

NBER WORKING PAPER SERIES

LONG-TERM CARE IN ITALY

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Working Paper 31861  
<http://www.nber.org/papers/w31861>

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
November 2023

The authors are grateful to Rinaldo Naci (Ca' Foscari University of Venice) for the support in data analysis and text revision. Use is made of data from the Italian sample of SHARE. The Survey has been funded by the European Commission through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982) and Horizon 2020 (SHARE-DEV3: GA N°676536, SERISS: GA N° 654221) and by DG Employment, Social Affairs and Inclusion. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01\_AG09740-13S2, P01\_AG005842, P01\_AG08291, P30\_AG12815, R21\_AG025169, Y1-AG-4553-01, IAG\_BSR06-11, OGHA\_04-064, HHSN271201300071C) and from various national funding sources is gratefully acknowledged (see <http://www.share-project.org>). We acknowledge co-funding from: (i) Next Generation EU, in the context of the National Recovery and Resilience Plan, Investment PE8 – Project Age-It: “Ageing Well in an Ageing Society” (Next Generation EU [DM 1557 11.10.2022]); (ii) NIH/NIA project 1R01AGO77280-01A1, USA, "A Next Generation Data Infrastructure to Understand Disparities across the Life Course"; (iii) the Economic and Social Research Council (ESRC), through the grants ES/S01523X/1 (IN-CARE project) and ES/S012567/1 (ESRC Centre for Society and Mental Health at King's College London). The views and opinions expressed are only those of the authors and do not necessarily reflect those of the European Union, the European Commission or the NIH/NIA. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

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NBER Working Paper No. 31861  
November 2023  
JEL No. D1,I13

### **ABSTRACT**

The provision of long-term care (LTC) for senior citizens in Italy is at the center of the recent policy debate. Italy has witnessed a spectacular increase in the share of people aged 65 and over and in particular of people aged 80 and over, which could translate in large increases in the number of people in need of care. We show that individuals who are in need of LTC have lower economic resources than the average, so that many frail older people have little financial means to pay out-of-pocket for formal care. In fact, publicly provided care is highly fragmented, with stark differences emerging in terms of coverage and generosity across Italian regions. Hence, the supply of LTC is relying heavily on the informal support of members of the family, especially women, at the same time formal care is characterised by a significant underground economy of unskilled carers.

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## **Introduction**

The provision of long-term care (LTC) for the Italian older population is at the center of the recent policy debate. Italy has witnessed a spectacular increase in the share of people aged 65 and over and in particular of people aged 80 and over, especially women, which could translate in large increases in the number of people in need of care. At the same time, the Italian Long Term Care framework is highly relying on the informal support of families and especially women and characterised by a substantial underground economy of unskilled carers. The public formal care system is mostly decentralised at regional level, so that both funding and eligibility rules to access care vary greatly across regions, while the private market for LTC insurance is still very limited (European Commission, 2021).

The demographic transition is exemplified by Figure 1: the trends for the prevalence (percentage) of individuals aged 65 and over as a whole or by sex (estimated by the OECD 2022 Population Prospects) increase from less than 10% in the 1950s to more than 20% in 2019, with an expectation of reaching at least 30% (for men) and 36% (for women) in 2060. Such transition will also see a large increase in the population of oldest all: Figure 2 shows that the prevalence of people aged 85 and over (as a percentage of the population 65+) will grow from the current value of 13% to 24% in 2060 for men, and from 19% to 32% for women.

Several studies attempted to estimate how many years for the “gained” lifetime translate into time spent in good health, rather than into years of increased loss of autonomy and diseases. Among advanced economies, time spent in disability and with loss of autonomy is narrowing with population ageing, while years with chronic diseases are increasing (Chatterji, Byles, Cutler, Seeman, & Verdes, 2015). Crucially for this paper, the picture for Italy is more worrisome, as recent studies have shown evidence of expansion of morbidity both in terms of loss of autonomy (among the main determinants of LTC use) and of chronic diseases supporting the expansion of morbidity hypothesis (Atella et al., 2018; Chatterji et al., 2015). Nonetheless, the aforementioned predictions offer only a partial perspective, as the future paths of morbidity will also depend on the success of promoting and implementing active ageing policies (Barbabella et al., 2020; Kaeberlein, Rabinovitch, & Martin, 2015; Rechel et al., 2013).

Such ageing dynamics suggest that actual and potential demand for Long Term Care services in Italy will increase due to increasing prevalence of ill health and functional limitations with activities of daily living (ADL) and instrumental ADL (IADL) (European Commission, 2021). However, documenting whether the supply of LTC can keep up with the increase in demand is more challenging. As we already stated, the public provision of LTC is highly decentralized, as the governance of the Health Care system is run on a regional basis. The services range from in-kind provisions to cash transfers following patterns that may vary even at the municipality level. Older individuals who need care often rely on professional caregivers that offer home-services or even reside with the beneficiary paid out-of-pocket, but there is also a large “informal” Long Term Care component. It is often the case that older people make use of a mixture of public and private provision, plus informal care offered by relatives in order to meet their care needs (Gori & Fernandez, 2015; Hashiguchi & Llana-Nozal, 2020). The debate over the effectiveness and the sustainability of the Italian LTC is exemplified by a legislative discussion which has led to a new Enabling Law (Legge Delega n.33/23<sup>rd</sup> March 2023), that will potentially lead to a full restructuring of the public LTC setting.

In this chapter we present a novel description of the Long Term Care system in Italy. We rely on data from the Italian sample of the Survey of Health, Ageing and Retirement in Europe (SHARE), and, to a minor extent, on aggregate statistics from the United Nations, Eurostat, and the Italian Office for National Statistics (ISTAT).

Three major findings emerge from our study. First, frail older people have little financial means to pay out-of-pocket for their care, which is concerning given the prospects of an increase in demand for care in the future. Second, we document how publicly provided care is highly fragmented with stark differences in terms of coverage and generosity across Italian regions. Third, the largest fraction of long term care is supplied informally, both in terms of quantity of services provided and in terms of (imputed) costs. Our findings highlight important lessons that can be drawn from the Italian case study, which are particularly relevant for policymakers and public health experts in both mature and developing economies.

## Part I: Aging, Disability and Well-Being.

### Data and Definitions

The primary source of data for our analysis is the Survey of Health, Ageing and Retirement in Europe (SHARE). This is a research infrastructure for studying the effects of health and socio-economic policies over the life-course of European citizens, designed to be comparable with the US sister survey Health and Retirement Study (HRS) and the English Longitudinal Study of Ageing (ELSA). The SHARE survey, which is still ongoing, provides information on demographics and family structure, activities, income and wealth, health and long-term care needs. Its first wave refers to 2004, where 530,000 in-depth interviews were performed with 140,000 people aged 50 or older from 28 European countries plus Israel, including Italy. In this chapter, we use data from SHARE wave 6 (which ran in Italy in 2015) and wave 7 (run in 2017). When focusing on “LTC beneficiaries”, we refer to a sub-sample of respondents aged 65 or older in 2015.

Our baseline data sample includes 3102 individuals, and we use the SHARE cross-sectional survey weights to compute our calculations and estimate the population correctly. However, those weights are designed to make the SHARE sample representative of the Italian population aged 50 and over, without taking into account the subgroup of older individuals that are living permanently in the nursing home. Although individuals that were previous respondents in SHARE are still interviewed even if they start to be residents of nursing homes, the survey under-represents this particular group<sup>1</sup>. This is a common issue in the HRS-family surveys. In the appendix, we provide details on the adjusted the cross-sectional weights to reduce this problem. The procedure we follow is conceptually the same as it is done for England in Chapter XX.

The key measures of health used in our analysis are based on self-reported limitations in ADL and IADL. ADL includes tasks such as: walking across room, dressing, bathing, eating, going to bed, and using the toilet. IADL instead includes using a map to move around in an unknown place, preparing hot meals, shopping for groceries, making telephone calls, taking medications, doing work around house or garden, managing money, doing personal laundry and other unspecified difficulties. The respondent can select any of these 15 items if they report difficulties due to a physical, mental, emotional or memory problem that they expect to last for more than 3 months. Although SHARE does not ask the precise extent to which a respondent is limited with the

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<sup>1</sup> The probability of being in a nursing home conditional on age 65+ computed SHARE wave 6 data using cross-sectional weights is 0.0125, while if we take the same statistic computed on the Italian population by ISTAT, the percentage rises at 0.0218.

selected task, we consider the respondents to be significantly impaired for the activities that they reported to have difficulty with.

Table 1 presents the distribution of the number of limitations by age groups: overall, 18.7% of sample has at least one limitation in ADL, but important differences in the prevalence of limitations emerge when looking at the different age groups. Most individuals aged 65 and over have no limitations, while 10.6% report no ADL limitations but at least one IADLs limitation. Among individuals aged 85 and over, 36.2% report no limitations, 14.1% report difficulties in IADLs but not in ADLs, and as many as 49.7% have at least one ADL deficit.

Table 2 reports the distribution of the specific types of ADL or IADL limitations for the age-groups 65 and over, and 85 and over. We also report the distribution of ADL and IADL limitations, conditional on reporting at least one limitation. The most frequent ADL limitations relate to ability to bath and dress for both age groups. Respondents aged 65 or older are most likely to report problems with shopping for groceries, when we restrict the analysis to the group 85 or older, respondents are most likely to report difficulties with preparing hot meals and managing their money.

## Well-Being

In order to understand the patterns of provision and utilization of long-term care for older people in Italy, it is important to provide a contextual analysis of the economic well-being of the population that might be in need of care. The relationship between health and economic well-being is an important research area *per se*, but it is of particular relevance when looking at older people, as it can determine major differences across groups, including inequalities in the access to care (Floridi, Carrino, & Glaser, 2021).

Hence, to properly describe these mechanisms, we first present a general overview of the socio-economic situation of older people and their household in Italy by the number and type of limitations. Table 3 presents the association between the presence of three or more limitations in ADL (or iADL) and economic well-being. The first row of the table compares the poverty rate in the full sample and among respondents with at least three functional limitations (ADL or IADL): overall 17% of the older people have incomes below the poverty line, while 20.5% of individuals who report at least 3 difficulties are “poor”. In the second and third row of Table 3 we report the association between physical and emotional/cognitive health status of the respondent by age-group and degree of limitations. There is a clear negative gradient of health by age, as the percentage of individual that report a “good or better physical health status” drops from 45.1% in the full sample to 22.1% among the older group (85+). The same pattern emerges with respect to the prevalence of depression, which is substantially higher among the people 85+ than in the overall sample.

A more focused analysis is presented in Table 4 and in Table 5, where we look at the income distribution and the wealth distribution. The income measure and wealth measure are obtained as “generated variables” in SHARE, i.e. these are, for each Respondent, the result of the aggregation of the different income (wealth) items, and, at the household level, the sum of all incomes (wealth) of all household members. In particular, total-household-income is obtained by aggregating all individual’s net income components, while household-net-worth is generated by aggregating household real asset and household net financial assets. We normalize each measure using the OECD equivalence scale.<sup>2</sup>

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<sup>2</sup> We use the “OECD-modified equivalence scale”. This scale assigns a value of 1 to the household head, of 0.5 to each additional adult member and of 0.3 to each child.

