Health Economics and Ageing Populations: Financial Strategies for Sustainable Elderly Care

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ABSTRACT

This narrative review examines financial strategies for sustainable elderly care in response to rising global ageing populations. Using a meta-narrative approach, we conducted an iterative search across PubMed, JSTOR, Web of Science, Scopus, and Google Scholar, focusing on studies from 2000 to 2024. Inclusion criteria centred on articles addressing elderly care financing, health economics, and country-specific policies; grey literature, including government reports and policy briefs, was incorporated to capture real-world applications. Exclusion criteria filtered out clinical studies unrelated to financial strategies. The literature was synthesized into key themes: public and private financing models, cost-sharing and insurance schemes, preventive care, and healthcare innovations. Public funding models (e.g., Japan's Long-Term Care Insurance) support equitable access but face sustainability challenges. Hybrid models, like Germany's long-term care insurance, combine public support and private contributions to balance funding but may require adjustments for low-income inclusivity. Findings, evaluated through tools like AMSTAR 2 and ROBINS-I to ensure methodological rigour, highlight the importance of adaptable financial models emphasizing preventive care and technological innovations, such as telemedicine, to reduce costs and enhance accessibility. Future research should prioritize cross-country studies to evaluate long-term financial outcomes and guide policy adaptations for sustainable elderly care.

Keywords: Elderly care financing, Hybrid insurance models, Preventive healthcare, Telemedicine, Public-private funding

Introduction

The global population is ageing at an unprecedented rate, creating profound implications for healthcare systems, economies, and societies worldwide.[1] According to recent United Nations data, the number of people aged 65 and older is expected to double over the next three decades, surpassing 1.5 billion by 2050.[2] This demographic shift is driven by two key factors: increased life expectancy and declining birth rates, which together create a rising proportion of elderly individuals relative to the working-age population. These changes impose new demands on healthcare systems, requiring adjustments in financial, infrastructural, and policy domains to sustainably support the needs of an ageing demographic.

The effects this trend will have on revenue are especially important. People tend to have more chronic illnesses, disabilities, and problems as they get older.[3] All of these things make healthcare more expensive and common. Traditional funding models, which were usually made for smaller and younger populations, have a hard time keeping up with the rising costs of caring for the elderly without putting too much stress on healthcare facilities, public funds, or private savings.[4] For instance, the United States allocated 16.6% of its GDP to healthcare in 2022, with projections suggesting it will rise to 20% by 2031, largely driven by an ageing population.[5,6] Similarly, Japan, with one of the world's oldest populations, spends approximately 11% of its GDP on healthcare, driven by extensive public funding for elderly care through models like the Long-Term Care Insurance (LTCI) programme.[7,8] Despite providing equitable access, these systems face challenges due to the rising costs associated with longer life expectancy and chronic illness management. In contrast, countries relying more on private insurance models, like the United States, experience higher out-of-pocket costs for elderly care, which disproportionately affects low-income individuals.[9,10]

In 2022, the United States spent $12,555 per capita on healthcare—the highest among OECD countries—while Germany and Sweden spent $7,383 and $6,566, respectively.[11] These figures are further compounded by the rising proportion of elderly individuals requiring long-term care. Countries heavily dependent on public funding face higher fiscal pressure due to ageing demographics. For instance, Japan's LTCI model, funded by taxes and mandatory contributions, covers a broad spectrum of elderly services but is increasingly strained as its dependency ratio worsens.[12] Similarly, in Sweden, which has one of the most comprehensive publicly funded elderly care systems, healthcare spending accounted for 10.9% of GDP in 2022, largely driven by high taxes.[13] However, even Sweden is now facing fiscal challenges in maintaining equitable care as the ratio of working-age individuals to retirees continues to shrink.[14] In the United States, for example, Medicare provides partial coverage for elderly care but excludes long-term services like nursing home stays, resulting in significant out-of-pocket expenditures.[15] According to the Kaiser Family Foundation, 15% of elderly individuals spent over $10,000 annually on healthcare services not covered by Medicare in 2021, with costs projected to rise further as life expectancy increases.[16] Similarly, Germany's hybrid model of long-term care insurance, which combines public subsidies with mandatory contributions from employers and employees, has been relatively successful in controlling costs while providing equitable access. However, even Germany faces challenges with increasing contributions and ensuring financial inclusivity for low-income retirees as the ageing population

expands.[17] These examples highlight the limitations of both public and private funding models and reinforce the need for adaptable, hybrid strategies incorporating preventive care and innovations like telemedicine to mitigate future fiscal pressures.

Without creative financial solutions, there is a greater chance that older people will not get the care they need and that younger generations will have to take on more debt.[18] In response, lawmakers and healthcare leaders are looking into long-term ways to pay for care for the elderly that are fair, easy to access, and do not cost too much. The existing literature on health economics suggests some different ways to deal with these problems, such as social insurance and healthcare systems that are paid for by the government, as well as mixed public-private and private systems. Even though each plan has its benefits, how well they work depends on the economy, culture, and population. For example, countries with strong welfare systems, like Sweden and Japan, have set up complete models for caring for the elderly with a lot of public money.[19] This might be hard to do in countries with less money for healthcare. In contrast, countries like the United States that have healthcare systems that are based on the market have problems with access and cost, especially for the elderly who are financially weak. These differences across countries show the importance of having flexible, situation-based ways to pay for adult care.

The goal of this article is to bring together recent studies on health-economics-based financial strategies for long-term care for the elderly. By looking at several different financing models from different countries, this study aims to find strategies that are flexible enough to be used in a variety of national settings and with changing demographics. Our main goal is to answer two questions: **What financial models can sustainably support ageing populations? How can health systems allocate resources effectively to meet the healthcare needs of elderly individuals?** People who make healthcare policy, economists, and researchers in the areas of health and economics are all likely to find this review useful. By looking at different financial models, policy approaches, and healthcare innovations, the review gives a complete picture of the economic tactics that can help make long-term care for the elderly possible.

Literature Review

This literature review aims at the complicated world of financial strategies for caring for the elderly. It focuses on the different ways that countries have dealt with the rising cost of caring for older people. The study is divided into four main topics: Public and Private Financing Models, Cost-Sharing and Insurance Schemes, Innovations in Elderly Healthcare Delivery, and Sustainability and Policy Challenges. Each topic is about a different part of paying for elder care, showing the range of economic models, healthcare innovations, and policy issues that make up global approaches to elder care.

