individuals without sufficient familial support, complicating their access to healthcare services (Nguyen et al., 2019). This gap highlights the need for clinical guidelines that account for the social determinants of health, providing a more holistic approach to geriatric care in LMICs. Addressing these factors is critical for ensuring that elderly populations receive comprehensive care that goes beyond clinical treatment.

Inadequate Focus on Nutritional Interventions

Malnutrition is also an important and often overlooked issue in the care of older adults, particularly in low- and middle-income countries where food insecurity is prevalent. Evidence also shows that malnutrition worsens the effects of chronic illnesses, such as diabetes and cardiovascular diseases, but many clinical guidelines do not include nutrition interventions in the care of older adults in an effective manner (Nguyen et al., 2019). For example, a study from Bangladesh indicated that 32% of older adults had malnutrition that worsened their already compromised chronic conditions (Nguyen et al., 2019). Although the prevailing evidence suggests that nutritional support in care is, of course, an essential component of MLTC care and improvement of health outcomes among older adults, existing academic literature on old-age care in low- and middle-income countries rarely emphasizes this.

Lack of Gender-Specific Research on Caregivers

Another important gap in the literature is the almost complete absence of studies focusing on the role of female caregivers in LMICs. Most often, women are the major caregivers to the elderly family members and assume the burden of care amidst employment and other household responsibilities. In rural Kenya, women who take on caregiving roles face many challenges due to the nonexistence of healthcare infrastructure and finance, in addition to little or no formalized training (Amp Miyachi & Masuda, 2021). Current literature leaves unexplored the specific needs of female caregivers and how tailored support structures—such as caregiver educational programs and mental health services—can be used to improve the quality of care provided to older adults.

Filling this gap is critical to developing policies and programs that will support female caregivers, thus critical to elderly care in LMICs.

Challenges in Family Dynamics and Care Models

Changes in family structures, especially in LMICs, pose challenges that are not well accommodated by current clinical guidelines. Traditionally, family members have been the primary caregivers for elders; however, the effects of migration, urbanization, and economic pressures are disrupting this model. In countries like India and Kenya, many younger family members migrate to cities or other countries, thus leaving elderly parents in the rural areas where access to health care is highly limited (Álvarez-Gálvez & Ortega-Martín, 2023). This leads to increased pressure on local health infrastructures, which are often not well-resourced and poorly equipped to deal with the very diverse needs of the elderly. Clinical guidelines must evolve in response to the shifting dynamics of families, incorporating community-centered care frameworks and telemedicine interventions to address the care deficits created by the absence of migrating family members (Nguyen et al., 2019).

Gaps in Healthcare Worker Competencies for Elderly Care

The provision of effective care for the elderly is reliant on the skills and competencies of healthcare professionals; however, various significant deficiencies impede the provision of high-quality services to older individuals. A prominent deficiency is the insufficient emphasis placed on digital health literacy. Incorporating digital tools, such as EHRs, telemedicine, and mobile health applications, into the care of the elderly often comes with a lack of training for healthcare workers in using the technologies, especially in rural areas. There is, therefore, a limitation in using technology to enhance care delivery and monitoring.

Another major gap is the lack of competencies regarding cultural sensitivity and diversity. The current training frameworks do not adequately equip health professionals with the ability to address the various cultural, linguistic, and socio-economic backgrounds of the older patient population. This deficiency notably hinders the delivery of culturally appropriate care, which is essential in multicultural societies where appreciation and respect for the diversity of patients can dramatically affect health outcomes.

Existing competence models reveal a large gap in placing mental health at the forefront of care among the elderly. Disorders of mental health such as depression, anxiety, and cognitive decline are prevalent among the older members of society; however, healthcare professionals are not usually well-trained to diagnose and treat these problems adequately. It is this gap that accounts for underdiagnosis and inappropriate management of the mental health problems in this group of people.

As stated earlier, inconsideration of the social determinants of health further compounds challenges in elderly care. Social aspects such as housing stability, access to health services, and social networks for support are generally not well represented within the training curricula of health professionals. Consequently, these practitioners may fail to appreciate broader socio-economic factors that play a crucial role in affecting the health and wellbeing of older people. In addition, there is a lack of expertise in end-of-life care and ethical decision-making among health professionals. Training programs often lack comprehensive components in palliative care, ethical decision-making, and effective communication skills in discussing long-term care and end-of-life options with older adults and their families. This gap in education limits the ability to provide compassionate and patient-centered care during critical and sensitive life moments.

Additional Gaps

Another gap is the limitation of workforce competencies with regards to geriatric care, dementia care, and palliative care. Most healthcare providers have very limited specialized training to address the complex needs of older persons. In most African countries, for instance, there is an inadequate number of trained professionals to deal with the intricate health problems of the older adult population, which worsens the challenge of delivering effective care.

It is also agreed that there is very limited articulation of interprofessional collaboration in guidelines. While guidelines generally place physicians at the center, they poorly attend to the contribution of nurses, social workers, and other team members. Such omissions constrain the holistic care approach necessary for managing the multifaceted health issues in older adults and results in less effective care being provided.

Most are not sufficiently focusing on mental health and social well-being. The domains of emotional and social health, such as loneliness and social isolation, do not get much coverage, although they largely determine health outcomes. This is a big gap because those factors can massively raise or lower the general well-being and quality of life for older adults.

There are the limitations of policy and infrastructure in implementing the guidelines. Poor funding, unsupportive policies, and poor healthcare infrastructure create barriers to effective application of standards of care. Rural areas, in particular, may not have access to basic health services, and so the consistent application of guideline recommendations becomes very challenging.

Another challenge will be data and research deficits, since there is an apparent need for more region-specific data to inform guidelines. The amount of research on aging populations in certain regions is limited, leading to gaps in knowledge regarding prevalent health problems and effective interventions—this, in turn, hinders the development of evidence-based practices in care.

The legal and ethical awareness among healthcare providers is usually quite low. Most of them are not properly informed about the legal and ethical issues related to elder care, including the issues of consent, capacity, and the prevention of elder abuse. Lack of awareness may lead to ethical dilemmas and suboptimal protection for the elderly patient.

Moreover, general guidelines usually do not take special population needs into consideration. The guidelines tend to overlook the special needs of such groups as older adults with disabilities, people living in extreme poverty, or migrants and refugees. This creates gaps in care for such vulnerable populations, where tailored interventions are needed to respond to their peculiar situations in life.

Case Studies: Kenya, Uganda, Rwanda, Yemen and Tunisia

These case studies from Kenya, Uganda, Rwanda, Yemen, and Tunisia point out many of the challenges involved in providing care to older people. These studies then reveal systemic barriers, resource shortages, and social factors holding back the effectiveness of elderly care in these regions.

In Kenya, the older adult population makes up only about 4.2% of the entire population—2.2 million people aged 60 and above—according to the 2020 census (UN Department of Economic and Social Affairs, 2019). Programs like the Older Persons Cash Transfer (OPCT) and Inua Jamii 70+ are very critical in the delivery of support to reduce poverty and food insecurity, but so many among the aged continue in stringent situations without enough support. Most of them rely on small-scale farming, with basic needs often unmet. Informal caregiving, mostly performed by women such as daughters or daughters-in-law, is prevalent but unpaid and not supported for formal training (Amp Miyachi & Masuda, 2021). Geriatric services are few, and older adults receive most of their care in rural clinics that lack such specialized staff and equipment.