Table 4 shows the unconditional distribution of income and wealth, by age groups, for older individuals: these are slightly skewed distributions, quite similar to what observed for the Italian population at large. For example for the age group 65+, the mean value of income is 13,164 € which is slightly higher than the median value of 11,936 €. When we turn the attention to Table 5 instead, we observe large disparities in the income and wealth distribution by number of limitations. Each column of the table sums to 100 and it shows the distribution of income (wealth) in each limitation category. Both income and wealth of individuals with no limitations appear as “evenly” distributed. The percentage of individuals falling in the two poorest categories (i.e., less than 50% of median income/wealth; and between 50% and 100% of the median income/wealth) is slightly higher than 45% in both distributions. However, when focusing on individuals affected by any number of limitations, the income and wealth distributions are more concentrated in the poorest groups. For example, in the group reporting more than 3 limitations in ADL, around 53% are in the poorest income groups, and 69.6% are in the poorest wealth groups.

## Part II: Long-Term Care System in Italy.

As shown in Part I, Italy faces a significant challenge in supplying adequate Long Term Care to an increasing fraction of older individuals. In this Section we provide an overview of the main pillars of social protection for vulnerable older people in Italy, ranging from public interventions to substantial family provisions, and to limited private markets.

By using the SHARE data we can investigate the use of formal versus informal help or care. In particular formal help/care includes: personal care services (e.g. getting in and out of bed, dressing, bathing and showering), help with domestic tasks (e.g. cleaning, ironing, cooking), meals-on-wheels (i.e. ready-made meals provided by a municipality or a private provider) and help with other activities (e.g. filling a drug dispenser). Informal help/care similarly includes personal care or services for domestic tasks, this can be further distinguished into: informal help or care received from individuals living outside the household, or personal care provided by people living in the same household (for the latter only personal care).

Table 6 shows the distribution of weekly hours of care received for both formal and informal care, conditional on receiving any type of care. The median number of hours of care per week received in the full sample is 8, but the mean is 19 hours and 25 percent of the population receives at least 40 hours of help per week. The data suggest that the care needs are higher for the oldest old: the median number of weekly hours of care for this group is 24, the mean is 28 and the top 5 percent of the distribution receives 64 or more hours of care per week.

In this section we focus on the public expenditure on long-term care (LTC): the overall amounts are in line with the European average, but differently from other countries formal cash-support comes in most cases, and for a large share of the overall benefits, from a national cash benefit (*Indennità di Accompagnamento*). The coverage of publicly subsidised home care and residential care is limited, with large differences across regions and municipalities in formal care availability and access criteria. The Italian LTC system is strongly based on informal family support and migrant care workers, often with irregular contracts (European Commission, 2021; Jessoula, Pavolini, Raitano, & Natili, 2018).

In Figure 3, we report the share of GDP spent on long-term care in Italy as computed by the national accounting office (*Ragioneria Generale dello Stato*) of the Ministry of Economics and Finance, available from 2004 to 2020. The overall aggregate includes the expenditure on healthcare component of long-term care, the national attendance allowance, a cash-benefit programme called “*Indennità di accompagnamento*”, and the expenditure for other LTC provisions<sup>3</sup>.

Overall, the public expenditure on LTC lies between 1.5% of GDP in 2004 and 2% in 2020, with a notable increase in the years of the financial and economic crisis following the Great Recession at the end of the 2010s. It is worth noting that this expenditure figures are higher than the those reported by the widely used OECD reports (OECD, 2019), as the OECD figures only include health-care related long term care costs. Figure 3.1 further shows how the LTC expenditure is split between its three components (health; cash-benefit; other), and

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<sup>3</sup> In particular, the “*indennità di accompagnamento*” is a non-means-tested cash benefits paid to dependent people. ‘Other LTC provisions’ include heterogeneous benefits, largely in kind, provided at local level by municipalities. These are generally means-tested.

how it is predicted to increase in the following decades, based on simulations by the Ministry of Economics and Finance (MEF).

Long-term care is a form of insurance covering costs, which can be potentially very high, particularly in relation to the resources available to older households. In Italy, very few individuals hold private long-term care insurance, as people mostly rely on the public provisions or on out-of-pocket financing. Figure 4 shows the relevance of the various financing sources from 2012 to 2019. The share of expenditure covered by private insurance is basically negligible: more than 70% of the expenditure is financed by the government, while the remaining share is paid out of pocket by the user<sup>4</sup>.

Figure 5 shows how long-term care spending can be disentangled by type of expenditure. Long-term care expenditure in Italy is classified both according to the type of health-care received and to the facilities that provide such care. The Central Statistical Office ISTAT, in particular the system of health accounts, provides a split of LTC expenditure into four groups: inpatient long-term care, day long-term care, outpatient long-term care and home-based long-term care.

To back up these figures we look at the facilities that provide such long-term care services: the expenditure for Inpatient long-term care (health) refers to hospitals<sup>5</sup> and residential long-term care facilities<sup>6</sup>, while for the other three types of care it refers to providers of ambulatory health care<sup>7</sup>. Figure 6 shows again the composition by type of expenditure, split between formal home care versus nursing home care, where the two categories are derived from the facilities that provide the service. The costs for care provided in nursing-homes is financed by the Government for 63.28%, while it is paid out-of-pocket for the remaining 36.39%. However, in the case of home-based care (nursing-care), the contribution of public funds to the total costs increases up to 92.77%.

### **Eligibility to Public LTC programs**

The Italian LTC in-kind or in-cash programs are mostly regulated at the regional level, the system exhibits high variability across regions in terms of both the services provided and target population (i.e., the eligibility rules). A thorough review can be found in Brugiavini, Carrino, Orso, and Pasini (2017).

#### *National cash benefit*

A national cash benefit, called *Indennità di Accompagnamento* (IA), is available to individuals who are assessed as *invalid*. The definition of invalidity itself is somewhat fuzzy, as it refers to individuals who are (i)

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<sup>4</sup> The reported statistics by the System of Health Accounts includes the final consumption expenditure of resident units on healthcare goods and services, including the healthcare goods and services provided directly to individual persons as well as collective healthcare services.

<sup>5</sup> Hospitals (HP1):

means licensed establishments that are primarily engaged in providing medical, diagnostic, and treatment services that include physician, nursing, and other health services to inpatients and the specialized accommodation services required by inpatients and which may also provide daycare, outpatient, and home healthcare services.

<sup>6</sup> Residential long-term care facilities (HP2):

means establishments that are primarily engaged in providing residential long-term care that combines nursing, supervisory, or other types of care as required by the residents, where a significant part of the production process and the care provided is a mix of health and social services with the health services being largely at the level of nursing care in combination with personal care services.

<sup>7</sup> Providers of ambulatory health care (HP3):

means establishments that are primarily engaged in providing healthcare services directly to outpatients who do not require inpatient services, including both offices of general medical practitioners and medical specialists and establishments specializing in the treatment of day-cases and in the delivery of home care services



blind or (ii) physically/mentally disabled, (iii) unable to walk without continuous help, or (iv) need permanent assistance with ADL (Brugiavini et al., 2017). The assessment is performed by a health-district level commission of the National Social Insurance Agency (INPS) and is initiated by the patient's General Practitioner. In 2021, the IA amounted to a monthly cash-benefit of €522,10 (see <https://www.inps.it/prestazioni-servizi/indennita-di-accompagnamento-agli-invalidi-civili>). The cash allowance is not subject to a stringent ex post monitoring, as recipients are free to choose how to spend it. This is part of a larger concern over the general lack of an established and homogeneous regulation of quality checks in the LTC governance in Italy (European Commission, 2021).

### *Regional programmes*

Most Italian regions offer specific programmes of care to guarantee the minimum level of support for basic needs (*livelli essenziali di assistenza*), either in-kind or in-cash, targeting both domiciliary care and, to a lower extent, residential care. Regions obtain national funding to implement such policies, through the National Fund for the Loss of Autonomy (FNNA, *Fondo Nazionale Non Autosufficienza*) established in 2006 (Law 296/2006), complemented with region-specific funding from the Regional Funding for the Loss of Autonomy (FRNA, *Fondo Regionale per la Non Autosufficienza*) (Brugiavini et al., 2017).

The programs financed by FNNA or FRNA have two target populations: individuals with (i) extreme disabilities (*disabilità gravissima*) or (ii) with severe disabilities (*disabilità grave*). The former group includes individuals who are eligible for the IA benefit, and further have at least one additional severe condition, e.g., being minimally conscious or in intensive care, being heavily affected by dementia, living with extreme physical impairment (Brugiavini et al., 2017).

The definition of *severe* disability, which represents the minimum conditions for accessing public LTC support, is defined at regional level. Brugiavini et al. (2017) document a large variation across regions in the definition of the eligibility rules for LTC support, partially due to the absence of a unique definition of disability in the clinical literature, and to the different budget allocations which local authorities have at their disposal to fund LTC. Indeed, regions differ on the health-items included in the eligibility evaluation, in the definition of an entry-level need-of-care condition, and in the unit of measurement of the need-of-care index. An example of such variation comes from the eleven regions which had set up a clear-cut definition of eligibility (Bolzano, Campania, Emilia - Romagna, Friuli – Venezia Giulia, Liguria, Lombardia, Piemonte, Sicilia, Toscana, Veneto), which are summarized in Table 7. The table reports the main features of the assessment procedures, such as whether ADL and IADL difficulties are accounted for; whether availability of informal support is included in the evaluation; the definition of the minimum eligibility threshold; and what are the functional limitations that carry the largest weight in the assessment. The table emphasizes how, while all regions include ADL in their assessment, the role of IADL limitations, as well as of informal support changes significantly across areas. Similarly, the working definition of eligibility is so different across regions that a comparison at face value is almost impossible.

Why should these differences matter for older people? The answer relies in the emerging literature in health economics showing that being eligible for public LTC can significantly increase the likelihood of receiving care, above and beyond the role played by health limitations in determining the demand for care (Bakx, Meijer, Schut, & Doorslaer, 2014; Carrino, Orso, & Pasini, 2018). In other words, eligibility rules are a major driver of care utilisation rates, because they define the target population who has potential access to (and is *potentially*

covered by) LTC support. Brugiavini et al. (2017) define the ‘potential coverage’ rate of LTC rules as the ratio of the population aged 65+ who fulfils the requirements defined by a specific country-rule for LTC benefits. They show, by virtue of “direct-adjustment” standardisation, that the proportion of older Europeans that would be covered by LTC changes substantially depending on the definition of need-of-care used. In figure 7, we adopt the same methodology and compute the proportion of older Italians who would be considered eligible to receive public LTC benefits, depending on the eligibility rule used. This is tantamount to asking: if we applied the eligibility rules of each region to the whole older population in Italy, what proportion of that population would be potentially covered by LTC services? A higher percentage tells us that a system is more comprehensive in its coverage than a lower percentage by virtue of its eligibility rules, as we keep health constant by focusing on the sample underlying population. Coverage is expressed as a percentage of the sample aged 65+ in Italy from the SHARE survey. We also report the predicted share of population that would be eligible to the national LTC program (Indennità di Accompagnamento). The results show striking differences in the potential coverage for LTC, depending on the adopted definition of needs. Some rules evidently focus only on a population of highly disabled older people (e.g., Liguria, Sicilia, and some of the health districts in Lombardia), while other areas (the northern regions of Bolzano, Friuli Venezia Giulia and Veneto) aim at covering a broader population which includes pre-frail individuals and lower degrees of loss of autonomy.