Table 1 | Comparison of Public and Private Financing Models

Country	Public financing	Private financing	Cost burden on the elderly
Japan	High	Low	Low
United States	Low	High	Moderate to High
Sweden	High	Low	Low

Public and Private Financing Models

Many nations have different ways of paying for elderly care. This is mainly because of differences in the way healthcare systems are set up, national laws, and cultural beliefs. Healthcare accessibility, quality, and affordability are all impacted by whether a nation relies on public or private funding. Public healthcare programmes in Japan and Sweden, for instance, pay for most of the care for the elderly.[12] Everyone in these countries has access to healthcare and social services. Japan, for example, has a system called LTCI that is paid for by a mix of taxes and monthly payments from people over 40.[12] This plan lowers the costs for elders so they do not have to worry about money when they get a variety of services, such as care at home or in a centre. Sweden also covers the cost of caring for its old by charging high taxes.[20] Lifelong, all Swedish citizens can get free or cheap medical care. There is a commitment to fairness in these plans, but they need steady public funding, which could be hard on national budgets as the number of older people rises.

In the United States, healthcare for the elderly is mostly paid for by private organizations, as Medicare only covers a small portion of the costs.[10] Some older people in the United States have to depend on private insurance, and funds, or pay for care out of their own pockets to get full care for their elders. Medical care for older Americans is often expensive, especially for long-term care like nursing home care or home-based support services that are not covered by Medicare.

The differences between these models as depicted in Table 1 show the pros and cons of public versus private financing. Public models offer more equal access but need help from the government, while private models can encourage new ideas but often result in unequal care.[21] As countries struggle with tight budgets and an ageing population, it is important to find a balance between public and private financing.

Figure 1 shows how healthcare supplies, the weight of caring for the elderly, and the budget affect each other. In the centre, "Healthcare Resources" refers to three main things: money, people to work, and infrastructure. Managing the healthcare needs of an ageing population, which puts a lot of stress on healthcare services, requires these resources. "Elderly Health Burden" has different effects on these resources. Examples include spending more on healthcare, which puts a strain on finances; hiring more people, which increases the demand for workers; and building infrastructure, which calls for more facilities. The growing need for healthcare resources to help the old directly

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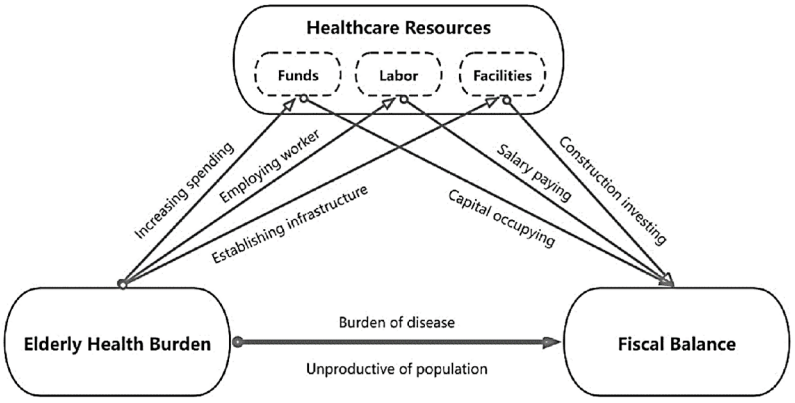

Fig 1 | The mediating role of healthcare resources

Source: Tang, Bo, and Zhi Li.[22]

impacts the budget by making the government spend more. The costs in this category include paying healthcare workers, building new facilities, and using cash to keep services working (Figure 2).

Cost-Sharing and Insurance Schemes

Cost-sharing models and insurance plans are important for making sure that governments, employers, insurers, and people pay for the care of the elderly. These ideas can help elders' current financial situations while also making sure that healthcare systems can continue to be profitable. Germany's system for long-term care insurance is a great example of how social insurance can help pay for care for the old. This system was set up in 1995 and requires employers,

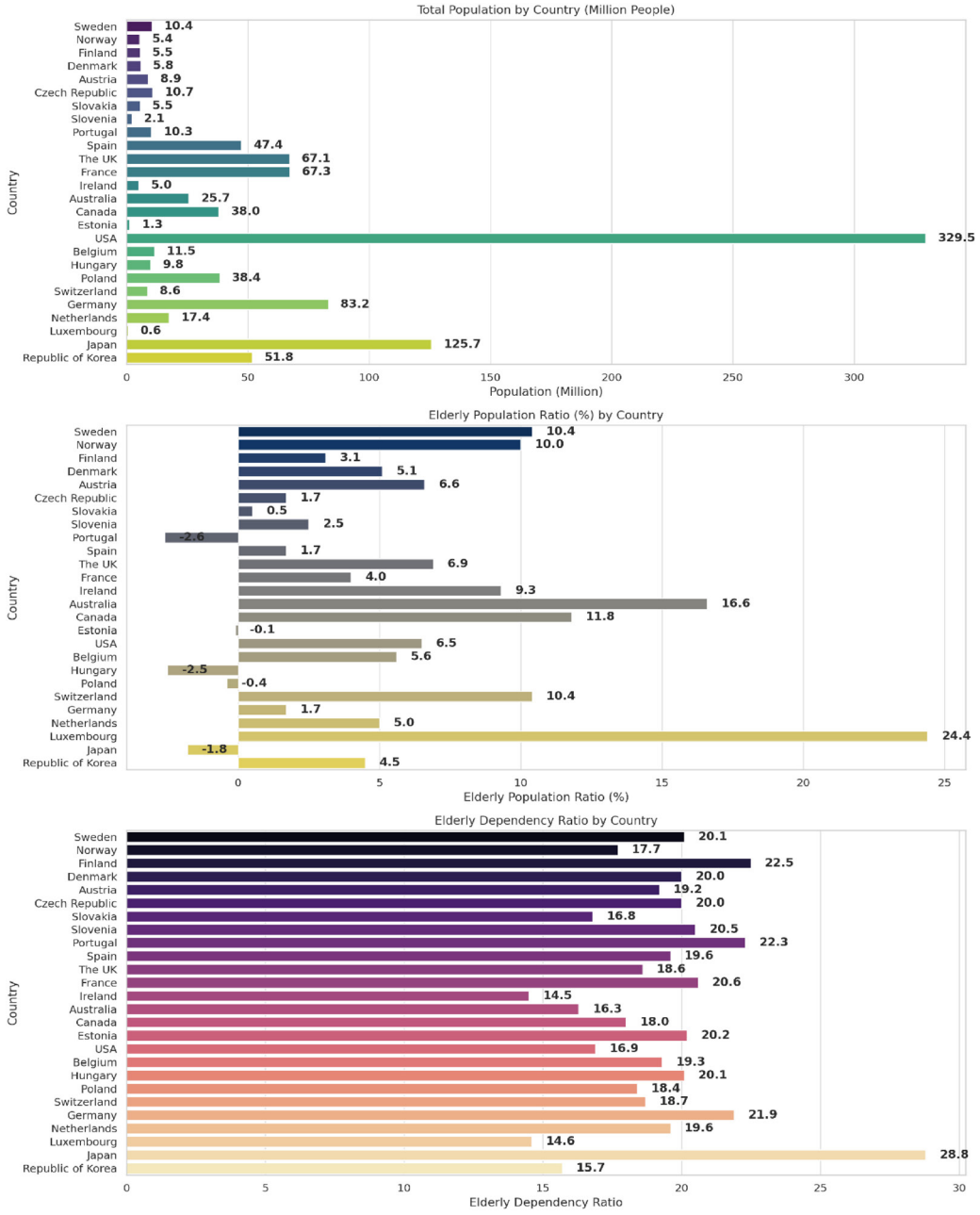

Fig 2 | Comparative analysis of long-term care in OECD countries

Source: Lee et al.,[23]; OECD Health Statistic. 2021[24]