The double burden of non-communicable diseases like diabetes added to infectious diseases adds to the strain aggravated by economic instability and climate challenges (Chen et al., 2021). Such challenges will further present the need for systems of long-term care and increased investment in healthcare infrastructure. In Uganda, older adults make up about 4.3% of the population. About 85% of the elderly are engaged in farming (State of Older Persons in Uganda Situational Analysis Report, 2020). While financial support programs, such as the

Social Assistance Grants for Empowerment and the Senior Citizens Grant, primarily target those aged 80 and above, many older persons continue to depend on informal family caregivers. These caregivers themselves face economic pressures, which make it difficult to provide consistent care.

Older adults have continued to contribute to their communities with the care of grandchildren and participation in economic activities, while remaining at risk for neglect, abuse, and poor access to healthcare. Uganda's healthcare system does not have the resources and trained professionals needed to effectively manage chronic conditions and Multiple Long-Term Conditions (MLTC). In Rwanda, the older adult population represents 5.1% of the country's population—approximately 663,253 people aged 60 years and older. Most of them are exposed to poverty, and access to health care is constrained; only 54% of essential health services are available for the older adult population. Many work in the informal sector, with surprising estimates of 75% being part of informal labor markets (HelpAge International & Nsindagiza Organization, 2020). Rwanda provides some income support under the National Older Persons Policy of Rwanda, but the proportion of older people is low, and the country has no universal pension system. These limitations leave much of the elderly population without resources or care and flag the need for more coordinated policy and healthcare support.

Years of conflict in Yemen have significantly weakened healthcare systems, leaving many older adults without access to essential medications or trained professionals. Poor control of chronic diseases, such as diabetes and hypertension, and informal family caregiving are acutely strained by economic instability (HelpAge International, 2023). The healthcare system has been fragmented with little collaboration among providers, rendering care to be inconsistent and hence inadequately oriented. Older adults face significant risks of neglect and poverty, indicating the need for coordinated efforts and social protection programs.

The major challenge in Tunisia is that the specialty of geriatrics has not yet been developed, and few healthcare professionals are trained to take care of complex conditions such as dementia or Multiple Long-Term Conditions (MLTC) (Hammami et al., 2020). Family members, who often take on the role of caregivers, experience burnout due to a lack of training and support. All this makes the health system poorly prepared to offer person-centered care, leaving many of the elderly with poorly managed chronic diseases and issues linked to polypharmacy.

This confirms the need for geriatrics specialty training and support systems for caregivers. These vignettes present common challenges in these countries, such as multiple chronic conditions, hunger, and change in

family structure. In many African countries—for example, Kenya and Uganda—women caregivers carry heavy burdens without institutional or financial support (Amp Miyachi & Masuda, 2021). Social factors such as housing, family support, and economic security are big determinants of health; yet these areas are often overlooked (Nguyen et al., 2019). Malnutrition remains the major problem, as is evidenced by the studies from Bangladesh, which have shown that malnutrition affects 32% of older adults with the worsening of their chronic diseases (Nguyen et al., 2019).

Discussion

Training Programs to Strengthen Elderly Care in LMICs

The proposed training programs aim to enhance elderly care in low- and middle-income countries (LMICs) by equipping healthcare providers with practical skills and clear guidelines. By combining live (synchronous) and self-paced (asynchronous) learning options, this program ensures healthcare providers can gain and apply essential skills, regardless of location or resource limitations.

Synchronous Courses for Hands-On Learning

The synchronous courses focus on building essential skills in a three-step process: **Anchoring Foundational Knowledge; Adding Skills; and Applying These Skills in Practice**. This structure provides participants with a clear, step-by-step understanding of how to care for elderly people.

- **Population Overview:** This introductory section offers healthcare providers an understanding of the specific challenges faced by aging populations in LMICs. By learning about these demographics, providers can better anticipate the needs of the elderly in their communities.
- **Clinical Guidelines: Literature Review:** This module introduces healthcare providers to globally recognized elderly care guidelines, such as the *eTRIGGER* program by the International Association of Gerontology and Geriatrics (IAGG), which emphasizes geriatric emergency care and practical applications in resource-limited environments (IAGG, n.d.), and the WHO's *iSupport* program for carers of people living with dementia, which offers evidence-based guidance on managing dementia-related challenges (WHO, 2019).
- **Physical Health and Workforce Competencies/Checklist:** Providers are trained to conduct physical health assessments, manage chronic conditions, and follow standardized checklists to ensure consistent evaluations, enabling reliable care delivery. These principles align with the practical focus of the *eTRIGGER* program, which equips healthcare providers with actionable skills in elderly care (IAGG, n.d.).
- **Emotional Health and Workforce Competencies/Checklist:** This section focuses on mental health needs, including screening for depression, social isolation, and dementia using structured checklists. The *iSupport* program's emphasis on addressing dementia-related emotional and cognitive health issues serves as a foundational reference for this module (WHO, 2019).

- **System and Policy Issues:** Providers explore healthcare system challenges in elderly care, including policy barriers and resource constraints. This module encourages collaboration with local leaders and community organizations to advocate for stronger support for elderly care services.
- **Knowledge Assessment: Certificate of Knowledge:** After completing the synchronous courses, healthcare providers undergo a knowledge assessment to earn a Certificate of Knowledge. This certification confirms foundational understanding and promotes standardized elderly care across LMICs.
- **Local Application Strategy and Case Studies: Certificate of Competency:** The Local Application Strategy enhances practical skills using real-life case studies from LMICs. Successfully completing this segment leads to a Certificate of Competency, validating the ability to apply elderly care skills in local contexts.

Asynchronous Courses for Flexible Learning

The asynchronous courses offer self-paced modules that reinforce core concepts and skills, allowing healthcare providers to revisit topics as needed.

- **Population Overview:** This module reinforces demographic trends and the specific needs of aging populations in LMICs.
- **Clinical Guidelines: Literature Review:** Participants explore global elderly care guidelines, including the *eTRIGGER* and *iSupport* programs, with a focus on adapting practices to LMIC settings (IAGG, n.d.; WHO, 2019).
- **Physical Health and Workforce Competencies/Checklist:** Providers gain step-by-step guidance for managing chronic conditions and performing preventive care for elderly patients.
- **Emotional Health and Workforce Competencies/Checklist:** This section strengthens mental health assessment skills to identify and address cognitive and emotional issues.
- **System and Policy Issues:** This module encourages participants to consider systemic and policy challenges in LMICs, promoting local partnerships and advocacy efforts for better elderly care access.

- **Knowledge Assessment and Competency Recognition:** Participants complete assessments to earn the Certificate of Knowledge and Certificate of Competency, validating both theoretical understanding and practical skills.

Outcomes of the Training Model

This combined approach of synchronous and asynchronous courses offers a comprehensive foundation in elderly care practices. By equipping healthcare providers with standardized guidelines and skills tailored for LMICs, the training model promotes improved elderly care quality, even in resource-constrained environments. Programs such as *eTRIGGER* (IAGG, n.d.) and *iSupport* (WHO, 2019) provide essential models for the development and implementation of such training initiatives. Through certifications, healthcare systems can verify consistent provider standards, contributing to better health outcomes for elderly populations.

Recommendations

Policy Recommendations

Training and Digital Support for Mental Health in Low-Income Countries with Aging Populations

To increase access to mental health care for elderly populations, and considering low-income countries, the strategy includes training primary healthcare providers and implementing affordable, accessible digital solutions.

