

Dependency and Elderly Care

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The rapid ageing of populations around the world is creating complex challenges for national governments. The establishment of sustainable and equitable long-term care systems for old and dependent people is one of the main issues of social policy in developed countries.

dependency

elderly

long-term care

costs

1. Introduction

The 17 Sustainable Development Goals (SDGs) developed by the United Nations in 2015 provide 169 targets that the world must meet by 2030 in order to ensure well-being and prosperity for each person living with dignity and security in society. By committing to erasing inequalities, these SDGs are closely linked to human rights. Around the globe, older people are among the most vulnerable to marginalisation, poor health, poverty, and income insecurity ^[1].

For decades, Europe, in general, and Spain, in particular, have been undergoing a major demographic change, characterised by an ageing population, a reduction in the birth rate, and the internationalisation of the population through migratory processes.

The rapid ageing of populations around the world is creating complex challenges for national governments. Although people are living longer, it is not clear if these extra years are experienced in good health ^[2]. Addressing the needs of these older populations in a sustainable and equitable way will be a fundamental pillar of socioeconomic development in the 21st century.

In this context, the establishment of sustainable and equitable long-term care systems for old and dependent people and the promotion of their personal autonomy is one of the main issues of social policy in developed countries.

The World Health Organization (WHO) defines long-term care as “the activities undertaken by others to ensure that people with, or at risk of, a significant ongoing loss of intrinsic capacity can maintain a level of functional ability consistent with their basic rights, fundamental freedoms and human dignity”. The share of the population aged 80 years and over is expected to rise in OECD countries from 4% in 2010 to 10% in 2050. Expenditure on long-term care for the elderly is expected to increase from, on average, 1.5% of GDP in 2010 to more than 3% of GDP in 2050 ^[3].

In most OECD countries, the government has to manage tension between growth in the need for long-term care (LTC) services for older people and significant public budget constraints.

Ageing populations have forced national governments to control growing long-term care (LTC) public expenditure. This has resulted in an increasing centrality of cost-containment policies ^[4].

Cost-containment policies cluster in two areas according to their focus: demand-side policies, which reduce the actual chances of receiving LTC services and/or make them more expensive for users; and supply-side policies, which modify the provision of services. A comparison of the costs of residential care and home care shows that the former is more expensive for society. However, elderly people seem to be happier in residential care ^[5].

2. Analysis of Costs of Dependency and Elderly Care

Three main gaps can be identified in the analysis of costs of dependency and elderly care.

Firstly, previous research studies about costs in care centres for elderly and disabled persons ^{[6][7][8][9][10][11][12][13][14][15][16][17]} have shown different results in relation to the quantification of costs, depending on the variables included in the quantification, the type of service analysed (mostly residential), and even the geographical area where the study was carried out.

This lack of consensus in previous literature is one of the most relevant gaps researchers want to cover by identifying the most relevant variables to measure the costs and how to measure them.

Secondly, despite the important role played by cost considerations in policy decisions regarding services for the elderly and dependency, there has been relatively little reliable research on this topic, and this will contribute to increasing knowledge about this topic.

Thirdly, although social investment has recently received much attention among policy makers and welfare state scholars, the existing literature remains focused on policy making on the macro level ^[18]. However, more research focus on the micro level is needed.

In Spain, the number of dependent people in June 2023 was 1,547,544, an increase of 18.6% over 2018 ^[19]. This rise presents major challenges to families, formal care services, and public and private budgets. Understanding the economic consequences of such a prevalent condition is essential to engaging the public and encouraging policy makers to invest in appropriate treatment, care, and support.

In Spain, the Act 39/2006 of 14th December was passed to create a new System for Promotion of Personal Autonomy and Assistance for Persons in Situation of Dependency. This Dependency Act granted universal entitlement to social services with eligibility set on the basis of degree of dependency ^[20].

The Spanish care system was developed during the economic boom in 2006 but implemented during the bust years. According to ^[21], this fact may have consolidated informal care through the economic compensation of mainly family carers. However, the increase in combined formal and informal care could be because of the preferences of potential family caregivers or due to a lack of alternatives because of the cost of formal care.