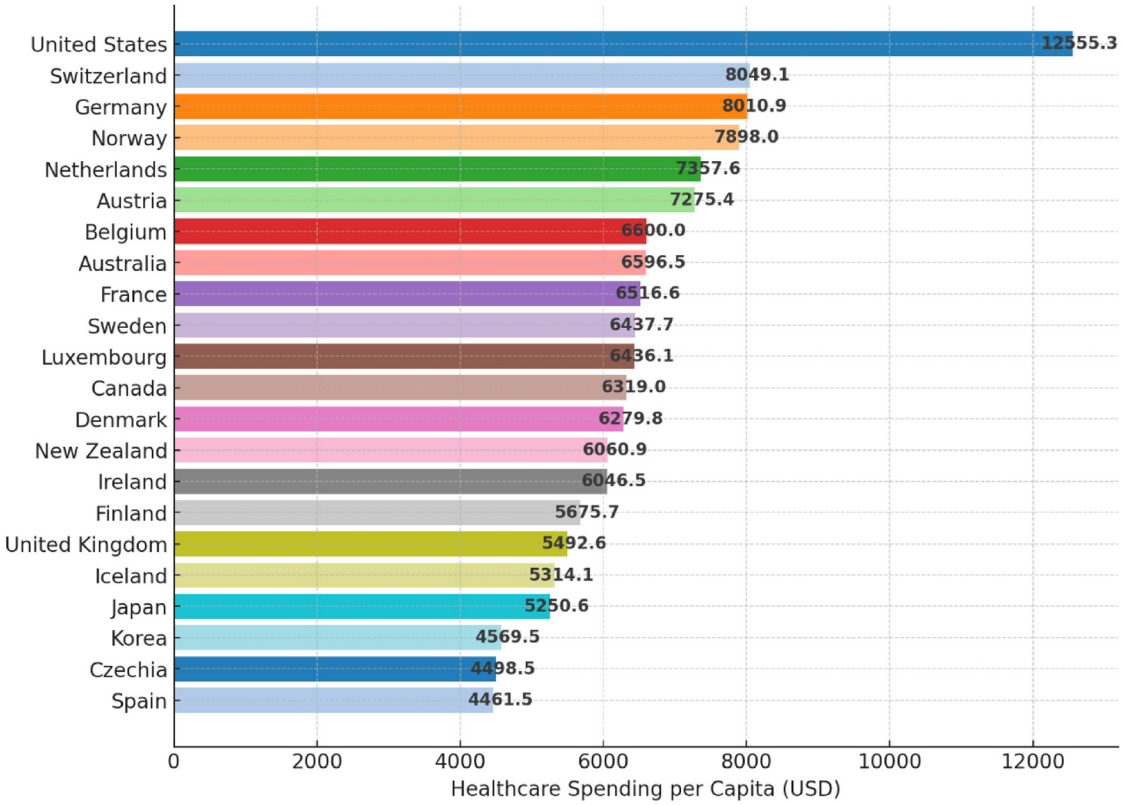

Fig 3 | Healthcare spending per capita by country

Source: Statista Research Department[11]

workers, and government subsidies to contribute.[25] This creates a pool of money that is only used for care services for the elderly. The German approach is based on the idea of shared responsibility. Both current workers and the government put money into accounts that help pay for long-term care for the elderly. This method not only lowers the costs that retirees have to pay out of pocket but also keeps the money base for caring for the old stable.

After Switzerland, the United States paid a lot more on healthcare than any other OECD country in 2022, spending $12,555 on each person as represented in Figure 3. Germany, Norway, and the Netherlands were also high-expenditure countries. Also, 16.6% of the United States' GDP went to healthcare, which is the most of any country. That number is projected to rise to 20% by 2031. In 2022, the United States spent more than $4 trillion on healthcare. A big chunk of that money went to hospitals, which made up almost a third of the total. Next came physician and clinical services, which accounted for 20% of spending. The rest of the money was split between nursing homes, home healthcare, and prescription drugs. The wide range and rising cost of healthcare in the United States is shown by this spread.

Some nations are examining "blended insurance" plans, which mix payments from state and private insurance companies.[26] Researchers have found that these mixed models can be a fairer way to pay for elder care because they lower the costs for everyone and use private money to help pay for public healthcare. For example, the Netherlands' long-term care system mixes private insurance options with social insurance to pay for services that people need.[27] People can change their coverage to fit their wants and needs this way. Blended insurance models make sure that more people can get coverage and that there is a steady source of funding. This way, they avoid the problems that come with only public or private funding.

Innovations in Elderly Healthcare Delivery

Due to progress in healthcare technology and service delivery, older people can now find low-cost choices that meet their needs. Older people can now get medical care through telemedicine.[28] This is especially true in places with few medical facilities or where it is hard for older patients to get around. Consultations, regular monitoring, and follow-up visits can be done through telemedicine, so people do not have to go to the hospital. Singapore, for instance, has telemedicine services for taking care of older people. Patients can get medical advice from the comfort of their own homes through teleconsultations and home monitoring tools that are part of these programmes.[29]

With home-based care, the elderly can get medical and support services in the comfort of their own houses. This makes them more independent and reduces their need for care in a facility. This plan is especially helpful for people who have trouble moving around or who need long-term help with daily