Train Primary Healthcare Providers

- **Conduct Cost-Effective Training Sessions**

Utilize Local Health Facilities: Collaborate with local hospitals, clinics, or community health centers to use their facilities for training sessions. This approach minimizes costs related to renting spaces and allows sessions to be held in familiar environments for the healthcare providers.

Train Community Health Workers as Trainers: Identify experienced healthcare providers within the community who can serve as local trainers, reducing the need for external trainers and fostering a sustainable model. Using local trainers also builds capacity within the community and makes ongoing training more feasible.

Develop Relevant, Simple Materials: Create training materials that focus on the mental health issues most common among elderly populations, like depression and anxiety. Print materials if internet access is limited or use mobile-friendly formats for easy access. Keep the content practical and concise, focusing on simple, low-cost interventions.

- **Introduce Simple Mental Health Screening Tools**

Use Low-Cost Screening Tools: Provide tools like the Geriatric Depression Scale (GDS) or the Mini-Mental State Examination (MMSE), which are effective, low-cost, and easy to administer. These can be distributed as printed forms or digital templates, allowing healthcare providers to screen elderly patients quickly and accurately.

Integrate Screening into Routine Care: Encourage healthcare workers to incorporate mental health screenings during regular check-ups or consultations. Routine screenings help identify mental health issues early, making it easier to provide timely support.

Remote Training and Mentorship with Project ECHO: Leverage Project ECHO's video conferencing model to offer remote mentorship and guidance to rural healthcare providers. This model connects local providers with mental health experts, who can support them in using these tools effectively, even if the healthcare workers are in remote areas (Arora et al., 2011).

- **Enhance Communication Skills Through Local Training**

Organize Small, Interactive Workshops: Conduct small group workshops at local health centers to teach empathetic communication skills. Include role-playing exercises to help providers practice having sensitive conversations about mental health with elderly patients and their families.

On-the-Job Training with Mobile Apps: If digital resources are available, implement mobile-based training modules (like India's SMART Mental Health Project) to provide on-the-job support. This app-based training can offer quick refreshers on communication techniques and mental health management for healthcare providers as they work in the field (Patel et al., 2018).

Implement Affordable Digital Mental Health Platforms

- **Select Cost-Effective, Low-Bandwidth Digital Tools**

Choose Mobile Apps or SMS-Based Solutions: In low-income areas, mobile health (mHealth) apps or SMS-based platforms are effective options. These tools work well even with low internet bandwidth and are accessible to elderly individuals with basic mobile devices.

Use Localized and Culturally Adapted Tools: Where possible, adapt these tools to fit cultural needs and sensitivities. For example, the iBobbly app was tailored to Indigenous Australians, showing how culturally relevant mental health tools can reach specific groups effectively. Similar adaptations can be made for low-income countries to align with cultural norms (Tighe et al., 2020).

Collaborate with Local Organizations: Partner with NGOs or government programs to distribute these digital tools, which can reduce costs and ensure wider distribution.

- **Provide Basic Usability Training for Elderly Users and Caregivers**

Offer Community-Based Demonstrations: Hold local demonstrations in community centers or during group meetings to show elderly individuals and their caregivers how to use these digital tools. Keep these sessions straightforward, covering only the essential functions of each tool.

Distribute Simple User Guides: Provide printed or pictorial user guides that are easy to understand. For elderly users who may have limited digital experience, this helps ensure that they can navigate the tools effectively.

Follow the MindSpot Model for User-Friendly Design: Use the principles of the MindSpot Health platform to ensure user-friendly interfaces. Adapt the tool's features to minimize text and include audio or visual aids, which can make the tool accessible to elderly individuals with low literacy levels (MindSpot, 2020).

- **Expand Access to Digital Platforms in Remote Areas**

Implement SMS-Only Options for Very Low-Infrastructure Regions: In areas without internet connectivity, SMS-based tools can be an effective way to deliver mental health messages and self-care reminders. This is particularly relevant in rural settings, where smartphone access is limited.

Leverage Telemedicine for Low-Cost Mental Health Support: In India, for example, telepsychiatry has proven effective in reducing barriers to access by enabling virtual consultations that minimize the need for travel, lower financial burdens, and enhance continuity of care. This approach has been especially beneficial for elderly patients facing mobility challenges, limited social support, and chronic comorbidities (Kalaivanan et al., 2021)

Recruit Local Health Workers to Promote Digital Tools: Encourage community health workers to visit homes in their areas to promote the use of these mental health tools. They can assist elderly individuals with downloading or setting up apps, ensuring that even those with limited digital literacy can access mental health resources.

Expected Outcomes

1. **Enhanced Access to Mental Health Support for Elderly Populations:** These recommendations aim to increase access to mental health care in low-income settings, enabling earlier diagnosis and intervention for elderly individuals. By adapting the NHS digital mental health model from the UK, countries can provide a similar level of mental health support at lower cost (NHS, 2019).

2. **Reduced Burden on In-Person Care Providers:** By using digital mental health platforms, the need for in-person visits is minimized, reducing the strain on limited healthcare resources and allowing continuous remote support. Programs like MindSpot in Australia show how digital tools can offer significant mental health support, even in areas with limited in-person services (MindSpot, 2020).

Policy Systems Recommendations

Issue	Recommendation
Limited access to mental health care for elderly populations in low-income countries.	Train primary healthcare providers and community health workers (CHWs) to deliver mental health care through cost-effective, local training programs.
High costs associated with training healthcare providers in mental health care.	Utilize existing local hospitals, clinics, and community centers for training to minimize costs and ensure a familiar learning environment.
Shortage of mental health specialists in rural and underserved areas.	Train CHWs as local trainers to build community capacity and make ongoing training more sustainable.
Lack of simple, relevant training materials for mental health care.	Develop practical, low-cost training materials that focus on depression, anxiety, and other common elderly mental health concerns. Offer printed and mobile-friendly formats.
Elderly individuals often go undiagnosed for mental health conditions.	Introduce low-cost mental health screening tools like the Geriatric Depression Scale (GDS) and Mini-Mental State Examination (MMSE) for routine use in check-ups.
Mental health conditions in elderly populations are not detected early.	Integrate mental health screenings into routine care to ensure early identification and intervention for mental health concerns.
Rural healthcare workers lack access to mentorship and guidance in mental health care.	Implement Project ECHO's remote training model to connect rural healthcare providers with mental health specialists for continuous mentorship and knowledge sharing.
Healthcare providers struggle with communication when discussing mental health with elderly patients.	Conduct interactive workshops at local health centers to improve empathetic communication skills through role-playing exercises.
On-the-job support for mental health management is lacking.	Utilize mobile-based training modules, such as India's SMART Mental Health Project, to offer continuous training and quick refreshers for healthcare providers.
Limited access to mental health services due to infrastructure and internet challenges.	Implement cost-effective, low-bandwidth digital solutions such as mobile health (mHealth) apps and SMS-based platforms.
Mental health tools are not always adapted to local cultural norms.	Develop and localize digital mental health tools to fit cultural sensitivities, similar to how the iBobby app was tailored for Indigenous Australians.
Mental health apps and digital platforms have limited reach due to lack of distribution.	Partner with NGOs and government agencies to distribute digital mental health tools at scale.
Elderly individuals struggle with using digital health tools.	Provide community-based demonstrations and distribute simple, pictorial user guides to help elderly users and caregivers navigate digital mental health tools.
Digital mental health tools are often not user-friendly for elderly populations.	Follow the MindSpot model for user-friendly design, including audio and visual aids to accommodate low literacy levels.
Remote and rural elderly populations lack access to mental health services.	Implement SMS-based mental health tools for areas with limited internet connectivity and promote telemedicine consultations for elderly patients.
Elderly patients in remote areas struggle with mobility and access to mental health care.	Expand telepsychiatry programs to reduce travel barriers and provide continuous virtual care, especially for those with chronic conditions.
Elderly individuals with low digital literacy may not engage with digital mental health tools.	Recruit community health workers to visit homes and assist elderly individuals with downloading and setting up mental health apps.
Overburdened healthcare systems struggle to provide in-person mental health support.	Use digital mental health platforms to reduce the strain on in-person providers and allow remote support, following models like MindSpot in Australia.