### **Private Insurance**

The market for private LTC insurance in Italy is extremely thin. Moreover, most of the contracts are bundled with supplementary health insurance. As shown in Table 8, in the Italian sample of SHARE the prevalence of respondents aged 65+ holding a private LTC insurance is estimated to be 4.19%. The characteristics of private insurance holders are shown in Table 9, and compared to the characteristics of non-holders. Within the group aged 65+, insured individuals seems to have a higher probability to live in a nursing home, are more likely to receive formal home help and have higher wealth and income compared to the uninsured sample.

### **Long-Term Care utilization**

In Table 10 we illustrate the joint percentage distribution of people receiving care by age and by different degrees of loss of autonomy<sup>8</sup>. Among the full sample (which includes people with no ADL/IADL limitations), 26.5% are receiving some kind of help between formal and informal, domiciliary (i.e., home-based) and institutional (i.e., nursing-home or residential care). A stark difference by age emerges: 57.8% of the individuals 85+ receive some form of help. However, once we condition on the presence and number of limitations, as a measure of need-of-care, the difference across number of limitations and between age groups decrease: 53.4% percent of people 65+ with one ADL limitations receive help, as opposed to 69% of those 85+. For people with three or more limitations, the comparable figures more similar, 75.7% and 79.2%.

Figure 8 considers the types of care received among the sub-population of care users. We consider four types of care: formal home-based care only, informal home-based care only, both formal and informal home-based care (mixed care), and institutional care. The majority of care recipients, 55% (47.2% among the 85+) receive only informal home-based care, while only 21.3% (23.5%) receive only formal home-based care. The share of

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<sup>8</sup> In order to increase the sample of individual over 85 years old we combined SHARE wave 6 and 7. We adjust the calibrated weights of wave 6 and 7 to take into count the under representativeness of the nursing home population as explained in appendix.

respondents receiving mixed care are at 15.4% in the 65+ sample, and 20.7% for the 85+ sample. Finally, the share of people receiving institutional care is slightly more than 8% for both age groups.

Figure 9 presents the pattern of the types of care received with respect to the ADL/IADLs groups (as usual distinguishing also two age groups in the top panel and bottom panel). The X-axis reports the number of limitations, while the Y-axis shows the percentage of individuals receiving care: as the number of limitations increases, the percentage of individuals receiving only informal help decreases. As predicted by theoretical and empirical evidence (Floridi et al., 2021), the percentage of people receiving mixed care increases with the number of ADL limitations, and this pattern is similar across age groups.

Table 11 shows the distribution of formal and informal hours of care per week, by respondent's age, among care recipients. As already noted, the distribution of hours of care for both formal and informal care is right skewed: the median number of weekly hours of formal care is 4 (that is, 50% of the care recipients receive less than 4 hours of care per week), while the mean is 13 hours per week. If we look at informal care, median and average care hours per week are 8 and 17, respectively. Individuals aged 85 years or older receive more informal care than younger respondents: median hours of help is 40, while 10% of the oldest old receive at least 46 hours of help per week (to give a sense of the relevance of the care intensity for the oldest old, the comparable percentage of people receiving 46 or more hours of care per week in the full sample amounts to 5%). An even larger difference by age emerges when looking at the utilization of formal home-based care: people in the top 10% of the distribution of care hours among the oldest old receive 35 hours of weekly formal home-based care more with respect to the top 10% of care users among the population aged 65+.

### **Formal Long-Term Care Supply**

There are over 12,000 nursing homes in Italy, endowed with almost 300 thousand beds (Table 12). With more than 13 million individuals ages 65 or older, that amounts to two beds per 100 older persons and about 15 beds per 100 persons ages 85 or older. Approximately, 95% of these beds are occupied at any point in time.

Table 13 shows a significant variation in nursing home capacity across the country: the number of beds per 100 older residents varies from 0.8 to 4.2, while the occupancy rate shows a relatively lower heterogeneity, as it ranges from 86.2% to 97.6% across regions.

Recent estimates report that in 2016 there were around 260,000 regular LTC workers in Italy, mostly females, which amounted to 1.9 per 100 people aged 65 and over, up from a ratio of 1.4 in 2011 (European Commission, 2021). These figures, however, do not account for a vast population of irregular LTC workers, sometimes referred to as '*badanti*' (mostly migrants), whose numbers have been estimated around 800,000 (European Commission, 2021).

Data on the care workforce is very limited in Italy, especially with respect to home-based care. The National Institute of Statistics (ISTAT) provides figures on the care workforce in care facilities (Nursing homes), which we summarize in Figure 10. Most workers in nursing homes are personal health assistants, followed by doctors, nurses and other professionals, with a large residual share of voluntary personnel.

There are two main profiles of professional care workers in Italy who can work in both nursing homes and home-care settings: Social-assistance Operator (Operatore Socio Assistenziale, OSA), and Medical-assistance Operator (Operatore Socio Sanitario, OSS). The OSA is an auxiliary healthcare figure, officially recognised, trained and prepared to directly assist people in carrying out daily activities, to help maintain and recover

autonomy, to offer support for the psychological and physical well-being of the patient, and to reduce and avoid social isolation and social exclusion. The OSS has, unlike the OSA, health-related training and preparation, which also allows her to act as an assistant to nursing staff in the operating theatre, besides working in the emergency room, and in nursing homes.

There is no comprehensive framework for quality checks on either residential LTC services or home-based services. Quality is monitored through authorization and accreditation processes, staff/users ratios, legislation on mistreatments, and training requirements for care workers (European Commission, 2021).

Table 14 summarizes the training requirements for both OSA and OSS care workers. The OSA training lasts approximately 800 hours with compulsory attendance, in addition to the internship at an accredited facility. The OSS training is longer (about 1000-1200 hours).

The lower-skilled profiles of ‘*badante*’ have no mandatory trainings or requirements to perform their job. However, since 2020, in order to incentivize the training programmes and increase the quality of the supplied care, *badanti* can be awarded a professional certificate if they complete at least 64 hours of no-cost training and pass a final examination can, provided they have at least 1 year of experience in providing care. Such certificate allows workers to receive a higher hourly wage by 8 to 10 euros.<sup>9</sup>

Table 15 shows the earnings of workers in the health and social sector reported by the Italian Statistical Bureau ISTAT, based on a two-digit NACE-code classification. The average hourly wage for workers in residential care activities is below the average salary for both part-time and full-time workers, with respect to the average hourly wage of workers in the industrial sector. Moreover, this average is also below the hourly wage of workers with less than a high school degree.

Unfortunately, we cannot retrieve information on the specific wages for the sub-set of jobs related to long-term care activities. On the basis of the distribution of workers presented in the third panel of Table 15, also classified on a three-digit NACE code, we assume that most residential care and social work activities (without accommodation) are related to long-term care services.

### **Who are the Caregivers?**

This section of the study is of particular relevance, as we present, for the first time, robust estimates of the size of “informal help” in Italy, and the results are quite striking. Table 16 show our estimates of the Italian population receiving help, with respect the type of help and age groups. Informal help is almost twice as large as formal help: 34.7% of individuals (37.1% of the oldest old 85+) receiving help report formal help, while this percentage is 83.8% (88.5%) for the reported informal help.

In a comparative perspective, the ratio of caregivers for the Italian population is not much higher than for other European countries: what characterizes Italian caregivers is the higher level of intensity of their commitment *vis-à-vis* the European average (European Commission, 2021).

Figure 11 shows the demographic characteristics of informal and formal caregivers<sup>10</sup>: more than 85% of the formal home care workers are women, while women providing informal care amount to 61.8% of the total number caregivers. However, it should be added that, in line with recent evidence from the Share-Corona

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<sup>9</sup> Further details available at the Italian National Office for Professional Accreditation website (ACCREDIA, <https://www.accredia.it/2020/06/24/colf-babysitter-badanti-la-certificazione-accreditata-sostiene-le-famiglie/>).

<sup>10</sup> Data source [INPS](#). We are reporting information for the formal home worker (i.e. Colf/Badanti) in Italy 2015.

Survey, some degree of gender-specialization emerges for informal caregivers, as women tend to provide personal care, which is a more demanding and intense activity, while men provide help with financial issues and shopping (Bassoli and Brugiavini, 2023).

Our results are also very interesting when looking at the age and education composition of care-givers. Formal home care workers are of the typical working ages, but more than 85% of the informal care-givers are older than 50; the majority of care-givers (55.7%) have less than a high school diploma or a high school diploma (32.7%) very few have a college degree or more.

Finally, Figure 12 provides details on the relationship between informal caregivers and care recipients: spouses and children amount to around 50% of the caregivers population. It emerges that daughters are twice as likely to provide care if compared to sons; 20 % is the share of in-laws, while the remaining share is made up of other relatives (13.8%) or friends (15.9%).

## Part III: The Cost of Long-Term Care.

As discussed in previous Sections, the Italian long term care expenditure is mostly financed with public funds. Table 17 reviews these total costs. In 2015, the total spending in nursing homes amounted to 7 billion euros, for a total of 288 thousands residents in nursing home, while the reported total spending in the home-based care (home health services) is 4.63 billion, euros with an estimated number of users of mostly 1.5 million<sup>11</sup>. Spending on nursing home care is 50% percent larger than home health agency, despite there being more than five-times as many users in the latter case.

However, because most of the home care is provided informally, typically by relatives, a proper accounting of the total cost of long-term care in the economy should include the opportunity cost of their time as well. Valuing the opportunity cost of informal caregivers raises several issues and requires several assumptions. In the simplest model, with perfectly competitive labor markets and market wages equal to the value of leisure, the value of time spent in informal care would be the foregone wage. If high potential wage individuals choose to provide informal care rather than buy it, it is either because they get sufficient utility from the provision of care, or because the care they provide is of sufficiently higher quality to justify the “cost”.

In such a model, even those who are not employed in the labor market would have an opportunity cost of time—that being the wage that they would earn if they were to enter the labor market. In practice, however, retired individuals often do not have work opportunities that are equal to their value of leisure. It is also hard to value the potential wage for workers who are very old and/or have been retired for many years.

We therefore consider two options for valuing hours of informal care. In both cases, if informal care is delivered by those who are working, the care is valued at their predicated wage. In one case, for those who are not working, we value their time at zero (“low valuation”). In the other case (“high valuation”), we value the time of those who are not working at the replacement cost of home care. It is not easy to obtain reliable information on actual wages for care workers in Italy. For the scope of our analysis, we first focus on the legislative minimum hourly wage for formal careworkers *badanti*: the minimum average wage for *badanti* is 5.43€ per hour, which corresponds to the average between the minimum wage for the lowest contractual category and the highest contractual category as reported in the national collective bargaining employment contract for “Badanti & Colf”. Second, we rely on estimates from the Economic Research Institute ([www.erieri.com](http://www.erieri.com)), which report an average actual wage for formal caregivers in Italy of €11 per hour (<https://www.erieri.com/salary/job/caregiver/italy>).

Moreover, quantifying the hours of informal home care require overcoming further challenges related to data-limitation. In the SHARE data, respondents can give details only for the informal care she provided to people living outside the household; conversely, when she provides informal help inside the household, no information on intensity is reported. Total hours of informal help are therefore built based on the self-reported help given to recipients outside the household, by a respondent in the SHARE w6 (age50+), which we complement with an imputed measure of informal help intensity given to people living inside the household. The latter value is imputed based on data from the ISTAT-Multipurpose survey on households: Time Use

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<sup>11</sup> Based on the previous Table 16.