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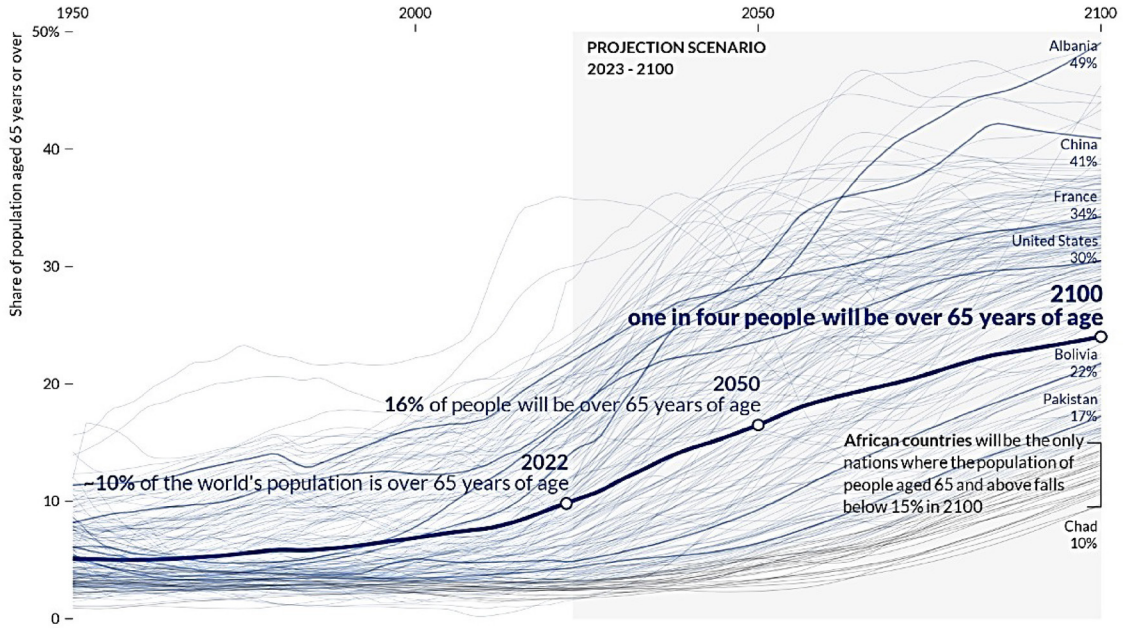

Fig 4 | The world's ageing population

Source: United Nations World Population Prospects, 2022; Alvarez[31]

tasks. Studies have shown that home-based care can lower healthcare costs by reducing the need for hospital stays and long-term care in institutions, which are two of the most expensive parts of caring for the old.[30] Some countries, like Canada, have started home-care programmes that combine medical care with social support. These programmes allow older people to stay in their own homes while getting medical care.

Figure 4 shows that the percentage of people aged 65 and up is gradually rising in every country around the world. About 10% of the world's population was over 65 in 2022, and that number is expected to rise to 16% by 2050. One in four people in the world will likely be over 65 years old by the year 2100. Some countries, like France, China, and Albania, are expected to have high percentages of older people by 2100, with 49%, 41%, and 34% adults over 65, respectively. African countries, on the other hand, are projected to keep their populations younger, with people over 65 dropping below 15% by 2100. Chad, for example, has an elderly population of only 10%. This trend shows big changes in the population, which will have effects on healthcare, economic policies, and social structures around the world as people get ready for an ageing population and the problems that come with it.

Sustainability and Policy Challenges

The ability of elderly care systems around the world to stay financially stable is still a major concern, since healthcare budgets are often limited by other priorities, and the need for these services keeps growing. It can be difficult for many countries to make long-term plans for funding that can adapt to changes in their populations without putting too much strain on their national deficits. Taxes need to be changed, required payments need to be raised, or co-payment systems need to be put in place. Some preventive steps that could lower long-term healthcare costs by lowering the number of diseases people get are making changes to how people live, getting regular tests, and vaccinated. Medical care that stops problems before they happen not only makes older people healthier but also saves the healthcare system money by cutting down on the number of hospital stays and critical care needs.

For long-term funding of elder care, the government, the business sector, and civil society must work together to build a complete system of support for older people.[32] Working together with private insurance companies, healthcare providers, and neighbourhood groups can help provide more resources and services for caring for the elderly. Financing long-term care for the elderly is not just a financial problem; it is also a policy and social problem that needs unity at many levels and investments that explore the future.[33] Policy changes that work and smart investments in preventive healthcare can make elderly care systems last longer and be more adaptable in the face of changes in the population.

In Figure 5, there is an analysis of the desires and challenges of the elderly to the use of artificial intelligence and assistive audiology technologies to age in place. These tools could help older people deal with these problems. However, there are gaps between what older people need and the availability of technology, which slows down usage rates. Some important questions to ask are how older people feel about AI and AAL, how concerned they are about data privacy, and how ready they are to help design technology. The results show that privacy concerns and a possible desire to work together on the planning process are two major

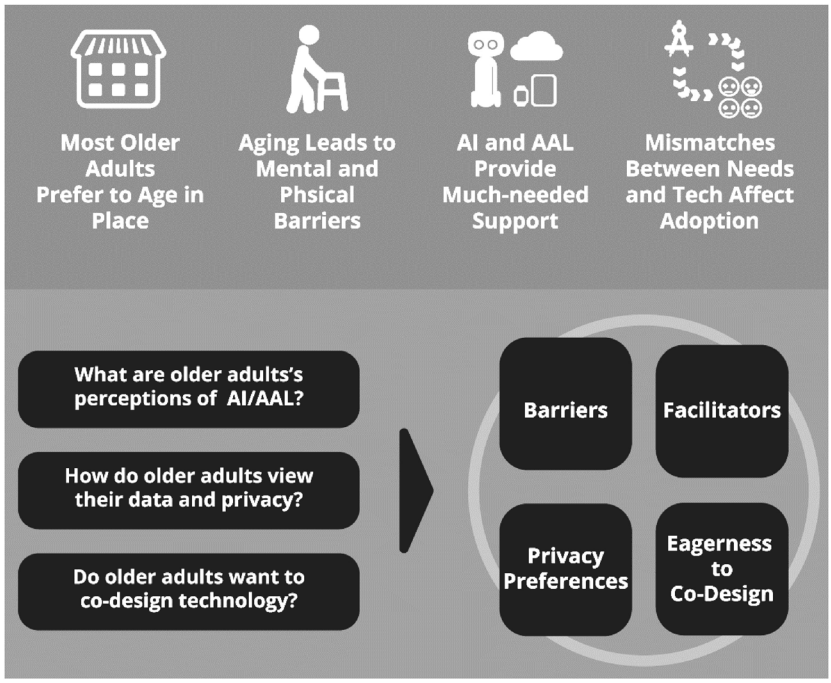

Fig 5 | Technology to support ageing in place

Source: Wang et al.[34]

factors that affect people's decisions to use technology. If these things are taken into account, tech solutions may better meet the wants of older adults.[35]

Methodology

In the field of health economics, this review uses a methodical technique to find, analyse, and put together relevant literature on elderly healthcare. Because paying for elder care is complicated and involves many fields, this review uses a meta-narrative structure to bring together different points of view from health economics, policy, and the social sciences.

Review Approach and Search Strategy

Designs, policy documents, and operational frameworks contributed to the decision to choose a narrative review approach. The main goal of the study was to give a complete summary of the main ideas in funding for adult care through the use of an iterative search method. To do the searches, tools such as PubMed, JSTOR, and Google Scholar were utilised. Several works in these databases are about public policy, health economics, and literature. The search was limited to studies and policy reports published between 2000 and 2024 that show current trends and strategies in paying for elder care. "Health economics and ageing populations," "financial models for elderly care," "public and private financing in healthcare," "cost-sharing in elderly care," and "sustainable elderly care systems" were some of the search terms that people used.