Health Care Recommendations

Assessing Functional and Health Status for Elderly Populations in Low-Income Countries

Conduct Functional and Health Assessments

- **Using the WHO Checklist for Functional Capacity and Daily Activities**

Implementing the WHO ICOPE Screening Tool: The WHO's Integrated Care for Older People (ICOPE) framework provides a checklist for assessing Activities of Daily Living (ADLs) and functional capacity, which can be used to evaluate both Physical ADLs (PADLs) like mobility and Instrumental ADLs (IADLs) like meal preparation (WHO, 2019).

Training Community Health Workers (CHWs): Use a simplified version of the ICOPE checklist that community health workers can learn quickly, focusing on basic daily activities and sensory impairments.

Monitoring with Paper-Based or Mobile-Enabled Tools: If digital resources are limited, provide paper checklists that can be filled out during each assessment visit. In areas with mobile connectivity, a digital app or form can track results over time, enabling better monitoring of functional decline and the need for interventions (WHO, 2019).

- **Conducting Routine Physical and Mental Health Evaluations**

Implementing Basic Physical Health Screenings: Encourage healthcare providers or CHWs to conduct regular screenings for chronic conditions, such as blood pressure checks and blood sugar monitoring, to detect common issues like hypertension and diabetes early (Giné-Garriga et al., 2014).

Using Simple Mental Health Assessments: Equip CHWs with brief mental health assessment tools, such as the Geriatric Depression Scale (GDS) or Mini-Mental State Examination (MMSE), to evaluate cognitive health. These tools help detect early signs of cognitive decline or depression, which are common among older people. (WHO, 2019).

Incorporating self-reporting and family participation in health assessments is a critical strategy, particularly for evaluating mental health and overall well-being in older adults. Family members, who often have close and continuous contact with elderly individuals, can provide valuable insights into changes in behavior, activity levels, and health status. Research has shown that structured interviews or questionnaires involving family caregivers can significantly improve the accuracy of assessments, especially for older adults with cognitive impairments or communication difficulties (Clare et al., 2013).

- **Identify Levels of Care Needed Based on Functional Ability**

Stratifying Care Needs into Tiers: Based on assessment results, categorize elderly individuals into care levels: independent; partially dependent; or fully dependent. For example, elderly individuals identified as “partially dependent” can benefit from in-home assistance or community support, while “fully dependent” individuals require more intensive interventions.

Integrating Community-Based Support for Each Tier: Once assessed, connect elderly individuals with available support options based on their care level. For instance, elderly individuals who are largely independent can be referred to community social groups, while those needing more help could be linked with local caregiving volunteers or family members (Rural Health Information Hub, 2024).

Using WHO’s ADL Framework: WHO’s framework for Physical and Instrumental activities of daily living (ADLs) provides criteria for determining care needs based on functional independence, helping to ensure elderly individuals receive appropriate support while maximizing their independence (WHO, 2019).

Build Community and Social Support Networks

- **Engage Family and Local Community Members**

Involving Family in Care Plans: Engage family members in the assessment process to ensure they understand the elderly individual's care needs. This can include sharing results with family members and discussing care expectations, particularly in rural areas where family-based care is common (Rural Health Information Hub, 2024).

Engaging Community Leaders and Volunteers: Partnering with local leaders, NGOs, and volunteers is essential for creating a sustainable elderly support system, particularly for those lacking family assistance. Research highlights that volunteer-supported programs can enhance older adults' well-being by providing home visits, companionship, and practical assistance, thereby reducing social isolation and improving community integration (Fočić, 2018).

Community support groups play a crucial role in fostering social engagement and emotional well-being among older adults. Programs like “Long Live the Elderly!” in Belgium and senior volunteering

initiatives in China have demonstrated that structured peer interactions significantly reduce loneliness, improve mental health, and encourage active aging (Van de Weghe, 2023), (Shea, 2017).

- **Adapt Solutions for Urban vs. Rural Needs**

Customizing Programs for Rural Areas: In rural regions where healthcare access is more limited, focus on using mobile outreach or village-based health workers to conduct assessments and provide ongoing care. Train these workers in basic health and functional assessments to address the lack of infrastructure (Giné-Garriga et al., 2014).

Addressing Urban Isolation: In urban areas where elderly individuals may live alone, coordinate with local NGOs to provide regular home visits. Such programs can help identify health needs early and provide essential social interaction (WHO, 2019).

- **Case Studies and Examples**

ICOPE Community Screening in Rwanda: The WHO's ICOPE community screening model has been piloted in Rwanda, where local health workers assess ADLs and cognitive functions in elderly individuals. This model highlights how low-cost screening can detect functional decline early, enabling timely intervention (WHO, 2019).

ADL and PADL Screening in South Africa: In rural South Africa, a community health worker program assesses elderly individuals' ability to perform PADLs and IADLs, such as cooking and personal care, to identify those needing additional support.

Social Network Assessment in Kenya: In Kenya, a program involving local leaders assesses elderly individuals' social networks and access to community resources, identifying those at high risk of social isolation. Volunteers and NGOs collaborate to provide social support and basic care as needed.

Expected Outcomes

Early Identification of Functional Decline: By using WHO's ICOPE and ADL frameworks, healthcare providers and community health workers can identify functional decline early, enabling better-targeted interventions (WHO, 2019).

Stratified Care Based on Functional Needs: The tiered approach ensures that elderly individuals receive care tailored to their level of dependency, maximizing resource efficiency and reducing the risk of over- or under-treatment (Martinez, 2017).

Enhanced Community Support for Elderly Individuals: Through family involvement and local volunteer networks, elderly individuals benefit from a stronger support system, reducing social isolation and improving overall well-being (Maciuszek, 2017).

Low Income Country Recommendations

Community and Social Network Support for Elderly Populations in Low-Income Countries.

- **Build Strong Family and Community Support Systems**

Conduct Family Consultations: Encourage healthcare providers and community health workers to involve family members in care assessments and planning for elderly individuals. This engagement helps ensure that family members understand the specific care needs and can provide consistent support.

Provide Family Training on Elderly Care: Offer simple, community-based training sessions to help family members learn basic caregiving skills, such as assisting with mobility, personal care, and recognizing health issues. This training can be done through local health centers or community gatherings, with healthcare workers demonstrating techniques in person.

Encourage Family Involvement in Decision-Making: Include family members in discussions about the elderly person's care needs, whether it involves healthcare, mobility support, or companionship. This involvement improves coordination and helps family members feel responsible for providing supportive care (World Health Organization, 2019).

- **Establish Community Elderly Support Networks**

Identify Community Volunteers and Local Leaders: Partner with local leaders, such as religious figures, community elders, and NGO representatives, to identify community volunteers who can help support elderly individuals. Volunteers may assist with transportation, household tasks, or companionship, depending on each elder's needs.