(ISTAT-Indagine Multiscopo sulle Famiglie: Uso del tempo). The ISTAT survey provides an average amount of care hours provided by caregivers differentiated by sex and age class, based on self-reported information provided through a “daily diary”, and including activities such as: help with household tasks, help with personal care.

In order to predict the potential wage, we need to account for the fact that, in our sample, most respondents are retired, due to the sample selection of SHARE (people over 50 years of age at baseline) and due to the longitudinal nature of the survey. We therefore build an imputed measure of respondents’ hourly wage as well as of their employment probability. We use a multiple imputation regression logit model based on the observable characteristics such as age, age-squared, years of education, sex, marital status and number of children. The predicted average wage for respondents who are working at the time of the interview is 10.38€ per hour, while the average probability to be in paid work is 39%.

The “low valuation” estimate of the economic value of informal caregiving is computed by multiplying the number of each caregiver’s care-hours provided in one year, by the caregiver’s predicted wage, by the probability of being in paid work. Conversely, the “high valuation” estimate is computed by adding to the low valuation estimation the product between caregiving hours provided by the home-based health aide wage, by (1-probability of being in paid-work). As previously explained, we use two alternative values for the wage for the home-based formal care substitute: the minimum wage of *badanti*, and the actual average wage of formal care-workers in Italy. The resulting estimates of the economic value of informal care are reported in Table 18: the yearly value of informal care in Italy ranges from 11.2 to 22.91 billion of euros. In terms of the composition of total Long-term Care expenditure, we have shown in the previous section that this has three parts: the actual healthcare component, the cost for other LTC provisions and the national attendance cash-allowance. It should be stressed that while the first two can vary at regional level or even local level and are earmarked to Long-term Care services, the latter is a pure cash benefit granted to individuals aged 65 and over who qualify based on citizenship and there are basically very little constraints on the way this allowance is spent by the beneficiary and her/his relatives, so that in fact it may not be covering just Long-term Care services but more general expenditure items. The cash-benefit accounts for 0.64% of GDP: this implies that, for the year 2015, the public expenditure was 10.8 billion euro<sup>12</sup>, less than our lowest estimated cost for informal care.

We can combine this result with the previous data on long-term care spending to estimate the distribution of long-term care costs across public and private sources. We have shown in figure 6 that 63.28% of the cost of nursing home care and 92.77% of the cost of home health care are publicly financed while the remain part is privately financed, out-of-pocket or with private insurance. On the other hand, the full cost of informal care is just privately financed.

In Table 19, we show the expenditure in the nursing home and home health agencies financed by public and private funds. In addition, we include the estimated evaluation of informal care. We find that the majority of long-term care spending is privately financed when informal care is considered. Based on the “lower valuation” estimation of the economic value of informal care, private expenditure is 22.83€billion, which is equivalent to 1.36% of Italian GDP; while based on the “higher valuation”, the economic value of informal care can be estimated in the range between 28.94€billion and 34.54€billion, both equivalent to 1.72% and 2.05% of the Italian GDP.

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<sup>12</sup> Italy's GDP for 2015 was 1683€ billion (2019 euros).

## Part IV: Conclusions.

In this chapter we summarized the main features of the demand and supply of long-term care in Italy.

As per the demand side, we show that older people in need of care are generally poorer than healthier or younger individuals. Moreover, a large fraction of frail older people receives a substantial amount of care, from informal sources and/or from formal providers. This evidence, coupled with the aging trend of the Italian population, should warn policy makers: Italy will face in the incoming decades a clear rising demand for long-term care.

On the supply side, Italy is characterized by a two-tier system, consisting of a publicly provided LTC, which is very regionally fragmented, and of informal care. Finally, private insurance for LTC services is negligible. The public programs of long-term care include a national cash benefit, complemented by local programmes of in-kind and in-cash support in each of the twenty Italian regions. Generosity and eligibility rules vary widely across regions, creating disparities and unequal coverage. Informal long term care is largely bared by daughters and by daughters-in-law, typically with a low education level. This informal care provision is complemented by a large irregular market for care workers, mainly immigrant women (*'badanti'*).

Our analysis also aimed at estimating the overall costs of long-term care provision. In this respect, our main finding is that the vast majority of LTC costs in Italy are financed privately, either out-of-pocket or through forgone working opportunities for family caregivers. This is due to the large role played by informal care in the provision of long-term care, and even when adopting a conservative approach to impute the economic value of informal care. From a prospective point of view, it is important to note that, being Italy a low fertility country, such figures will hardly be reversed in the incoming decades. This finding has important policy implications: policymakers should be aware that the expected increase in demand for care will be hardly met without a larger role of publicly provided LTC or a quick development of a private insurance market. In absence of a substantial contribution through public provision, unmet needs in Italy could therefore increase and lead to lower welfare for older people and society as a whole.



## References

- Atella, V., Belotti, F., Cricelli, C. A., Dankova, D., Kopinska, J., Palma, A., & Piano Mortari, A. (2018). The "Double Expansion of Morbidity" Hypothesis: Evidence from Italy. CEIS Research Paper, 396/2017.
- Bakx, P., Meijer, C., Schut, F., & Doorslaer, E. (2014). Going formal or informal, who cares? The influence of public long-term care insurance. *Health economics*. doi:doi: 10.1002/hec.3050
- Barbabella, F., Checucci, P., Aversa, M.L., Scarpetti, G., Fefè, R., Socci, M., Di Matteo, C., Cela, E., Damiano, G., Villa, M., Amari, D., Montagnino, S.R., D'Agostino, L., Iadevaia, V., Ferrante, A., Lamura, G., & Principi A. (2020). Le politiche per l'invecchiamento attivo in Italia. Rapporto sullo stato dell'arte. Dipartimento per le Politiche della Famiglia-IRCCS INRCA. Website <http://famiglia.governo.it/media/2132/le-politiche-per-l-invecchiamento-attivo-in-italia.pdf>
- Bassoli, E. & A. Brugiavini (2023), Unequal care provision: evidence from the Share-Corona Survey University Ca' Foscari of Venice, Dept. of Economics *Research Paper Series No. 05/WP/2023*
- Brugiavini, A., Carrino, L., Orso, C. E., & Pasini, G. (2017). *Vulnerability and Long-term Care in Europe: an Economic perspective* London: Palgrave MacMillan.
- Carrino, L., Orso, C. E., & Pasini, G. (2018). Demand of long-term care and benefit eligibility across European countries. *Health economics*. doi:doi:10.1002/hec.3665
- Chatterji, S., Byles, J., Cutler, D., Seeman, T., & Verdes, E. (2015). Health, functioning, and disability in older adults—present status and future implications. *The Lancet*, 385(9967), 563-575.
- European Commission. (2021). *The 2021 ageing report : economic & budgetary projections for the EU Member States (2019-2070)*: Publications Office.
- Floridi, G., Carrino, L., & Glaser, K. (2021). Socioeconomic inequalities in home-care use across regional long-term care systems in Europe. *The Journals of Gerontology: Series B*, 76(1), 121-132.
- Gori, C., & Fernandez, J.-L. (2015). *Long-term Care Reforms in OECD Countries*: Policy Press.
- Hashiguchi, T. C. O., & Llana-Nozal, A. (2020). The effectiveness of social protection for long-term care in old age. doi:doi:<https://doi.org/10.1787/2592f06e-en>
- Jessoula, M., Pavolini, E., Raitano, M., & Natili, M. (2018). *ESPN Thematic Report on Challenges in long-term care. Italy*, Brussels.
- Kaerberlein, M., Rabinovitch, P. S., & Martin, G. M. (2015). Healthy aging: the ultimate preventative medicine. *Science*, 350(6265), 1191-1193.
- OECD. (2019). *Health at a Glance 2019*.
- Rechel, B., Grundy, E., Robine, J.-M., Cylus, J., Mackenbach, J. P., Knai, C., & McKee, M. (2013). Ageing in the European Union. *The Lancet*, 381(9874), 1312-1322.

## Appendix

In this appendix we describe how we adjusted the cross-sectional weights present in SHARE to consider the attrition problems that arise for individuals in nursing homes. We can easily see that the probability of living in a nursing home conditional on age 65+ is 0.0125 based on the wave 6 sample and using cross section weights; moreover, this probability falls to 0.0079 when we tried add wave 7 data and adjust for longitudinal weights. On the other hand, looking at national statistics, such as the ISTAT, this probability is 0.0218.

Since SHARE does not create sample weights for those in the nursing home, we adjust SHARE weights to match the reported percentage in the national statistics for individuals living in nursing homes and those not. The procedure we adopt is essentially the same as it is done to adjust weights from the English Longitudinal Study of Ageing (ELSA).

National statistics provided by ISTAT, allow us to retrieve the population of individuals 65+ in the nursing home, the percentage of females, and the percentage of those 80+. We use this information to compute the proportion of population in eight categories as illustrated in the table and to recalibrate the weights based on gender and age. In the following table, we show the imputed proportion:

WHOLE 65+ POPULATION				
	SHARE OF	ALL	MALE	FEMALE
In Nursing Home	65-79	0.005	0.001	0.004
	80+	0.017	0.004	0.012
Not in Nursing Home	65-79	0.693	0.321	0.373
	80+	0.285	0.103	0.182

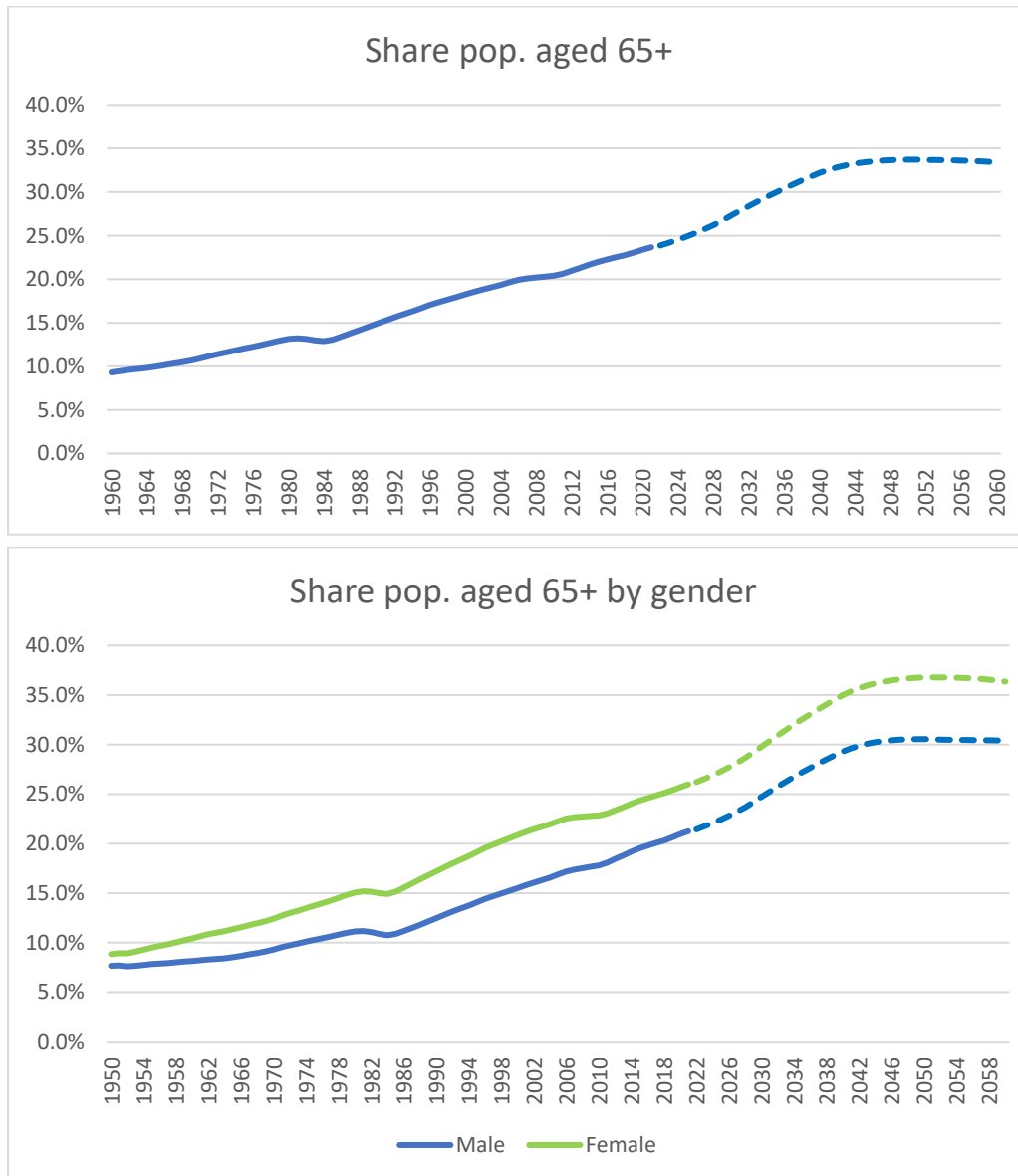
Table A.12: Staff in residential social and health care facilities. Italy 2018.