In 2021, two major milestones took place in the field of the dependency care sector in Cantabria (a region in the north of Spain), which, up to that time, questioned whether public prices could cover the costs of the service. On the one hand, the publication of Order EPS/6/2021 of 26 March regulating the material and functional requirements of the specialised social services centres and the accreditation requirements of the dependency care centres in the Autonomous Community of Cantabria, which, among other issues, regulates the ratios of professionals that the centres must have. On the other hand, the publication of Order EPS/16/2021 of 27 May, which sets the public prices of the services of the Cantabrian Institute of Social Services for the care of dependent people.

3. Initial Investment: Land and Building Costs per User

The investment required for the start-up of a long-term care centre is high, mainly because of the building costs (new construction or refurbishment of an existing one). This cost must be taken into account when calculating the cost per place in the centre, as this initial investment will deteriorate and be amortised over time.

The information on the investment for the start-up of long-term care centres (including construction and equipment) in Cantabria varies from one centre to another. In fact, on a national level, the existing information on the volume of such investment also differs from one study to another, varying between 36,000 euros/place, excluding land and 75,000 euros/place. Thus, the following references are available:

- ^[10]: 36,000–60,000 euros/user (excluding land)
- ^[22]: 48,000–75,000 euros/user
- ^[9]: 56,199 euros/user (excluding land)
- ^[15]: 40,000 euros/user
- ^[23]: 65,000 euros/user (excluding land)
- Experts in the sector in Cantabria through personal interviews in 2021: 50,000–60,000 euros/user

In Cantabria, the analysis of the 68 centres that provided information allows people to draw a series of conclusions in relation to residential centres, without there being significant differences when distinguishing between centres for the elderly and centres for the disabled:

- The average investment per user, both in land and building and all the equipment necessary for start-up, amounts to 69,761.62 euros/place in residential centres (48,373.33 euros/place, excluding land). This value is in the range of values of the average investment per place in previous studies.
- Investment in buildings, land and infrastructure represents 78.2% of the total (68.6% if the investment in land is not considered because it is not depreciable).
- Investment in other equipment (furniture, vehicles, IT equipment, etc.) represents 21.8% of the total (31.4% if land investment is not considered).

In relation to the investment in day centres, the great variability in the responses to the questionnaire made it necessary to establish a theoretical cost based on the following hypotheses:

- The average value of floor area per residential care user in Cantabria is 47.35 m², according to the responses to the questionnaire. This value corresponds to that observed on average in previous studies, in which the size of residential centres per user ranges between 40 m² and 73 m² [9](#)[11](#)[13](#)[16](#).
- The minimum useful surface area per authorised place in day centres, according to Order EPS/6/2021, is 7 m².
- Therefore, the size per user in day care centres represents 14.8% of the residential place, which can be extrapolated to the investment. If the investment per user in a residential centre, on average, turned out to be 69,761.62 euros, the investment in a day centre should be 10,324.7 euros.

The initial investment is attributable to the cost per user in the centre through depreciation. The depreciation period considered for buildings is 35 years, for computer equipment 5 years, and for other equipment 10 years (in accordance with the usual practice in the sector, as indicated in the answers to the questionnaire).

In summary, the average cost linked to the amortisation of buildings and equipment in residential centres is 6.59 euros/place and in day centres 1.27 euros/place.

4. Fixed and Variable Costs

The annual costs of the activity include the expenditure necessary to carry out the activity even if there are no customers. This concept includes both variable costs (those that depend on the volume of occupancy) and fixed costs (those that are independent of occupancy). The occupancy rate of the 68 centres analysed in Cantabria is 90.24%.

4.1. Staff Costs

The centres surveyed in Cantabria provided information on the cost of staff per user, with a high degree of variability. Therefore, the theoretical personnel cost that the centres should have is calculated, taking into account the human resources and personnel organisation requirements established by Order EPS/6/2021 and the collective agreements and salary tables applicable to the sector (the 15th General Collective Agreement for Centres and Services for the Care of Persons with Disabilities and the 7th State Framework Collective Agreement for Services for the Care of Dependent Persons and Development of the Promotion of Personal Autonomy).

For the calculation of staff costs, the following formula was used:

Staff costs = Annual basic salary stipulated in the collective agreement according to professional category + possible night, Sunday and public holiday bonuses + 32.5% of social security + additional personnel costs bonus of 11.04%.