Grey literature was important to this review because it shows how strategies for paying for elder care are used in the real world in a way that may not be shown in peer-reviewed papers. These sources helped me understand how different financial models and policies have been used in different countries. They showed both the wins and failures of changing care systems for the elderly to meet the needs of an ageing population.

Inclusion and Exclusion Criteria

All types of research and articles discussing methods for funding elderly care were considered for inclusion in the final criterion, with an emphasis on the field of health economics, which examines healthcare costs and their relationship to an ageing population. *Models for Paying for Elder Care* include studies and papers that explain public, private, and mixed ways of paying for elder care. *Policy Specifics by Country* include articles and reports that show how different countries pay for elder care so that tactics used in different healthcare systems can be compared. *Healthcare Innovations* encompasses, studies, and publishes novel service delivery methods and technological advancements that influence healthcare access and affordability. Studies that only examined clinical results or certain medical treatments and did not look at the bigger picture of how they affected the economy were not included. Also, papers written before 2000 were not included because the review was only interested in strategies and developments that have happened in the last 20 years, a time of rapid changes in population and economic problems connected to older populations.

The identification and screening process for the review followed the PRISMA framework to ensure a rigorous and comprehensive selection of relevant studies.[36,37] An initial total of 1,535 records were identified through extensive searches across databases, including PubMed, JSTOR, Web of Science, Scopus, and Google Scholar, alongside grey literature sources such as policy briefs and government reports. After removing 472 duplicate records, 1,063 unique studies remained for screening. A comprehensive review of titles and abstracts led to the exclusion of 900 records that did not meet the relevance criteria. This left 163 full-text articles for eligibility assessment. Of these, 100 articles were excluded for reasons such as not addressing elderly care financing models (50 articles), focusing solely on clinical outcomes (30 articles), or lacking relevance to health economics or policy (20 articles). Ultimately, 63 studies met the inclusion criteria and were incorporated into the review and thematic synthesis. This rigorous process ensured that the final selection comprised high-quality, relevant studies that aligned with the review's objectives comprehensively (Figure 6).

Framework: Meta-Narrative Approach

The meta-narrative framework was chosen for this review because it allows ideas from different types of study to be combined. This makes it perfect for looking at topics that are not limited to one field. A meta-narrative method can help us look into how different fields, like economics and policy analysis deal with the

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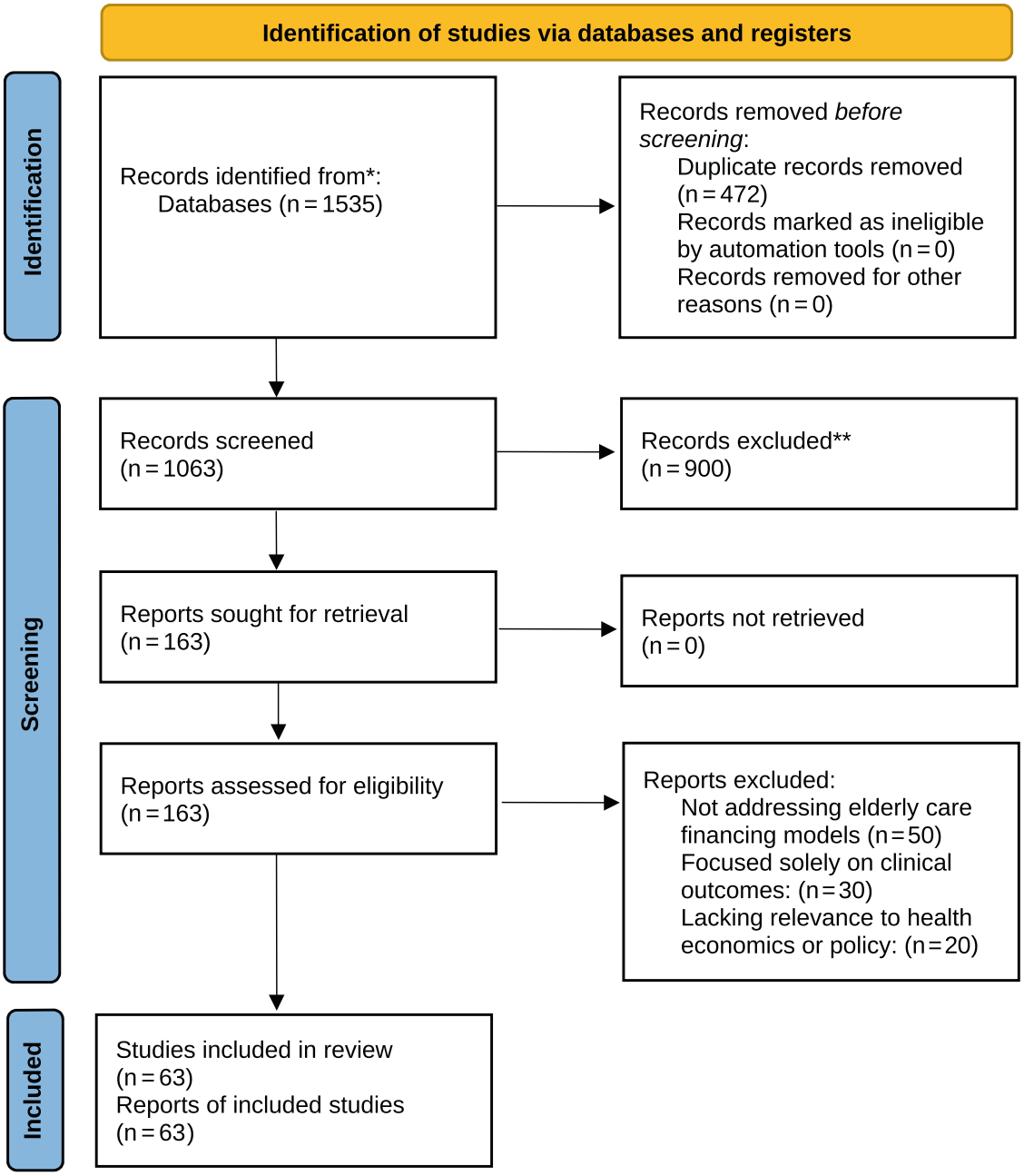

Fig 6 | PRISMA flow diagram values

Source: Author Calculations

financial problems that come with older populations. This framework also makes it easier to find themes and trends that appear in different types of writing. This allows for a deeper, more complete analysis of the results.

The meta-narrative method additionally allows this review to anticipate how different countries and regions understand and use strategies for paying for elder care. By making a map of these stories, the review finds trends and contradictions in the literature. This makes it easier to see which models work best in different situations. As an example, state finance models receive a lot of attention in Scandinavia. In countries like the United States, on the other hand, hybrid or private insurance models are more common. This framework makes sure that the results are accurate and show how complicated real-life applications are. It gives policymakers and carers for the elderly useful information they can use right away.