Set Up Elderly Peer Support Groups: Establishing elderly peer support groups can serve as a valuable intervention in improving mental health outcomes, particularly for those experiencing isolation. Organizing these groups in local community centers or health facilities allows elderly individuals to share experiences and engage in social activities, reducing feelings of loneliness and enhancing their emotional well-being. The Agewell program, established in Cape Town, South Africa, and recognized by the World Health Organization (WHO) in 2015, exemplifies the success of peer-to-peer support models in improving the quality of life for older adults. By fostering meaningful connections and addressing practical and emotional needs, such programs have proven highly effective in vulnerable, low-income populations (Geffen et al., 2019; WHO, 2015).

Assign Community Health Workers (CHWs) as Point Persons: Designate CHWs to monitor elderly individuals in their assigned areas, helping to connect them with volunteers or support services when necessary. CHWs can check in on elderly individuals and coordinate with family members and volunteers to ensure the elder's needs are met.

- **Address Urban and Rural Needs Separately**

Urban Areas: In urban areas, focus on identifying isolated elderly individuals and connecting them with nearby social services, NGOs, or volunteer groups. Many elderly people in urban settings may live alone; providing them with a regular visitor or social contact helps alleviate loneliness.

Rural Areas: In rural regions, establish village-based support networks by coordinating with local health centers or schools to engage volunteers. Community health workers can facilitate regular visits to check on elderly individuals who may live far from centralized services. Rural areas can also benefit from group meetings held at a central location to foster socialization and provide health education (Giné-Garriga et al., 2014).

- **Develop Culturally Sensitive Social Engagement Programs**

Organize Culturally Appropriate Activities: Create group activities that align with cultural norms, such as traditional games, storytelling, or group exercises. These activities encourage elderly participation and foster a sense of community. Local leaders can help tailor programs to fit cultural expectations and traditions.

Integrate Social Engagement into Religious or Community Events: Incorporate elderly socialization activities into existing community gatherings, such as religious services or market days, to increase participation. This approach allows elderly individuals to connect with others in familiar settings, which can be particularly beneficial for those who are more socially withdrawn (World Health Organization, 2019).

Involve Local NGOs or Faith-Based Organizations: Partner with local NGOs and faith-based organizations that already work with elderly populations. These organizations often have established networks and trust within communities, making it easier to implement programs that address social isolation.

- **Create Support Systems for Caregivers**

Provide Respite Care and Temporary Relief: Offer respite services to caregivers, where trained volunteers or community health workers temporarily take over caregiving responsibilities. This helps reduce burnout among family caregivers and ensures that the elderly individual's needs are continuously met (Huang et al., 2021).

Organize Caregiver Support Groups: Set up local support groups where caregivers can share experiences, challenges, and coping strategies. These groups offer emotional support and allow caregivers to connect with others facing similar challenges, reducing stress and enhancing their ability to provide long-term care (Parkinson et al., 2020).

Encourage Digital Support Systems for Remote Family Members: In cases where family members are geographically distant, digital platforms (such as SMS-based updates from CHWs) can be used to keep family members informed about the elder's well-being and involve them in care coordination. This approach is particularly useful in rural areas where younger family members may have left the area for work (Malhotra et al., 2022).

Expected Outcomes

Reduced Social Isolation and Improved Mental Health: By building family and community support networks, elderly individuals gain regular social contact, which helps to alleviate loneliness and reduce the risk of depression and anxiety. Studies have shown that social engagement can significantly improve mental well-being in older adults.

Enhanced Caregiver Support and Reduced Burnout: By providing caregiver support programs, family members and informal caregivers will have access to resources and respite care, reducing caregiver burden and enhancing the overall quality of elderly care.

Tailored Urban and Rural Solutions: Customized approaches for urban and rural elderly populations ensure that elderly individuals, regardless of location, have access to the necessary social and community support to maintain quality of life.

Recommendations for Caregivers

Issue	Recommendation
Caregivers may not have the skills to support elderly individuals effectively.	Provide family training on elderly care, including mobility assistance, personal care, and recognizing health issues through community-based training sessions.
Family members may not be involved in care planning, leading to gaps in support.	Conduct family consultations to ensure they understand the elderly person's needs and responsibilities in their care.
Elderly individuals with cognitive impairments may not communicate their health needs clearly.	Use structured interviews or questionnaires with family members to improve assessment accuracy.
Caregivers may experience burnout due to lack of respite.	Provide respite care services where trained volunteers or community health workers can temporarily relieve caregivers.
Social isolation among elderly individuals contributes to poor mental health.	Establish elderly peer support groups to promote social interaction and reduce loneliness.
Limited community engagement in elderly care.	Identify and train local volunteers and religious/community leaders to assist with companionship and support services.
Elderly individuals in rural areas lack healthcare access.	Set up village-based support networks with regular visits from community health workers (CHWs) to monitor health and provide assistance.
Urban elderly populations may experience isolation due to living alone.	Develop NGO-led programs that coordinate home visits and social activities to provide companionship and health monitoring.
Elderly individuals need a supportive environment for aging in place.	Involve family members in making minor home modifications, such as clearing pathways and securing furniture, to improve safety.
Caregivers may lack access to guidance and updates about the elder's well-being.	Implement digital support systems, such as SMS-based updates from CHWs, for geographically distant family members.

Establish Multidisciplinary Teams

- **Develop Collaborative Care Teams with Local Resources**

Form Teams Using Existing Personnel: Assemble teams that include doctors, nurses, community health workers (CHWs), social workers, and local volunteers to provide comprehensive coverage of elderly health needs. This aligns with the WHO's policy framework on healthy aging, which emphasizes community-centered, resource-efficient care models suitable for low-income settings (Beard et al., 2016).

Define Roles and Responsibilities: Assign specific roles to each team member to cover health, social, and support needs, as recommended by the ECHO model, which uses role distribution to maximize resource efficiency (Arora et al., 2011).

Provide Cross-Training for Team Members: Equip team members with basic cross-functional skills, such as mental health screening and mobility assistance, to support holistic care, a strategy supported by the WHO's call for capacity-building in aging care (Beard et al., 2016).

- **Coordinate Primary, Secondary, and Community Care**

Link Local Clinics with Community Health Services: Connect local clinics with community health programs to create a continuum of care, as seen in the ECHO model, where primary providers collaborate with specialists to extend care access in underserved areas (Arora et al., 2011).

Use Referral Pathways to Access Specialized Services: Create referral pathways for complex cases that require specialist care, a recommendation supported by mental health integration models in low-resource settings, which advocate for efficient referrals to minimize delays (Gureje & Alem, 2000).

Implement Mobile Health (mHealth) for Coordination: Use SMS and mobile apps to facilitate real-time updates and coordination, following WHO's guidance on using mHealth for enhancing care continuity in rural areas (World Health Organization, 2019).

Integrate Social and Health Services

- **Combine Medical, Social, and Preventive Services**

Collaborate with Local NGOs and Community Groups: Partner with NGOs and community groups to address broader social needs, aligning with WHO's recommendation to address social determinants of health in aging care (Beard et al., 2016).

Include Preventive Health Services: Incorporate preventive care services like exercise and nutrition support, as physical activity has proven benefits in reducing functional decline among elderly populations (Giné-Garriga et al., 2014).

Address Social Determinants of Health: Provide support with basic needs such as housing, transportation, and food, key social determinants identified in rural elderly care initiatives (Hamiduzzaman et al., 2021).