Professional qualification	Paid Staff
Directors And Coordinators	10,301
Employee	14,083
General Practitioners	6,753
Specialized Doctors	3,355
Psychologists	6,227
Sociologists	269
Social Workers	4,283
Teachers	339
Professional Youth Workers	25,457
Activity Leaders	4,768
Cultural Mediators	614
Nurses	41,002
Physiotherapists	10,884
Rehabilitation Physiotherapists	1,001
Speech Therapists	1,018
Health And Social Workers	116,308
Other Staff Providing Personal Care	41,836
Staff Involved In The Preparation And Distribution Food	14,691
Other General Service Staff	31,897
Civilian Service	3,982
Parent Figures	747
Other Personnel	13,279
<b>Total</b>	<b>353,094</b>

Source: [ISTAT](#), Residential social and health care facilities (Presidi residenziali socio-assistenziali e socio-sanitari). In addition to the paid staff there were 60,612 voluntary staff that helped in the residential facilities, but for them ISTAT does not report the specific qualification.

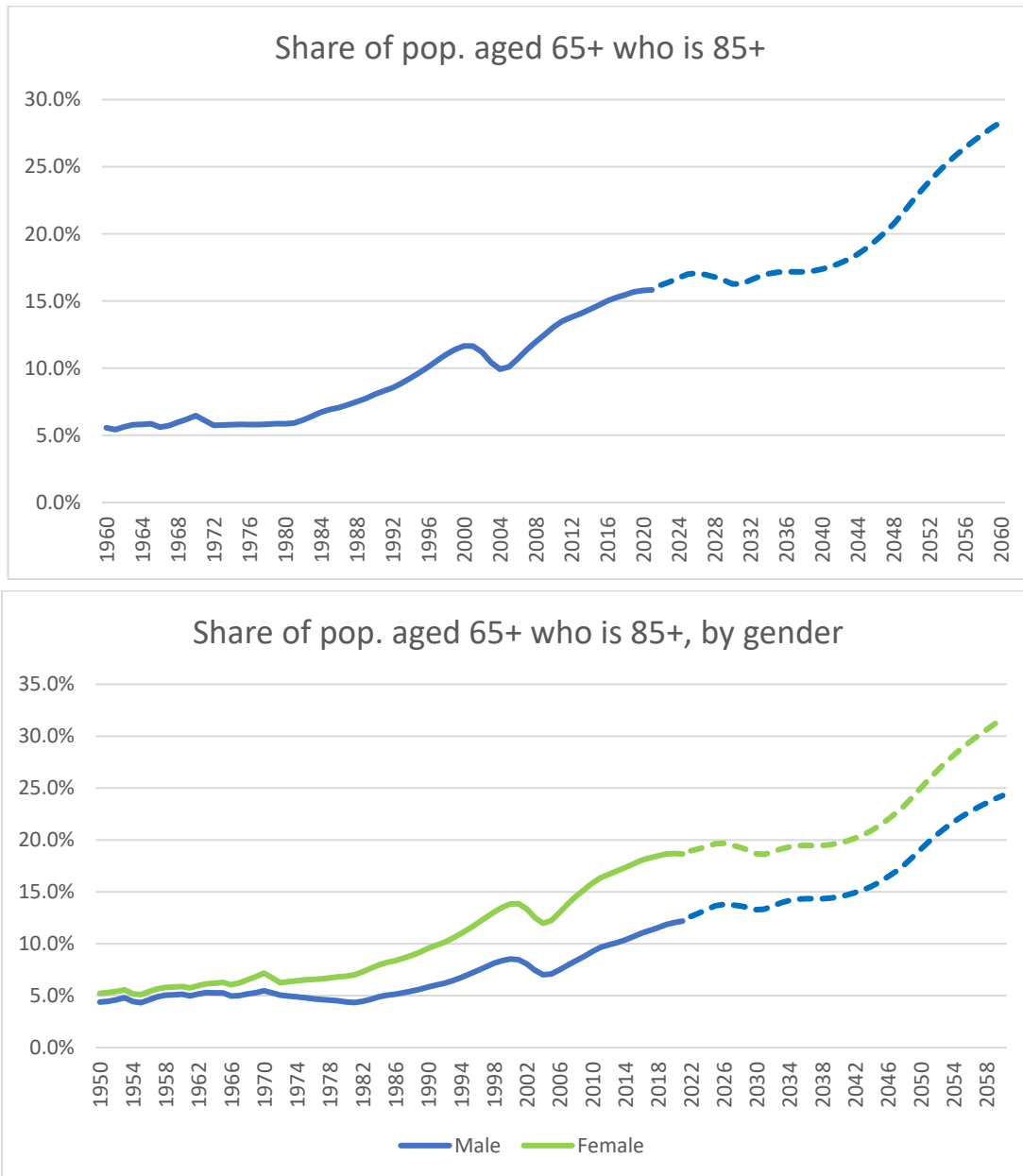
# Part I: Aging, Disability, and Well-Being

Figure 1: Percentage of population aged 65 or older. Italy 1950 - 2060



Source : [OECD Stat](#). Graphs based on the historical population data and population projections of the OCED.

**Figure 2: Percentage of 65+ population that is aged 85 or older. Italy 1950-2060**



Source : [OECD Stat](#). Graphs based on the historical population data and population projections of the OCED.

**TABLE 1: Percentage of 65+ and 85 population with difficulties in ADLs. Italy, 2015.**

# of ADLs	65+, percent	85+, percent
0 ADLs & 0 IADLs	0.707	0.362
0 ADLs & 1+ IADLs	0.106	0.141
1 ADL	0.069	0.147
2 ADLs	0.037	0.071
3 ADLs	0.018	0.050
4 ADLs	0.017	0.056
5 ADLs	0.023	0.085
6 ADLs	0.025	0.089
Any ADLs	0.187	0.497
Any IADLs	0.260	0.603
Obs	3,102	265

Source: Data are from the SHARE Wave 6 (2015). ADLs include walking across room, dressing, bathing, eating, going to bed, and using the toilet. IADLs include using a map in a strange place, preparing hot meal, shopping for groceries, telephone calls, taking medications, doing work around house or garden, managing money, doing personal laundry and unspecified difficulties. Weights used are adjusted to match national aggregates of the nursing home residents (see Appendix A).

**TABLE 2: Percentage of 65+ and 85 population with difficulties in ADLs. Italy, 2015.**

	65+ All	65+ Conditional	85+ All	85+ Conditional
<i>Panel 1- iADLs:</i>				
Preparing hot meal	0.089	0.342	0.313	0.520
Shopping for groceries	0.134	0.516	0.378	0.627
Telephone calls	0.065	0.249	0.237	0.393
Taking medications	0.072	0.275	0.252	0.417
Managing money	0.093	0.357	0.316	0.524
Obs	3092	667	265	150
<i>Panel 2- ADLs:</i>				
Dressing	0.131	0.699	0.338	0.680
Walking across room	0.061	0.327	0.171	0.344
Bathing	0.138	0.737	0.452	0.909
Eating	0.051	0.271	0.175	0.351
Going in/out of bed	0.083	0.442	0.270	0.543
Using the toilet	0.061	0.327	0.215	0.433
Obs	3,092	467	265	126

Source: Data are from the SHARE Wave 6 (2015). Column 1 shows the share of the sample that report having difficulty with each activity, while Column 2 shows the share of people with at least 1 iADL (panel 1) or at least 1 ADL (panel 2) who report having difficulty with each activity. Weights used are adjusted to match national aggregates of the nursing-home residents(see Appendix A).

**Table 3: Well-Being for those 65+ and 85+ by ADL Limitations (percentage). Italy, 2015.**

	65+	65+ with 3+ Lims	85+	85+ with 3+ Lims
Income below Poverty Line	0.170	0.205	0.239	0.258
Self-Report of Health – Good or Better	0.451	0.060	0.221	0.066
Depressed on the last month	0.380	0.777	0.549	0.750
Observations	3,102	301	265	94

Source: Data are from the SHARE Wave 6 (2015). Our Limitations Index runs from 0-12 and is the number of ADLs/IADLs that are either difficult or not done from eating, bathing, dressing, using the toilet, walking across a room, and getting in/out of bed (ADLs) + using a telephone, managing money, taking medications as prescribed, shopping for groceries, and cooking a hot meal (IADLs). Poverty line is fixed at 50% of the median income. The depression variable used is the generated EURO-D by SHARE which is based on a set of 16 variables that collect information on mental health in the last month before the interview, for this we identify as “Depressed” an individual with EURO-D>3. Weights used are adjusted to match national aggregates of the nursing home residents (see Appendix A).