Thematic Synthesis

The chosen literature was put together and analysed using thematic synthesis. The articles were put into four main groups based on common themes and ideas found in the literature: Models of Public and Private Financing, Cost-Sharing Plans, *New Ideas in Healthcare for the Elderly*, and *Issues with Policy and Sustainability*.

Models of Public and Private Financing

Include studies that look at the difference between using public and private funding to care for the elderly. How various countries pay for healthcare is different. Some, like Japan and Sweden, rely heavily on public funds, while others, like the United States, use private or mixed models. In terms of the quality, affordability, and accessibility of care for the elderly, this study compares and contrasts various approaches to highlight their advantages and disadvantages.

These themes are about insurance plans and ways to get people, insurance companies, and the government to share the cost of taking care of the elderly. *Cost-Sharing Plans* are frequently spoken about in terms of how they make things last longer and make it easier for older people to pay their bills. There are now *New Ideas in Healthcare for the Elderly* to manage and pay for their care,s thanks to advances in technology and service delivery. In this theme, there is a study on telemedicine, home-based care, and other new ideas that offer cheaper ways to give care than the old ways. Because they improve the quality of life for the elderly, reduce expenditures, and make items simpler to reach, these innovative concepts are particularly useful in regions where the average lifespan is increasing.

There are *Issues with Policy and Sustainability* that explain how to make sure that long-term plans for paying for elder care will work, taking into account things like population changes, economic pressures, and government limits. It lays out the steps to maintain current care services even as demand increases. The message is clear: prevention is key, and experts from all walks of life must collaborate to provide it. This issue discusses innovative policy proposals, such as tax reform and funding for health promotion and disease prevention.

Data Extraction and Analysis

Systematically extracting data was done to make sure that relevant data was constantly collected across studies. Key information from each study was gathered, such as the type of financing model, the country or area examined, the policy setting, and the results of the model. After these data points were put into groups based on the thematic framework, they could be compared across different policy and funding models. A lot of care was taken to find patterns, contradictions, and gaps in the literature during the research. For example, state financing models were usually linked to more fairness and accessibility, but they also had problems with long-term viability because of the rising costs of caring for an ageing population. On the other hand, private financing models, while new, were often criticized for making it harder for some people to get loans and making them more expensive for others. These insights helped shape the thematic synthesis and gave us a way to explore the policy implications and possible directions for future study.

Reflexivity and Validation

Throughout the investigation, reflexivity was employed to enhance the rigour of this narrative evaluation. This is because the reviewer's biases and the nature of the study influence both the selection and interpretation of the literature. Regularly comparing the study to important works in the field of health economics helped make sure that it included all the important

Table 2 | PRISMA 2020 checklist for the review article on elderly care financing strategies

Section	Topic	Description	Reported on Page No.
ABSTRACT	Structured summary	Provide a structured summary including objectives, eligibility criteria, information sources, and synthesis of results.	Abstract (Page 1)
INTRODUCTION	Rationale	Describe the rationale for the review in the context of what is already known.	Introduction (Pages 1 and 2)
	Objectives	Provide an explicit statement of the objectives being addressed.	Introduction (Page 2)
METHODS	Eligibility criteria	Specify the inclusion and exclusion criteria for the review and how studies were grouped for synthesis.	Methods: Inclusion Criteria (Page 6)
	Information sources	Specify all databases, registers, websites, organizations, and reference lists searched or consulted.	Methods: Search Strategy (Page 6)
	Search strategy	Present the full search strategies for all databases and registers.	Methods: Search Strategy (Page 6)
	Selection process	Specify the process for selecting studies.	Methods: Study Selection (Pages 6 and 7)
	Data collection process	Specify the methods used to extract data and resolve discrepancies.	Methods: Data Extraction (Page 8)
	Data items	List and define all outcomes for which data were sought.	Methods: Data Extraction (Page 8)
	Study selection	Provide the number of studies screened, assessed for eligibility, and included in the review.	Page 8
RESULTS	Study characteristics	Cite each included study and present its characteristics.	Results: Study Characteristics (Page 9)
DISCUSSION	Discussion	Provide a general interpretation of the results in the context of other evidence.	Discussion (Page 11)

Source: Page et al.[36]; Sohrabi et al.[37]

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information without favouring any one funding model or policy approach. The iterative search approach also made it possible to keep improving the research question and inclusion criteria, which made sure that the review stayed complete and useful (Table 2).

Risk-of-Bias Assessment Statement

For this purpose, this research conducted a systematic review of the included studies using the AMSTAR 2 criteria to assess their potential for bias.[38] Two tools were employed: the Cochrane Risk-of-Bias Tool for randomized controlled trials (RCTs) and the ROBINS-I tool for non-randomized studies of interventions (NRSIs). This approach ensured that only high-quality studies were included in the synthesis. Biases in selection, performance, detection, attrition, and reporting were assessed, and each study's overall risk of bias was categorized as "low," "high," or "unclear." These assessments were critical for interpreting the findings and their implications. The AMSTAR 2 self-evaluation criteria are summarized in Table 3.

Results: Synthesis and Critical Analysis

The results of the literature review are thematically summarised and the strategies for reducing the cost of long-term care for the elderly are critically analysed in this section. Having more public funding, making hybrid insurance models operate better, and underlining the importance of having preventive care are the three primary points that came up as vital for making sure that care for the elderly can continue to be cheap. These motifs highlight the difficulty and potential danger of paying for geriatric care. To ensure their continued existence in the face of an ageing population, countries must strike a balance between affordability, equity, and sustainability.

Public Funding Needs Expansion

According to the study, countries with stable public funding systems tend to make it easier and fairer for older people to get care. These processes are set up so that everyone can get the services they need, no matter how much finances they have. However, expanding public funds to support the needs of a growing and elderly population is a big issue. Research about getting more public money for caring for the old can teach us a few things:

Fairness and Accessibility

Countries like Japan and Sweden have government-funded healthcare systems that make it easy for everyone, including the elderly, to get care.[39] A lot of the benefits these countries provide for the elderly are paid for by taxes or required contributions. These services include nursing home care, long-term care, and low-cost medicines. They are great at lowering the costs that older people have to pay for themselves and levelling the playing field for who can get care. However, they need a strong promise from governments to keep and grow funding sources as population changes cause demand to rise.

Long-Term Support Issues

The public's backing is encouraging, but maintaining these models is challenging, particularly as the population ages. The costs of looking for the elderly are making it harder for countries like Japan to afford public healthcare.[40] This is because health problems are lasting longer and affecting more people. Government-funded models often depend on strong economic growth and tax revenue, which can change as the economy goes through the recession. Research shows that these systems might not be able to last if they do not plan and use their resources wisely.