- **Promote Community-Based Rehabilitation Programs**

Set Up Community Rehabilitation Sessions: Implement group rehabilitation programs in community spaces to improve mobility and function, especially beneficial for elderly individuals as seen in community-based aging studies (Fang et al., 2016).

Include Family Members in Rehabilitation Programs: Teach family members basic rehabilitation exercises to support elderly relatives, reinforcing the WHO's emphasis on involving family and community in elderly care (Beard et al., 2016).

Implement Continuous Monitoring and Follow-Up

- **Develop Simple Tracking and Monitoring Systems**

Use Paper or Digital Records for Patient Tracking: Maintain centralized records for each patient to track medical and social needs, a recommended practice for continuity of care in WHO's guidelines on healthy aging (Beard et al., 2016).

Schedule Regular Check-Ins with CHWs: Assign CHWs to monitor chronic conditions through monthly check-ins, like ECHO's strategy of using regular remote follow-ups to extend care reach (Arora et al., 2011).

Utilize mHealth for Monitoring Chronic Conditions: Implement mHealth applications to track conditions like hypertension and diabetes, ensuring regular oversight in low-resource settings (World Health Organization, 2019).

- **Evaluate Care Plans Regularly for Adjustments**

Conduct quarterly team reviews to regularly update care plans, reflecting changes in elderly patients' health and environmental conditions. These reviews support a multidisciplinary approach, essential for managing the complex health needs of older adults, and have been shown to optimize outcomes by reducing emergency visits and improving continuity of care (Chander et al., 2021).

Involve Family Members in Reassessment: Engage family members during reassessment to provide input on health changes, aligning with WHO's emphasis on family involvement for holistic aging care (Beard et al., 2016).

Adapt to Evolving Needs: Regularly modify care plans as conditions progress, ensuring care remains relevant and individualized for the elderly (Baldissera & Camarinha-Matos, 2019).

Expected Outcomes

Improved Quality of Care Through Coordinated Efforts: The use of multidisciplinary teams and coordinated systems supports comprehensive care that addresses both medical and social needs, providing a high standard of elderly care in low-income settings (Beard et al., 2016).

Reduced Hospital Readmissions and Enhanced Preventive Care: The integration of preventive services, such as rehabilitation and social support, reduces health deterioration and hospital readmissions, contributing to elderly persons' independence (World Health Organization, 2019).

Efficient Resource Use in Low-Income Settings: Relying on CHWs, family caregivers, and community-based resources creates a sustainable model of care for elderly populations with limited resources (Giné-Garriga et al., 2014).

Assessing Living Conditions and Addressing Environmental Needs for Elderly Populations in Low-Income Countries

Evaluate Living Conditions for Safety and Accessibility

- **Conduct Home Assessments for Safety Risks**

Use Basic Checklists for Safety Assessment: Train community health workers (CHWs) or local volunteers to conduct home assessments using a simple checklist that covers common safety risks, such as loose rugs, poor lighting, or lack of grab bars. The World Health Organization's guidelines on healthy aging emphasize the importance of safe home environments to prevent falls and accidents (World Health Organization, 2019).

Identify Structural Needs: For homes requiring significant modifications, identify areas where small changes, such as adding handrails, improving lighting, or reducing obstacles, can enhance safety. This approach is cost-effective and can be tailored to low-income settings by focusing on high-impact, low-cost modifications (Fang et al., 2016).

Engage Family Members in Safety Improvements: Involve family members in making basic safety improvements to the home, such as decluttering pathways or securing loose furniture, which can be done with minimal resources.

- **Adapt Home Environments for Accessibility**

Create Accessible Pathways and Entrances: Ensure pathways within the home are clear and accessible, and, where possible, install ramps for elderly individuals with mobility challenges. CHWs can work with local carpenters or NGOs to build simple ramps, providing easier access to homes (Beard et al., 2016).

Add Essential Accessibility Aids: Encourage the use of accessibility aids, such as grab bars in bathrooms and non-slip mats, which are cost-effective and simple to install. Evidence shows that these aids can significantly reduce falls risk and improve safety and independence for elderly individuals, especially when combined with community programs offering them at subsidized rates (Gillespie et al., 2012).

Promote Small-Scale Home Modifications: Focus on minor but impactful changes, such as adjusting furniture layout for easy movement and adding seating areas to reduce fatigue for elderly individuals. These modifications can be community-led or performed by family members as part of routine care (World Health Organization, 2019).

Address Environmental and Social Needs within Living Spaces

- **Develop Social and Community Support Within Living Areas**

Encourage Peer Support Networks in Housing Areas: Organize community groups where elderly individuals living in close proximity can support each other. This could include neighbors checking in on each other or assisting with daily tasks, as social interaction and peer support improve mental well-being (Beard et al., 2016).

Engage Community Leaders in Organizing Visits: Train community leaders or volunteers to conduct regular check-ins for elderly residents, particularly those living alone. This builds a community support system where volunteers can identify needs or risks that may arise in elderly households (Noguchi et al., 2015).

- **Leverage Local Organizations to Assist with Basic Needs**

Coordinate with Local NGOs for Essential Needs: Partner with local NGOs or faith-based organizations to provide necessary resources, such as food deliveries, water, or heating during colder months, which are critical for elderly individuals with limited mobility. NGOs can help bridge gaps in government support and provide direct aid where needed (Gureje & Alem, 2000).

Implement Community-Based Food and Nutrition Support Programs: Establish community programs that deliver basic groceries or offer cooking assistance for elderly individuals who are unable to prepare meals. This aligns with research supporting community-based nutrition programs for improving health outcomes among elderly populations (Giné-Garriga et al., 2014).

Provide Access to Health Supplies and Resources: Organize community-based drives for health supplies, such as mobility aids, eyeglasses, and hearing aids, which can be donated or distributed through local partnerships. Accessibility to these resources supports the functional independence of elderly individuals (Beard et al., 2016).

Expected Outcomes

Enhanced Safety and Reduced Fall Risks: Conducting home assessments and making small modifications will help create safer environments, reducing risks of falls and injuries, which are critical for the well-being of elderly populations (World Health Organization, 2019).

Improved Social Engagement and Mental Health: By establishing peer support groups and community-led check-ins, elderly individuals will benefit from increased social engagement, reducing loneliness and improving mental health (Beard et al., 2016).

Better Access to Essential Resources in Low-Income Settings: Leveraging local NGOs and community resources ensures that elderly individuals have access to necessary items like food, health supplies, and mobility aids, even in resource-limited areas (Gureje & Alem, 2000).

Policy and Legislative Support for Elderly Care in Low-Income Countries

Establish National Standards for Elderly Health and Social Care

- **Adopt and Localize International Geriatric Care Guidelines**

Implement WHO ICOPE Framework: Promote the adoption of the WHO Integrated Care for Older People (ICOPE) framework, focusing on preventive and community-based care models. The framework can be adapted to meet local needs in resource-limited settings, improving access to eldercare without significant infrastructure demands (World Health Organization, 2019).

Utilize ISO Standards for Dementia and Elderly Inclusivity: ISO 25552, a framework for dementia-inclusive communities, can be adapted to foster environments that support elderly individuals with cognitive impairments. This standard ensures that communities become more inclusive of vulnerable elderly groups, creating settings where care of the elderly is seamlessly integrated with daily life (Pit et al., 2023).

- **Create National Competency Standards for Geriatric Training**

Implement Minimum Competency Requirements: Establish core competencies for geriatric care in low-income countries, focusing on essential areas such as chronic disease management, dementia care, and communication skills. These standards can be introduced at the national level and integrated into health education, creating a unified approach to elderly care (Beard et al., 2016).