The questionnaire asked for information about additional staff costs that care centres have annually, and in particular about:

- Night bonus
- Public holiday bonus
- Experience/Seniority
- Specific training
- Prevention of occupational hazards
- Equality plans, improvement actions, etc.
- Replacements, departures, etc.
- Other

The percentage that the amount for all these items represents of the wage costs in the centres surveyed is, on average, 13.13%.

Therefore, an increase of 11.04% in staff costs is hypothesised for additional costs derived from substitutions, seniority, or risk prevention, among others.

The theoretical personnel cost according to Order EPS/6/2021 and the applicable collective agreement, as well as its comparison with the personnel cost revealed in the replies to the questionnaire.

On average, staff costs are structured as follows: direct care 73.7%, administration 11.4%, and general services (maintenance, cleaning, kitchen, etc.) 14.9%.

Staff costs per user and per day in elderly residential care centres amount to €34.57 (according to the answers to the questionnaire), which is 18.1% above the €29.27 that would result from the application of the Order. In elderly day centres, it is €33.78 (63.3% above the €20.69 that would result from the application of the Order in 5 days/week centres).

5. Profit Margin

According to the centres surveyed in Cantabria, the average profit margin is 4.19%, with wide variability in the results, mainly in day centres; 22.06% of the centres report losses and 33.82% of the centres present profit margins of less than 5%.

According to previous studies, profit margins are around 8–12% ^[6] or 10–15% ^[7], depending on the type of centre.

References ^[9]^[10]^[24] establish a commercial margin in residential care centres of 7%. The particularity of these studies is that they only consider in their analysis centres for elderly residential care, thus leaving out of the study centres for the disabled or day care centres. Also referring to residential care centres, the studies done by ^[15]^[17] observe higher profit margin values of 7.5% and 8.4%, respectively.

In contrast to previous studies, the authors in ^[13] consider that the profit margin should not be part of the cost in any type of centre. However, they recognise that centres need to have a safety margin that allows them to face unexpected needs in their financial and cash management, and although there is no consensus about the size of this safety margin, a recent study has set it at around 5% ^[25].

According to the above information, a safety margin of 4.17% of the total cost, which is the average value of the profit margin observed in Cantabria, will be considered as a safety margin for the care centres when calculating the cost model.

6. Financing

The average cost of long-term borrowing is 2.42%, while the cost of other sources of financing is 0.74%.

This cost of financing is in line with the evolution of interest rates published by the Bank of Spain in relation to mortgage loans (which in the period 2014–2019 presented an average value of 2.23%).

Evidence shows that financial costs represent a small percentage of the total cost in previous studies. The authors in [\[13\]](#) consider a daily cost per user of €0.14 (representing 0.3% of total costs). Reference [\[8\]](#) considers a financial cost of €0.93/user/day in mini-residences with 50 places and €0.58 in residences with 100 places.

In any case, it seems necessary to consider the explicit costs of financing the investment necessary for the start-up of the centre (already defined above), taking into account the structure of such financing.

In particular, the following financing costs are established:

– Residential centres:

$$(20.1\% \times 2.42\% \times \text{€}69,761.62 + 19.4\% \times 0.74\% \times \text{€}69,761.62)/365 = 1.2 \text{ euros/user/day}$$

– Day centres:

$$(20.1\% \times 2.42\% \times \text{€}10,324.7 + 19.4\% \times 0.74\% \times \text{€}10,324.7)/365 = 0.18 \text{ euros/user/day}$$

7. Results of the Estimation of the Total Cost per User in Each Type of Centre

The cost analysis has been carried out considering the staff cost that the centres should assume in accordance with the staffing requirements established in Order EPS 6/2021 for each type of centre, which makes it possible to distinguish between 16 categories of centres. Once the personnel cost has been calculated, the rest of the operating costs are added, as well as the financing costs and the safety margin, to calculate the total cost per user and day.

In the case of day centres for people with disabilities, the cost of feeding is not included in the cost of the centres, as the current regulations do not require feeding services in these centres, so this concept cannot be included in the calculation of the cost. If any centre provides this service, the user pays the cost in full.

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