Allocating Resources Strategically

Sustainable problems need to be solved through strategic resource allocation. To reduce future healthcare costs, this means prioritizing important services, reducing waste, and spending money on preventive care.[41] Scandinavian countries like Sweden have taken steps to improve their healthcare systems. It has streamlined its management processes and started using health information tools, for instance. Since these steps improve

Table 3 | AMSTAR 2 self-evaluation for the systematic review of elderly care financing strategies

AMSTAR 2 Item	Description	Compliance
Research Questions and PICO	Population: Elderly populations. Intervention: Financing strategies. Comparator: None. Outcome: Cost reduction, accessibility.	Yes
Protocol Established	A protocol was developed but not registered.	Partial Yes
Study Design Selection	Both RCTs and NRSIs were included with justification.	Yes
Comprehensive Search Strategy	Comprehensive search across PubMed, JSTOR, Scopus, and other databases, including grey literature.	Yes
Study Selection in Duplicate	Two independent reviewers selected studies, resolving discrepancies by consensus.	Yes
Data Extraction in Duplicate	Data extraction was performed independently by two reviewers.	Yes
List of Excluded Studies	Excluded studies and reasons were documented.	Yes
Risk-of-Bias Assessment	The risk of bias was assessed for included studies using Cochrane and ROBINS-I tools.	Yes
Funding of Included Studies	Sources of funding for included studies were recorded.	Yes
Impact of Risk of Bias on Results	The risk of bias was interpreted alongside the findings.	Yes

Source: Shea et al.[38]

how public funds are used, longer-term public support for adult care will be available. Elder care is available to everyone through public funding systems, but they need fair resource allocation and proactive economic policies to stay in place. This theme clearly shows how crucial it is for countries that get a lot of government aid to plan and keep their businesses stable.

Hybrid Insurance Models are Effective

Hybrid insurance models are good ways to pay for care for the elderly. These models mix parts of public funds with private contributions. The method is fairer and lasts longer because these models make better use of both public and private resources. In this work the pros and cons of mixed insurance models are explored along with how they might affect the long-term viability of care for the elderly.

Responsible Financial Management

Taking care of the elderly costs a lot, but hybrid insurance plans split the cost among many groups, like the government, employer, and individual payments. In Germany, for example, both workers and companies are required to pay into a social insurance fund that pays for care for the elderly.[42] Sharing the cost of funding makes the system less reliant on a single source, like government funds, and more able to handle weak economies. For mixed models to work, costs need to be kept low without putting too much stress on any one side. That is why they are a good choice for poor countries that do not want to spend on service.

The Ability to Change with the Times

Hybrid insurance plans give us more freedom to adapt to changes in the business and population.[43] These systems can adapt their budgets to meet changing needs since they get funding from individual donors. If the economy is not stable, state support helps keep things even. The Netherlands has a method called "blended insurance" in which social insurance pays for basic services, and people can buy extra private insurance to cover other services.[44] This plan makes sure that everyone can get basic care while still allowing people to tailor their care to their own needs.

Not Having to Pay as Much

For older people, one of the best things about mixed models is that they may lower the amount of money they have to pay out of pocket for long-term care services that their health insurance does not cover. By bringing together public and private funds, these ways make it easier for people and their families to pay for care for the elderly. Germany and the Netherlands are two examples of countries that use a mix of models. They generally have lower out-of-pocket costs for caring for the elderly than countries that rely mostly on private insurance or direct payments.

Germany's LTCI system shows how combined insurance can help pay for elder care.[45,46] People who work in Germany have to pay into a fund. This helps pay for a wide range of services for people who need long-term care. Even more help comes from the government, which makes sure that people who cannot pay for good care can still get it. The way things worked out in Germany shows that mixed insurance can help solve issues that arise when only public or private support is used. It can also help other countries that have problems with their populations. Hybrid insurance models are a fair way to pay for elder care because they use the best parts of both public and private funding sources.[15,47,48] This theme emphasizes how flexible and long-lasting mixed models are, especially for countries that want to lower their out-of-pocket costs while keeping a strong funding structure.

Preventive Care is Essential

Preventive care has become an important part of long-term funding for elder care because it lowers long-term healthcare costs by taking care of health problems before they become chronic conditions that need thorough, expensive treatment.[49] Literature explores a number of benefits of preventive care and how it can help deal with the financial problems that come with an ageing population.

Preventive healthcare measures, like getting regular checkups and shots and making changes to your lifestyle, can greatly lower the number of cases and harshness of chronic diseases that affect older people.[50] Conditions like high blood pressure, diabetes, and heart disease usually need ongoing care, but they can be effectively controlled or avoided if they are caught early. Singapore and Canada are two examples of countries that put finances into preventive care programmes. These programmes help keep older people out of hospitals and lower their healthcare costs. Preventive care lowers the need for expensive services, which helps healthcare organizations use their resources better.[51]

Research shows that preventive care not only makes older people healthier but also saves healthcare systems a lot of money by reducing the number of hospital stays, long-term care, and emergency calls, and preventive care helps keep the costs of caring for the elderly low.[52,53] For instance, getting checked for heart disease and cancer daily can help find them early, which means less-invasive and cheaper treatments. Profitability is the driving force for preventive care programmes, which makes them an excellent option for long-term care for the aged.

Preventive care not only saves money but also makes older people's lives better by supporting their health, freedom, and well-being. Healthy ageing programmes give older people the tools they need to stay active and take charge of their health.[54] These programmes include community exercise programmes, mental health support, and nutrition knowledge. This shift towards preventive care is in line with the wishes of many elders, who would like to age in place and avoid costly medical interventions.

More countries are realising that spending on preventive care is a good way to meet the healthcare needs of an ageing population. Singapore's "Healthy Ageing"

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programme, for example, helps pay for health tests, manages chronic diseases, and teaches older people about health.[55] This spending not only makes people healthier but also keeps them from needing expensive long-term care, which helps the healthcare system stay open. When it comes to lowering the costs of caring for the elderly, similar plans are being thought about by policymakers in other countries. Preventive care is important for keeping healthcare prices low and improving the health of older people. This theme shows that countries should put money into preventive programmes because they save money in the long run and make life better for older people.

Costs are expected to go up a lot in places like Japan and Sweden where the government mostly pays for care for the old. This is because government budgets are getting tighter. After all, more people need healthcare services. These predictions make it clear that these countries need to find ways to make them more efficient. Countries like the United States that rely mostly on private insurance for aged care are likely to see rising out-of-pocket costs, which will make it harder for elderly people and their families to pay for care.[56] It is critical to invest in preventive care, employ hybrid insurance plans, and receive greater public funding to pay for long-term elder care. These results highlight the significance of a system of care for the elderly that can adjust to shifting demographics and economic conditions without compromising access or affordability for anybody.

Discussion

This part explains what this review taught us about the good and bad aspects of the current ways of paying for elderly care and the social implications of these models. Case studies and research are used to show lawmakers how to make care systems for the old that are fair, flexible, and able to last. The review finds several good points about the current ways that care for the elderly is paid for, especially when it comes to public and mixed-funding models. These models can help care for older people in a fair and long-lasting way when the economy and policies are in place.