Promote Ethical and Culturally Sensitive Care: Encourage training on ethical considerations and culturally sensitive care practices to ensure healthcare providers are respectful of local traditions and family dynamics in eldercare (Turkson-Ocran et al., 2022).

Provide Financial Support Mechanisms for Elderly Populations

- **Develop Sustainable Social Protection Programs for the Elderly**

Introduce Conditional Cash Transfer Programs: Establish financial support initiatives like Kenya's "Inua Jamii 70+" program (Kisia, 2025) to provide elderly individuals with monthly financial assistance, improving their ability to access essential services. Such programs alleviate financial burdens on families and allow elderly individuals greater autonomy.

Provide Subsidized Healthcare Services: Implement subsidies for elderly healthcare services, including medications, preventive screenings, and in-home care support. This reduces out-of-pocket costs and encourages regular health maintenance among elderly populations.

- **Encourage Partnerships with NGOs and Private Sector**

Create Funding Collaborations for Elderly Care: Partner with international NGOs, private healthcare providers, and foundations to co-fund community-based eldercare programs. This approach can bring in additional resources to supplement government funding, supporting initiatives in rural and underserved areas (Gureje & Alem, 2000).

Incentivize Private Sector Involvement: Provide tax benefits or incentives for companies investing in elderly-friendly facilities, health services, or technologies that enhance the quality of life for older people.

Strengthen Community-Based and Family-Centric Policy Approaches

- **Promote Community-Centered Care Policies**

Empower Local Leaders in Elderly Care Initiatives: Encourage community-based organizations and local leaders to take active roles in elderly care by promoting support networks, community awareness, and local advocacy for eldercare services.

Incorporate Cultural and Traditional Care Models: Recognize traditional care systems and support informal caregivers through policies that provide small stipends, training, or legal recognition. By integrating these community practices, policies become more sustainable and context-sensitive (Zarzycki et al., 2022).

- **Build Family-Centric Care Support Policies**

Develop Caregiver Support Programs: Introduce policies that offer respite care options, training sessions, and mental health resources for family caregivers. This support helps prevent burnout among family caregivers and allows them to continue providing consistent care (Beard et al., 2016).

Support Cross-Generational Living Arrangements: Encourage multigenerational living arrangements through tax incentives or housing support. Policies can also support home modifications to make living spaces safer for elderly family members.

Establish Public Infrastructure and Access to Age-Friendly Services

- **Develop Accessible Public Health and Transport Facilities**

Increase Access to Geriatric Services in Public Health Centers: Ensure that local health facilities include basic geriatric services, such as preventive screenings, mental health support, and palliative care. This integration can improve access to elderly healthcare in remote areas where specialized services are limited (World Health Organization, 2019).

Implement Elder-Friendly Transport Options: Invest in accessible public transportation options that cater to elderly needs, allowing elderly individuals easier access to healthcare facilities, community centers, and social services (World Health Organization, 2019).

- **Create Public Spaces Designed for Older People**

Develop Age-Friendly Parks and Community Centers: Allocate resources for constructing accessible parks and community centers that cater specifically to the elderly, promoting physical activity and social interaction.

Enhance Accessibility of Public Buildings: Implement building codes that mandate accessibility features in public facilities, such as ramps, elevators, and wider pathways, making it easier for elderly individuals with mobility challenges to engage in community life.

Expected Outcomes

Enhanced Access to Quality Geriatric Care and Financial Support: By implementing sustainable funding models and national competency standards, low-income countries can ensure elderly populations have consistent access to necessary healthcare and financial support.

Culturally Relevant and Community-Oriented Care Systems: Policies that recognize and integrate cultural caregiving practices will foster more inclusive, sustainable elderly care systems that are aligned with community values.

Improved Infrastructure and Public Facilities for Elderly Inclusion: With policies supporting age-friendly infrastructure, elderly individuals can remain active within their communities, reducing isolation and improving overall quality of life.

Recommendations for Health Professionals

Issue	Recommendation
Health professionals lack standardized tools to assess elderly functionality.	Implement the WHO ICOPE Screening Tool to evaluate Activities of Daily Living (ADLs) and functional capacity.
Community health workers (CHWs) need simplified assessment tools.	Train CHWs on a basic version of the ICOPE checklist to assess daily activities and sensory impairments.
Limited tracking of elderly functional decline.	Use mobile-enabled or paper-based tracking systems to document assessment results and monitor long-term changes.
Chronic conditions like hypertension and diabetes are not detected early.	Implement routine physical health screenings in elderly populations for early detection and intervention.
Mental health issues in elderly populations often go undiagnosed.	Equip CHWs with tools such as the Geriatric Depression Scale (GDS) and Mini-Mental State Examination (MMSE) for cognitive and mental health evaluations.
Healthcare services are not adapted to the dependency levels of elderly individuals.	Stratify care into independent, partially dependent, and fully dependent categories to provide appropriate interventions.
Elderly individuals need social and community support in addition to medical care.	Integrate community-based support by connecting elderly individuals with local social groups, volunteers, or caregiving services.
Healthcare services do not always consider cultural differences.	Develop culturally sensitive engagement programs, including storytelling and traditional group activities, to encourage elderly participation.
Healthcare professionals struggle to manage elderly care across primary, secondary, and community care.	Establish multidisciplinary teams, including doctors, nurses, CHWs, and social workers, to improve coordination.
Health professionals need more effective collaboration with community organizations.	Partner with NGOs and faith-based organizations to integrate social and medical services, particularly for elderly individuals lacking family support.
Elderly individuals with mobility challenges lack access to specialized care.	Implement mobile health (mHealth) applications and telemedicine consultations for remote patient monitoring and follow-ups.
Health tracking and follow-ups are inconsistent.	Schedule regular CHW check-ins and utilize mHealth for monitoring chronic conditions like diabetes and hypertension.
Elderly patients require long-term, adaptive healthcare plans.	Conduct quarterly reviews of care plans and involve family members in reassessments to ensure adjustments based on evolving needs.

Conclusion

Addressing the multifaceted health and social care needs of aging populations requires a comprehensive, interdisciplinary approach informed by evidence-based research and contextual understanding. This study systematically explored the critical components essential to improving care for elderly populations, encompassing health issues, care delivery challenges, and culturally sensitive interventions.

The findings reveal that elderly individuals face a wide range of interconnected health challenges, including chronic diseases, MLTC, mental health concerns, social isolation, functional decline, and inequities in healthcare access. These issues are exacerbated by systemic factors such as socioeconomic inequalities, gender disparities, and limited access to healthcare services, especially in low-income countries. Moreover, specific considerations like nutritional deficiencies, caregiving burdens, and cultural influences on healthcare-seeking behavior further complicate the effective delivery of care. For instance, the role of intergenerational and family-based care in many societies presents both opportunities and challenges, requiring tailored solutions to balance family dynamics and professional healthcare support.

Existing frameworks, such as the Integrated Care for Older People (ICOPE), provide valuable guidelines for structuring geriatric care. However, critical gaps remain in areas such as workforce competencies, gender-sensitive approaches, and preventive healthcare strategies. This study underscores the importance of addressing these gaps through innovative training programs, policy alignment, and scalable community-level interventions. Stress management techniques, including epigenetic reprogramming and biological recovery models, offer emerging and promising avenues for enhancing aging experiences and mitigating the physical and psychological toll of aging.