**Table 4: Income and Wealth Distribution. Italy 2015**

	Income 65+	Income 85+	Wealth 65+	Wealth 85+
5th Percentile	263	263	0	0
10th Percentile	3,383	1,664	2,058	0
25th Percentile	7,656	6,174	56,235	12,942
50th Percentile	11,936	10,290	112,504	174,930
75th Percentile	16,226	14,200	205,800	316,932
90th Percentile	22,912	18,385	324,478	411,600
95th Percentile	28,126	22,226	445,214	411,600
Observations	3102	265	3102	265

Source: Data are from the SHARE Wave 6 (2015). Both income and wealth are at household level and post-tax. Mean income for 65+ (85+) 13,164€ (10,686€) and Mean Wealth 152,230€ (13,3417€). Weights used are adjusted to match national aggregates of the nursing home residents (see Appendix A). All values are adjusted to 2019 euros

**Table 5: Income and Wealth Distribution by Limitations for 65+ (percentage). Italy, 2015.**

	0 ADLs & 0 IADLs	0 ADLs & 1+ IADLs	1 ADL	2 ADLs	3+ ADLs	Total
<i>Panel 2: Income</i>						
<50% median income	0.147	0.201	0.282	0.199	0.227	0.170
50%-100% median income	0.308	0.449	0.407	0.306	0.304	0.329
100-150% median income	0.311	0.242	0.193	0.356	0.300	0.296
150-200% median income	0.128	0.060	0.081	0.090	0.116	0.115
200%+ median income	0.106	0.049	0.037	0.049	0.053	0.089
Total	0.707	0.106	0.069	0.037	0.083	
Obs	2,327	305	184	95	191	
<i>Panel 2: Wealth</i>						
<50% median wealth	0.206	0.3107	0.391	0.407	0.473	0.259
50%-100% median wealth	0.246	0.2796	0.233	0.192	0.223	0.245
100-150% median wealth	0.182	0.2267	0.131	0.176	0.117	0.178
150-200% median wealth	0.147	0.0602	0.074	0.095	0.055	0.123
200%+ median wealth	0.219	0.1228	0.171	0.131	0.131	0.195
Total	0.707	0.106	0.069	0.037	0.083	
Obs	2,327	305	184	95	191	

Source: Data are from the SHARE Wave 6 (2015). Each cell reports the share of respondents in the respective ADL/iADLs category who are in that row's income group. The median household income, based on the sample distribution, is 11936€; while median household wealth is 112504€. Weights used are adjusted to match national aggregates of the nursing home residents (see Appendix A). All values are adjusted to 2019 euros

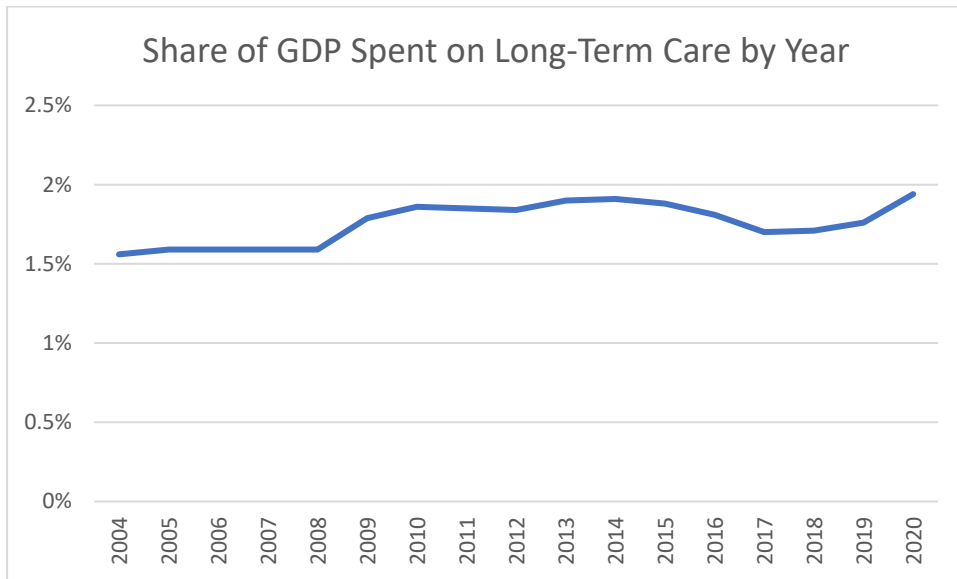
## Part II: Long-Term Care System in Italy.

**Table 6: Distribution of Hours of Help Received per Week. Italy, 2015.**

	65+	85+
5th Percentile	<1	<1
10th Percentile	<1	<1
25th Percentile	2	6
50th Percentile	8	24
75th Percentile	40	40
90th Percentile	40	46
95th Percentile	46	64
Mean	19	28
1 Hour per Day or Less	0.173	0.105
5 Hour per Day or More	0.631	0.757
Observations	725	134

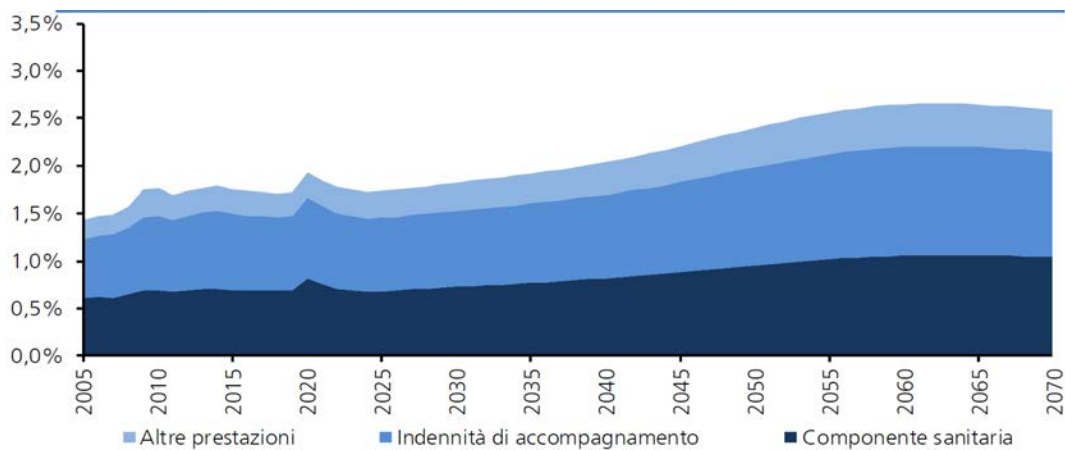
Source: SHARE wave 6. Respondent weights are used for all population estimate calculations. Nursing home residents are excluded. Formal help hours are imputed using data from W1 and 2 to the individual that reported to have used formal help in wave 6. While received informal help inside the household is imputed with ISTAT information and informal help outside the household is converted from the frequency: daily help as 40 hours per week, weekly help as 8 hours per week, monthly help as 2 hours per week and less often as half an hour per week.

**Figure 3: Share of GDP spent on long-term care. Italy**



Source: [MEF](#) (Ministry of Economy and Finance) state general accounting department: mid/long-term trends for the pension, health and long-term care systems reports.

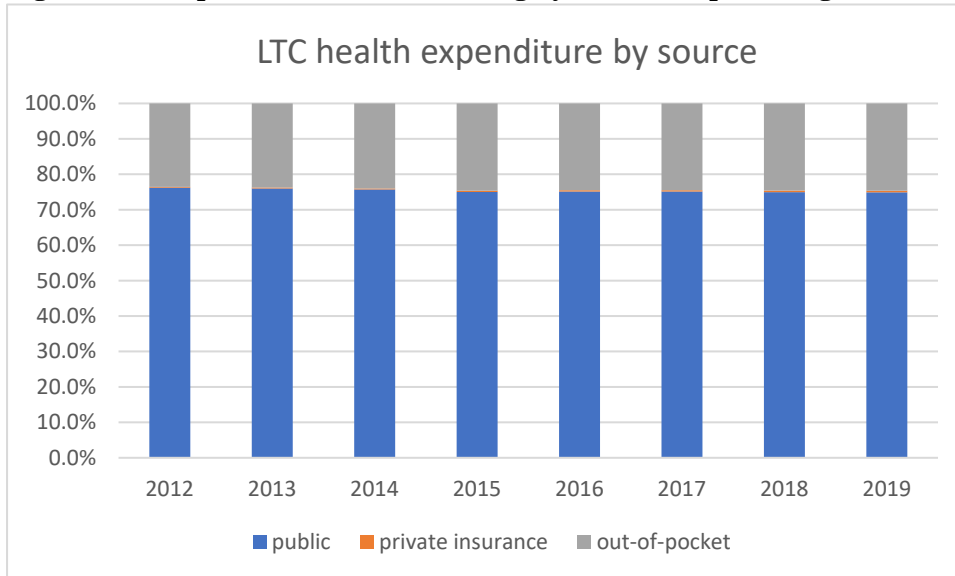
**Figure 3.1: Share of GDP spent on long-term care. Italy national baseline prospect**



Source: [MEF](#) (Ministry of Economy and Finance) state general accounting department: mid/long-term trends for the pension, health and long-term care systems reports.