Japan and Sweden, which have strong public funding systems, have shown that it is easier for everyone to get care for the old when it is paid for by the government. By paying for a lot of healthcare costs through taxes or social insurance, these systems keep the out-of-pocket costs for the elderly as low as possible. This makes it easier for both rich and poor elders to get care.[8] Since its start in 2000, Japan's LTCI programme has made sure that people aged 65 and up can get a range of services, such as care at home and in a nursing home. It is paid for by taxes and bills that have to be made. Japan's people are getting older quickly, and this way has helped take care of the elderly without making people and families too stressed out about money.[57]

Some types of funding, like Germany's LTCI system, are a mix of public and private funding. In Germany, the LTCI system, which is made up of contributions from employers, workers, and the government, provides a steady source of income that does not depend on individual or public savings. Through Rothgang,[58] it has been shown that this shared-responsibility method can deal with changes in the population and business. Studies show that hybrid models spread out the financial duty among several different sources. They can adapt better to changes in the economy and government spending because of this.[59]

New technologies and healthcare programmes that keep prices low are becoming more important for giving better care to the elderly. Getting vaccinated, regular checkups, and making lifestyle changes are examples of programmes that help lower the chance of getting chronic conditions. It can cost a lot to treat these diseases in older people. Telemedicine and home tracking systems are two new technologies that offer less expensive alternatives to traditional care settings. It is easier for older people to get medical care in Singapore due to its telemedicine programmes, which have also cut down on hospital stays and made life better for people with long-term illnesses. For healthcare prices not to go up too much and for older people to stay healthy and independent, these new ideas should be used.

Limitations and Gaps in Current Knowledge

The current models have some good points, but many study gaps make it hard to ascertain how well and easily these systems can be altered over time, especially in various social settings. Some important limits that have been found are, not enough is known about blended insurance models for low-income groups, hybrid models look like a good way to pay for elder care, but the long-term effects of these models on low-income elder groups have not been studied enough. Not much study has been done on how to adjust contributions and subsidies for people with lower incomes, who may be more affected by insurance premiums or contribution requirements than other people. Studies show that even though hybrid models share financial responsibility, people with lower incomes may still have trouble meeting contribution limits, which could make it harder for them to use some services. The gap shows that there is a need to do more research to discover if mixed models can be changed to help weak groups while still being good for the environment.

While it is true that new tools like telemedicine can save people a lot of money, it is still not clear how well they work for everyone. There is a need to be able to buy technology, connect to the internet, and know how to use it to use telemedicine. These are things that not all old people may be able to get. Disparities in income can make it hard for low-income elders to use telemedicine because they may not have the money to pay for digital services. Telemedicine can also be hard to use for older people who live in rural places because they may have trouble connecting to the internet. There needs to be more studies on how to make technology easier to use and how to use telemedicine in a variety of social and economic settings because of these differences.

There is a lack of long-term statistics to demonstrate the actual reduction in healthcare expenses for older groups, despite the widespread belief that preventive treatment can save money. Short-term studies show that preventive care lowers the number of hospitalizations and improves health results. However, there is not a lot of information on how well it works at lowering the costs of caring for the elderly over many decades. Figuring out how preventive care affects the overall cost of caring for the elderly could help make the case for prioritizing and funding preventive programmes in care systems for the elderly.

Policy Implications

The findings of the research can be utilised by policymakers to highlight the significance of adaptable, mixed-funding models that prioritise preventive healthcare and technological advancement, incorporating contributions from both the public and private sectors. Policymakers should think about putting in place or improving hybrid insurance models with progressive contribution structures that change payments based on income levels. This way, low-income elderly people will not be hit harder than others. For instance, Germany's LTCI plan includes income-adjusted contributions. More help for low-income people could be added to make things even more fair. This way of thinking would make hybrid models more long-lasting without making it harder for people who are already struggling to get entry. This would make it easier for everyone to care for the old and keep the economy stable.

There should be more money for digital infrastructure in rural and underserved places so that all older people can use new technologies. Everyone could use telemedicine if tech gadgets were free or cheap and an internet connection was easy for everyone to get. To make it easier for elders to use digital health services, states should set up programmes to teach them how to use technology. Additionally, this will help them make better use of telemedicine and other tech tools.

Policymakers should increase funding for preventive care programmes, especially those that focus on early prevention of common chronic diseases among older people. Investing should go towards complete programmes that offer screenings, immunizations, nutrition counselling, and encouragement of physical exercise. To figure out how well preventive care works to lower long-term healthcare costs, governments could set up programmes that track prices and measure health outcomes. This way, the effectiveness of preventive care can be continuously evaluated. With this information, policymakers could better decide how to spend money on preventive care programmes that show long-term effects.

For long-lasting care systems for the elderly, government agencies, private insurers, healthcare providers, and community groups must work together. Policymakers should encourage partnerships that allow programmes that care for the elderly to share funds and new ways of providing services. For example, telemedicine programmes could be helped by public-private partnerships, and neighbourhood groups could offer extra social support to elders to make their lives better. With these kinds of agreements, older people would have access to more resources and services. This would make care for the elderly completer and last longer.

Conclusion

The most critical means of funding geriatric care are laid forth in this article. It is critical to have adaptable financing mechanisms and prudent legislative adjustments to accommodate the needs of an ageing population. This review explores different ways to pay for elderly care systems, including public, private, and hybrid options. It also explores preventive care and new technologies. The results show that public funding models help everyone get the resources they need, but they need long-term plans for money to keep going. On the other hand, hybrid models give us options and share financial responsibility, but they might need some changes to make sure that low-income older people can be a part of them.

One main idea that comes out of this study is that long-term funding for elder care will need a variety of approaches that are tailored to each country's economy and population. Policymakers should think about hybrid models that combine public support with individual payments. They should also think about preventive care programmes to lower the cost of healthcare in the future. Additionally, investments in inclusive digital infrastructure are needed to make sure that all elderly people, no matter their income, can use new technologies like telemedicine.

Comparative extended studies across countries should be the main focus of future research to see how well different financial models work over time. Such studies would help us understand how different economic situations affect the long-term results of different methods for caring for the elderly. This would lead to the discovery of best practices that can be changed to fit different needs. Also, more research on how hybrid models and preventive care programmes affect equity would help us better understand how these tactics can help older populations without making it harder for some people to get the healthcare they need.

Lastly, this research highlights the significance of proactive and adaptable financial plans in maintaining robust, fair, and flexible aged care systems that can handle population shifts. Governments can build long-lasting systems that help older people stay healthy and with dignity by using flexible funding models and putting money into preventive healthcare and technology. As the global population ages, these findings highlight the need for ongoing research and the development of new legislation to assist with the cost of elder care.

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