Regional case studies from Kenya, Uganda, Rwanda, Yemen, and Tunisia illuminate disparities in healthcare access and utilization. They also highlight the need for adaptable and culturally relevant approaches to care. These findings emphasize the necessity of context-specific strategies that recognize the unique challenges of each region while adhering to global best practices. Implementing synchronous courses and localized training programs can help healthcare professionals adapt international guidelines to local contexts, ensuring the effective delivery of care.

The study's recommendations include comprehensive policy reforms and actionable strategies to improve the care of the elderly. For healthcare systems, these include strengthening geriatric care infrastructure, promoting preventive health measures, and enhancing the competencies of healthcare workers through continuous education. Policymakers should prioritize creating inclusive policies that address the social determinants of health, reduce healthcare inequities, and support caregivers. In low-income countries, the focus should be on cost-effective, scalable interventions that maximize impact while remaining sustainable.

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Online Resources

1. Clinical guidelines—British Geriatric Society <https://www.bgs.org.uk/resources/resource-series/clinical-guidelines>
2. Older people guidance—NICE <https://www.nice.org.uk/guidance/population-groups/older-people/products?Status=Published&ProductType=Guidance>
3. Practice guidelines for productive aging for community-dwelling older adults—Ebook, (2019), Aota Press https://myaota.aota.org/shop_aota/product/900593U
4. Nutrition and physical activity clinical practice guidelines for older adults living with frailty <https://link.springer.com/article/10.14283/jfa.2021.51>
5. APA guidelines for psychological practice with older adults <https://www.apa.org/practice/guidelines/older-adults>
6. Clinical practice guidelines for promoting mental health and well-being of older adults: A special focus on strategies for coping with social isolation and loneliness https://journals.lww.com/indianjpsychiatry/fulltext/2024/66002/clinical_practice_guidelines_for_promoting_mental.14.aspx
7. Clinical practice guidelines for management of delirium in elderly https://indianpsychiatricsociety.org/wp-content/uploads/2022/05/Grover_Avasthi_2018_Clinical_Practice_Guidelines_for.pdf
8. Geriatrics: guidelines & standards of care <https://med-fsu.libguides.com/c.php?g=275712&p=7677400>
9. Clinical practice guidelines for postoperative delirium in older adults—American Geriatrics Society <https://pmc.ncbi.nlm.nih.gov/articles/PMC5901697/>
10. Guidelines, recommendations, & position statements—American Geriatrics Society <https://www.americangeriatrics.org/>
11. Updated Beers criteria for potentially inappropriate medication use in older adults 2023—American Geriatrics Society <https://pubmed.ncbi.nlm.nih.gov/37139824/>
See also: Beers criteria teaching slides 2023 <https://geriatricscareonline.org/ProductAbstract/AGS-Beers-Criteria-Teaching-Slides/S006>
12. ClinicalKey Guidelines. Comprehensive collection of clinical guidelines by authored by professional associations. Guidelines can be filtered by specialty. <https://www.elsevier.com/products/clinicalkey>

13. ECRI Guidelines Trust

Repository of objective, evidence-based clinical practice guidelines for patient care; includes current evidence-based guidance developed by nationally and internationally recognized medical organizations and medical specialty societies. <https://guidelines.ecri.org/>

14. Geriatric Emergency Department Guidelines

Guidelines developed by the American College of Emergency Physicians, The American Geriatrics Society, Emergency Nurses Association, and the Society for Academic Emergency Medicine. <https://www.acep.org/geriEDguidelines/>

15. Guidelines for improving the care of the older adult with diabetes mellitus: 2013 update

American Geriatrics Society. <https://www.americangeriatrics.org/publications-tools/guidelines-recommendations>

16. Clinical practice guidelines for elderly. doi: 10.4103/0019-5545.224468. PMID: 29535463; PMCID: PMC5840903.

17. Improving clinical practice guidelines for older people: considerations and recommendations for more inclusive and ageing-relevant guidelines [https://www.thelancet.com/journals/lanhl/article/PIIS2666-7568\(22\)00074-5/fulltext](https://www.thelancet.com/journals/lanhl/article/PIIS2666-7568(22)00074-5/fulltext)

18. Ageing. https://www.who.int/health-topics/ageing#tab=tab_1

19. Quality of Australian clinical guidelines and relevance to the care of older people with multiple comorbid conditions. <https://pubmed.ncbi.nlm.nih.gov/18837677>

20. How applicable are clinical practice guidelines to elderly patients with comorbidities? <https://pubmed.ncbi.nlm.nih.gov/21753084/>

21. Defining ‘elderly’ in clinical practice guidelines for pharmacotherapy. <https://pmc.ncbi.nlm.nih.gov/articles/PMC4282767>

22. Guidelines for people not for diseases: the challenges of applying UK clinical guidelines to people with multimorbidity. <https://pubmed.ncbi.nlm.nih.gov/22910303>

23. Examining the evidence: a systematic review of the inclusion and analysis of older adults in randomized controlled trials. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3138606>

24. Why the exclusion of older people from clinical research must stop. <https://pubmed.ncbi.nlm.nih.gov/22613873>

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<https://pubmed.ncbi.nlm.nih.gov/23036829>
27. A framework for practical issues was developed to inform shared decision-making tools and clinical guidelines. <https://pubmed.ncbi.nlm.nih.gov/33049326/>
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29. Clinical practice guideline: Age-related hearing loss <https://www.entnet.org/quality-practice/quality-products/clinical-practice-guidelines/cpg-age-related-hearing-loss/>
30. Ageing societies <https://committee.iso.org/home/tc314>
31. Ageing and health <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health>
32. Integrated care for older people (ICOPE) <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/integrated-care-for-older-people-icope>
33. Integrated continuum of long-term care <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/integrated-continuum-of-long-term-care>
34. Universal health coverage and ageing <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/universal-health-coverage-and-ageing>
35. Improving understanding, measurement and monitoring of healthy ageing
<https://www.who.int/activities/improving-understanding-measurement-and-monitoring-of-healthy-ageing>
36. Improving understanding, measurement and monitoring of healthy ageing.
<https://www.who.int/groups/clinical-consortium-on-healthy-ageing>
37. Global network on long-term care. <https://www.who.int/groups/global-network-on-long-term-care>
38. Technical advisory group for measurement, monitoring and evaluation of the UN Decade of Healthy Ageing. <https://www.who.int/groups/technical-advisory-group-for-measurement-monitoring-and-evaluation-of-the-un-decade-of-healthy-ageing>
39. Decade of healthy ageing: plan of action <https://www.who.int/publications/m/item/decade-of-healthy-ageing-plan-of-action>
40. Ageing and health <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health>

41. Integrated care for older people (ICOPE) <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/integrated-care-for-older-people-icope>
42. Integrated continuum of long-term care <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/integrated-continuum-of-long-term-care>
43. Universal health coverage and ageing <https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/universal-health-coverage-and-ageing>
44. Improving understanding, measurement and monitoring of healthy ageing
<https://www.who.int/activities/improving-understanding-measurement-and-monitoring-of-healthy-ageing>
45. Clinical consortium on healthy ageing <https://www.who.int/groups/clinical-consortium-on-healthy-ageing>
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54. World Population Prospects 2024: Summary of Results. United Nations Department of Economic and Social Affairs, Population Division <https://population.un.org/wpp>
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https://www.academia.edu/28126885/Consequence_of_Demographic_Changes_on_Aging_Population_in_Egypt_2021