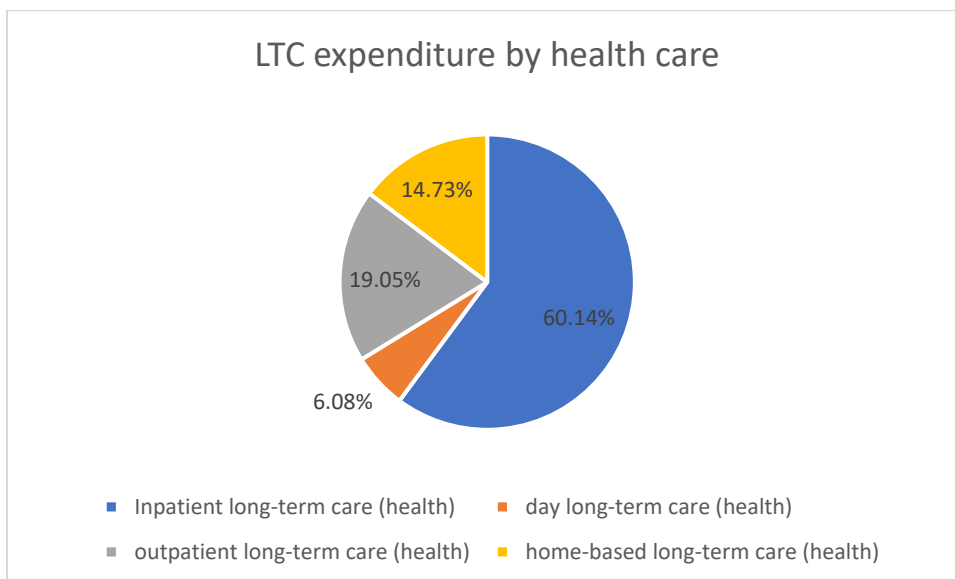


**Figure 4: Composition of LTC Financing by Source (in percentages)**



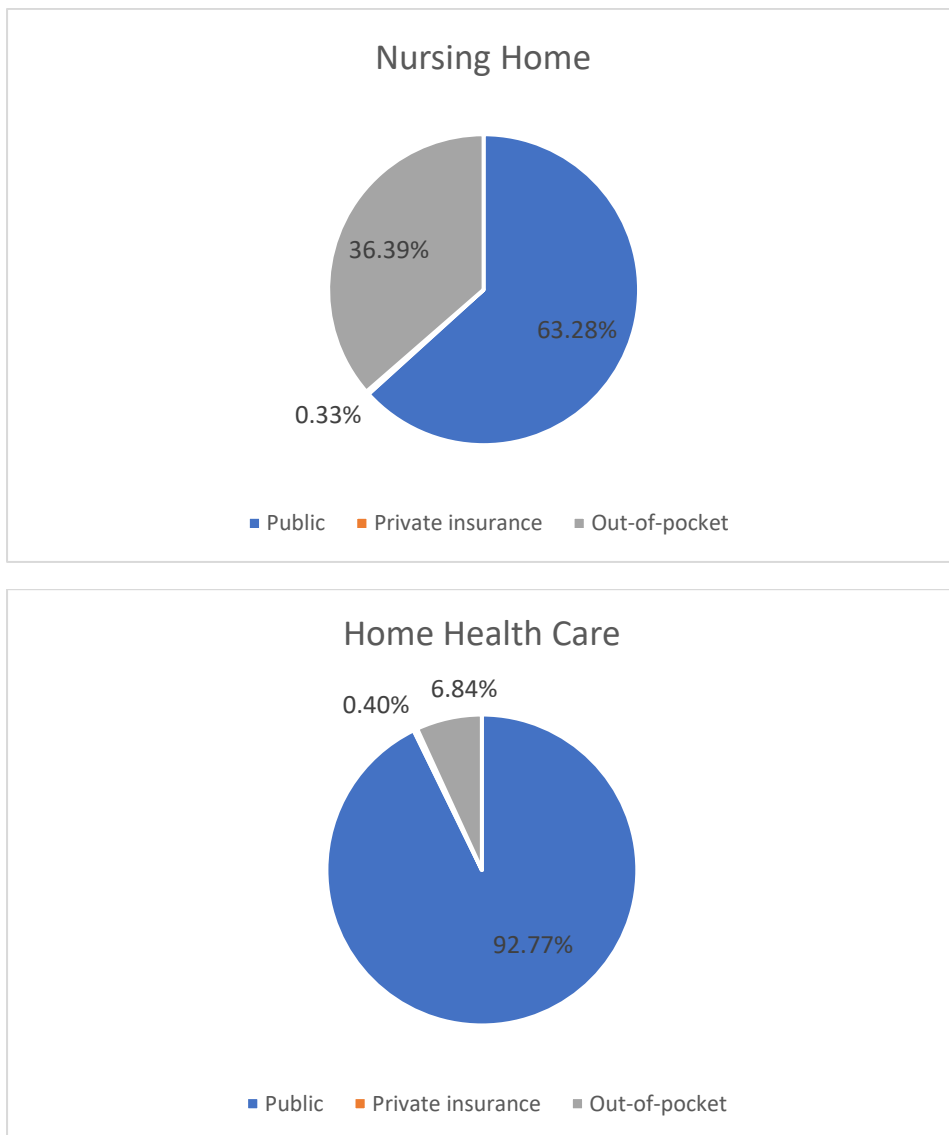
Source: ISTAT - [System of Health Accounts](#). It provides statistics on healthcare expenditure and financing on the Country's health system.

**Figure 5: Composition of LTC by type of long-term patient (in percentages)**



Source: ISTAT - [System of Health Accounts](#). It provides statistics on healthcare expenditure and financing on the Country's health system.

**Figure 6: Composition of home health-care expenditure and nursing care facilities expenditure, by source of funds. Italy 2015**



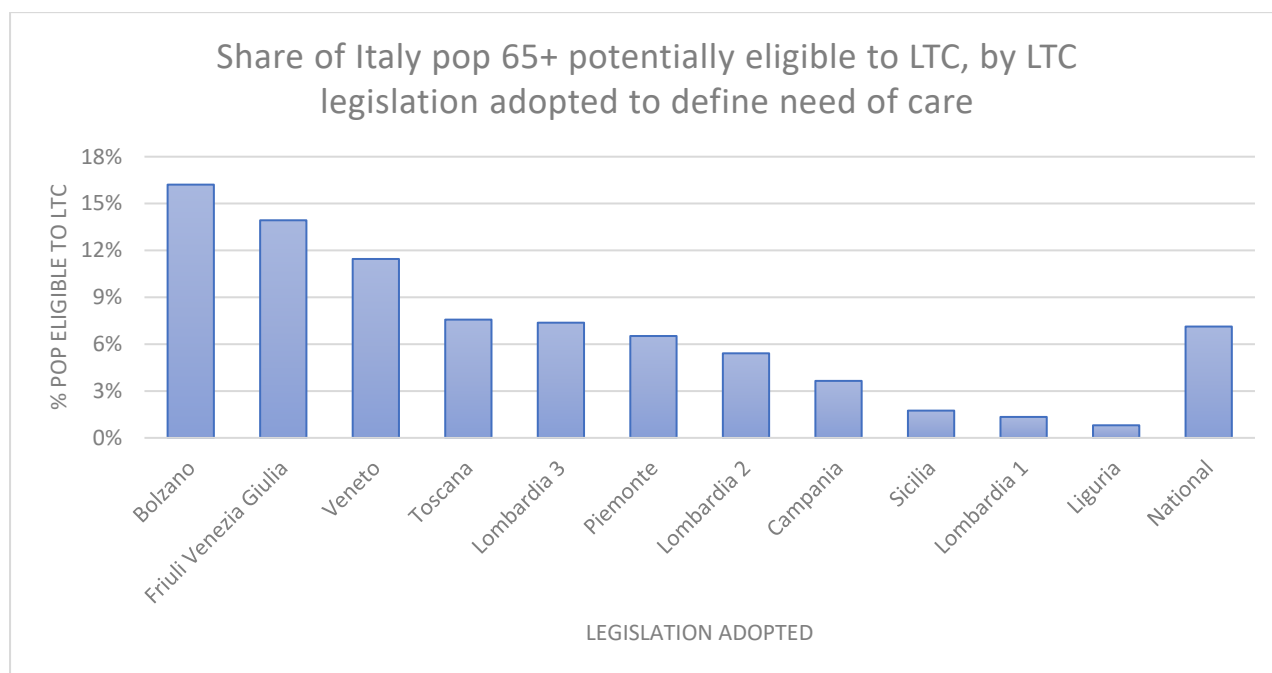
Sources: ISTAT [System of Health Accounts](#). It provides statistics on healthcare expenditure and financing on the Country's health system.. Given the categories defined by ISTAT we include in nursing home the aggregation of HP1 and HP2 while we aggregate the other categories in home health care.

**Table 7: Summary of Italian LTC legislations: definition of “severe need”. 2017**

Region	Program	ADL	iADL	Others	Informal support	Eligibility threshold
Bolzano	Assegno di cura (VITA)	✓	✓	C		2h die
Campania	Assegno di cura (SVaMA)	✓		C,	p	Barthel score 55
Em. Rom.	Assegno di Cura (BINA)	✓		C, M	✓	230 points
Friuli V.G.	CAF/APA (KATZ)	✓		C, M		2 ADL / cognition
Liguria	ADC (AGED PLUS)	✓	p	C		Invalidity & 3 ADL / Cognition / Behavior
Lombardia	Misura B2 (Triage + ADL + iADL)	✓	✓		✓	Invalidity + triage score 3 + 3 ADL + 4 iADL
Piemonte	Assegno di cura, bonus famiglia (cartella geriatrica)	p	✓	C, B		5 points
Sicilia	Buono sociosanit. (SVaMA)	✓	p	M	✓	Invalidity & Living with family
Toscana	PAC (MDS-HC)	✓*		C, B		2 ADL + cognition + behaviour
Veneto	ICD (SVaMA)	✓		C, M, B	✓	-

C = cognitive limitations; M=means tested; p = included partially  
i = Incontinence not included

**Figure 7: Share of 65+ Italian population potentially eligible to LTC benefits under different rules**



Source: SHARE wave 6 (2015), age 65+. Respondent weights are used for all population estimate calculations. Nursing home residents are excluded.

**Table 8: Population with LTC Insurance. Italy, 2015.**

	65+
Population with LTC Insurance	553,879
Share of Population	0.0419
<i>Observations</i>	<i>3,092</i>

*Source: SHARE wave 6. Weights used are adjusted to match national aggregates of the nursing home residents (see Appendix A).*

**Table 9: Characteristics of the population by LTC Insurance. Italy, 2015.**

	65+ Insured	65+ Uninsured
Total Household Wealth – Mean	236,360	148,199
Total Household Wealth – Median	164,640	109,847
Total Household Income – Mean	18,534	12,966
Total Household Income – Median	13,859	11,747
In Nursing Home (%)	0.051	0.025
Live with Spouse or Partner (%)	0.537	0.581
Formal Home Help (%)	0.170	0.132
Informal Home Help (%)	0.312	0.258
<i>Observations</i>	<i>126</i>	<i>2,963</i>

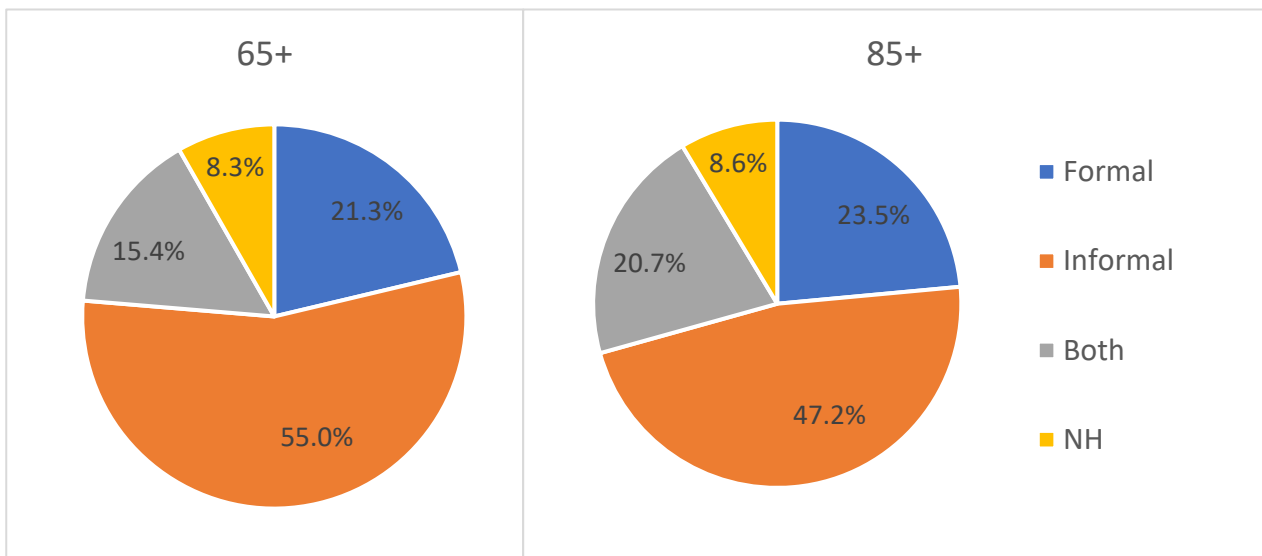
*Source: SHARE wave 6. Weights used are adjusted to match national aggregates of the nursing home residents (see Appendix A). Nursing home residents include both those that are living in a nursing home or stayed at one during last year. All variables (income, wealth, types of help) are defined as they were in previous tables. All values are normalized, and they are in 2019 euros.*

**Table 10: Individuals receiving care by age and number of ADL. Italy, 2015.**

# of ADLs	65+, percent	85+, percent
Full Sample	0.265	0.578
0 ADLs & 1+ IADLs	0.441	0.598
1 ADL	0.534	0.690
2 ADLs	0.693	0.777
3+ ADLs	0.757	0.792
<i>Observations</i>	<i>6,033</i>	<i>563</i>

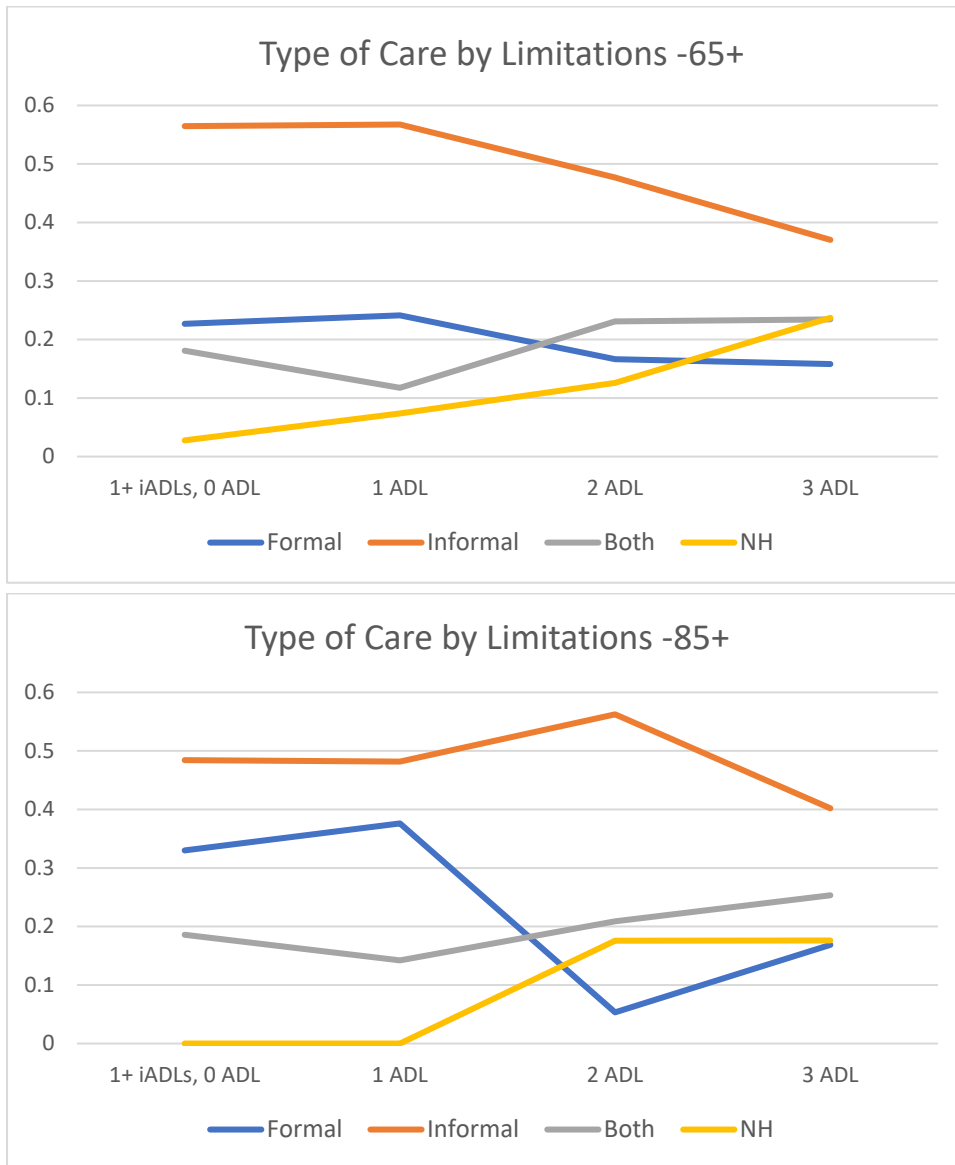
*Source: The data are from the combining of SHARE Wave 6 and 7. The care variable is defined as either formal or informal care received or both. Formal help includes help with personal care, domestic tasks, meals-on-wheels, other activities and nursing home, while Informal help include help received both from outside and inside the household, with personal care, practical household help, and help with paperwork. We adjusted the longitudinal calibrated weights, provided by SHARE for the combining dataset of wave 6 and 7, so that individuals in nursing homes match national aggregates.*

**Figure 8: Type of Care Received by Age. Italy, 2015.**



*Source: Data are from the SHARE Wave 6 and 7. The variables are defined as they were in previous tables. The individual in nursing home are those that have reported to have stayed in one of them permanently in the last 12 months. We adjusted the calibrated weights, provided by SHARE, so that individuals in nursing homes match national aggregates.*

**Figure 9: Type of Care Received by Age and Limitations. Italy, 2015.**



Source: Data are from the SHARE Wave 6 and 7. The variables are defined as they were in previous tables. The individual in nursing home are those that have reported to have stayed in one of them permanently in the last 12 months. We adjusted the calibrated weights, provided by SHARE, so that individuals in nursing homes match national aggregates

**Table 11: Distribution of Weekly Hours of Care Received by Type, for the sample of Care Recipients. Italy, 2015.**

Percentiles	Informal Help		Formal Help	
	65+	85+	65+	85+
5th Percentile	<1	<1	1	2
10th Percentile	<1	<1	1	2
25th Percentile	2	8	2	2
50th Percentile	8	40	4	5
75th Percentile	40	40	11	16
90th Percentile	40	46	28	50
95th Percentile	46	46	56	80
Mean	17	25	13	18
Observations	556	107	282	60

Source: SHARE wave 6, subsample of Italian respondents receiving care. Respondent weights are used for all population estimate calculations. Nursing home residents are excluded. Formal help hours are imputed using data from W1 and W2 to the individual that reported to have used formal help in wave 6. While received informal help inside the household is imputed with ISTAT information and informal help outside the household is converted from the frequency: daily help as 40 hours per week, weekly help as 8 hours per week, monthly help as 2 hours per week and less often as half an hour per week.

**Table 12: Absolute number of nursing homes, beds, and occupancy rate. Italy 2018.**

	Italy 2018
Nursing homes	12,857
Nursing home residents aged 65+	282,385
Long-term care beds in nursing and residential care facilities	297,970
Occupancy rate	94.8%
Pop 65+	13,391,566
Beds per pop. 65+	0.022
Pop 85+	2,009,441
Beds per pop. 85+	0.148
Workers in the nursing home	413.706

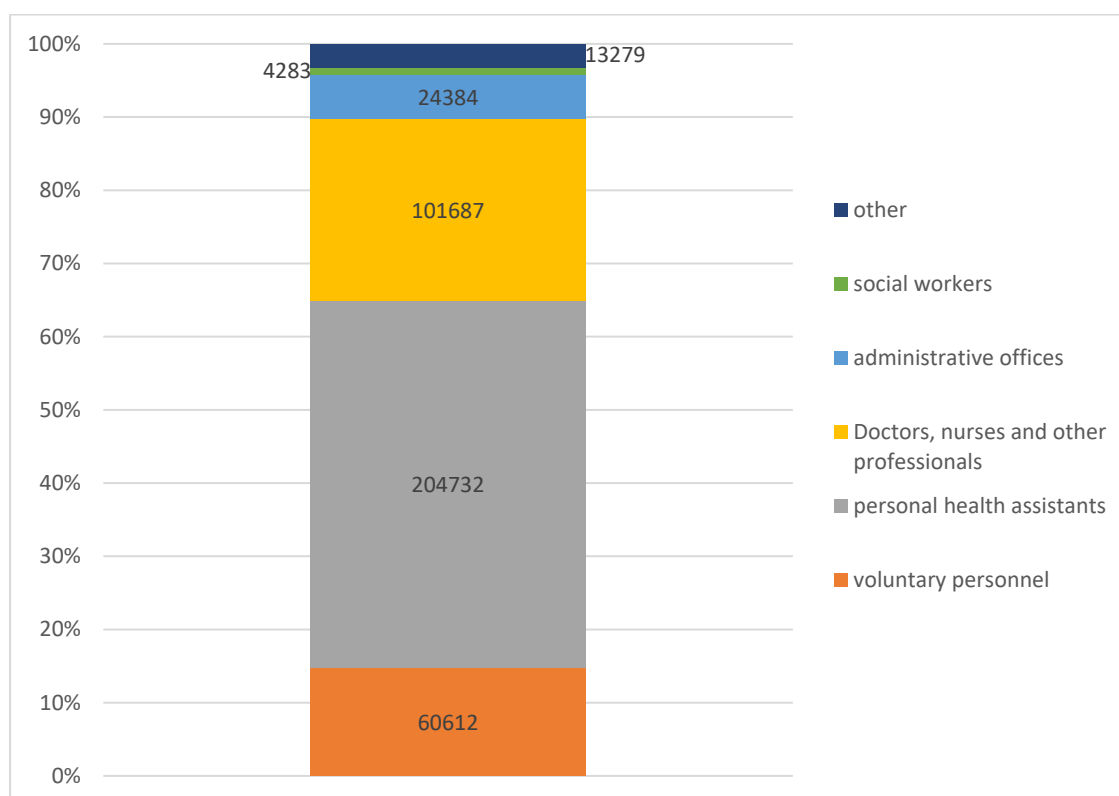
Source: for beds in nursing homes (posti letto in residenze comunitarie), number of nursing home residents (anziani per tipo di residenzialità), and for number of nursing homes (Presidi residenziali socio-assistenziali e socio-sanitari) [ISTAT](#). The total number of workers reported here include paid and voluntary staff, in the Appendix table A.12 we show their details by professional qualification. For population data [OECD Stat](#).

**Table 13: Distribution of nursing homes occupancy rate and beds across regions. Italy, 2018**

	Occupancy rate	Beds per pop 65+
<b>5%</b>	0.862	0.008
<b>10%</b>	0.894	0.011
<b>25%</b>	0.929	0.013
<b>50%</b>	0.940	0.020
<b>75%</b>	0.947	0.033
<b>90%</b>	0.961	0.039
<b>95%</b>	0.976	0.042

Source: [ISTAT](#), database on Nursing home care facilities (Presidi residenziali socio-assistenziali e socio-sanitari: Personale)

**Figure 10: Number and Percent distribution of workers at care facilities. Italy, 2018.**



Source: Data from the ISTAT database on Nursing home care facilities (Presidi residenziali socio-assistenziali e socio-sanitari: Personale)

**Table 14: Training requirements for formal home care workers. Italy.**

	Minimum training requirement
Assistant social worker (OSA)	800 hours
Health Social Worker (OSS)	1000 hours
Home Aide (Badanti)	Between 0 and 500 hours

Source: [OSA](#), [OSS](#) and [Badanti](#). For the latter group, the minimum training requirement is not mandatory and it is a professional certificate.



**Table 15: Pay for care workers at residential facilities and in health care, Italy 2015.**

	Mean hourly wage			Median hourly wage		
	Full Time	Part Time	Total	Full Time	Part Time	Total
<i>Panel 1 - Human health and Social work activities</i>						
86: Human Health Activities	14.76	11.66	13.30	12.77	10.26	11.22
87: Residential Care Activities	11.55	10.86	11.17	10.43	9.84	10.15
88: Social Work Activities Without Accomm.	11.27	10.63	10.79	10.18	9.65	9.78
<i>Panel 2 - All Industry</i>						
All Workers	15.39	12.02	14.97	12.86	10.26	12.54
No High School Degree			13.17			11.99
No College Degree			15.63			13.25
College Degree or More			23.06			17.16
<i>Panel 3 - Distribution of employees in Human health and Social work activities</i>						
86: Human Health Activities						239,028
861: Hospital Activities						37%
862: Medical And Dental Practice Activities						41%
869: Other Human Health Activities						22%
87: Residential Care Activities						152,440
871: Residential Nursing Care Activities						13%
872: Residential Care Activities For Mental Retardation, Mental Health And Substance Abuse						10%
873: Residential Care Activities For The Elderly And Disabled						51%
879: Other Residential Care Activities						26%
88: Social Work Activities Without Accommodation						148,247
881: Social Work Activities Without Accommodation For The Elderly And Disabled						55%
889: Other Social Work Activities Without Accommodation						45%

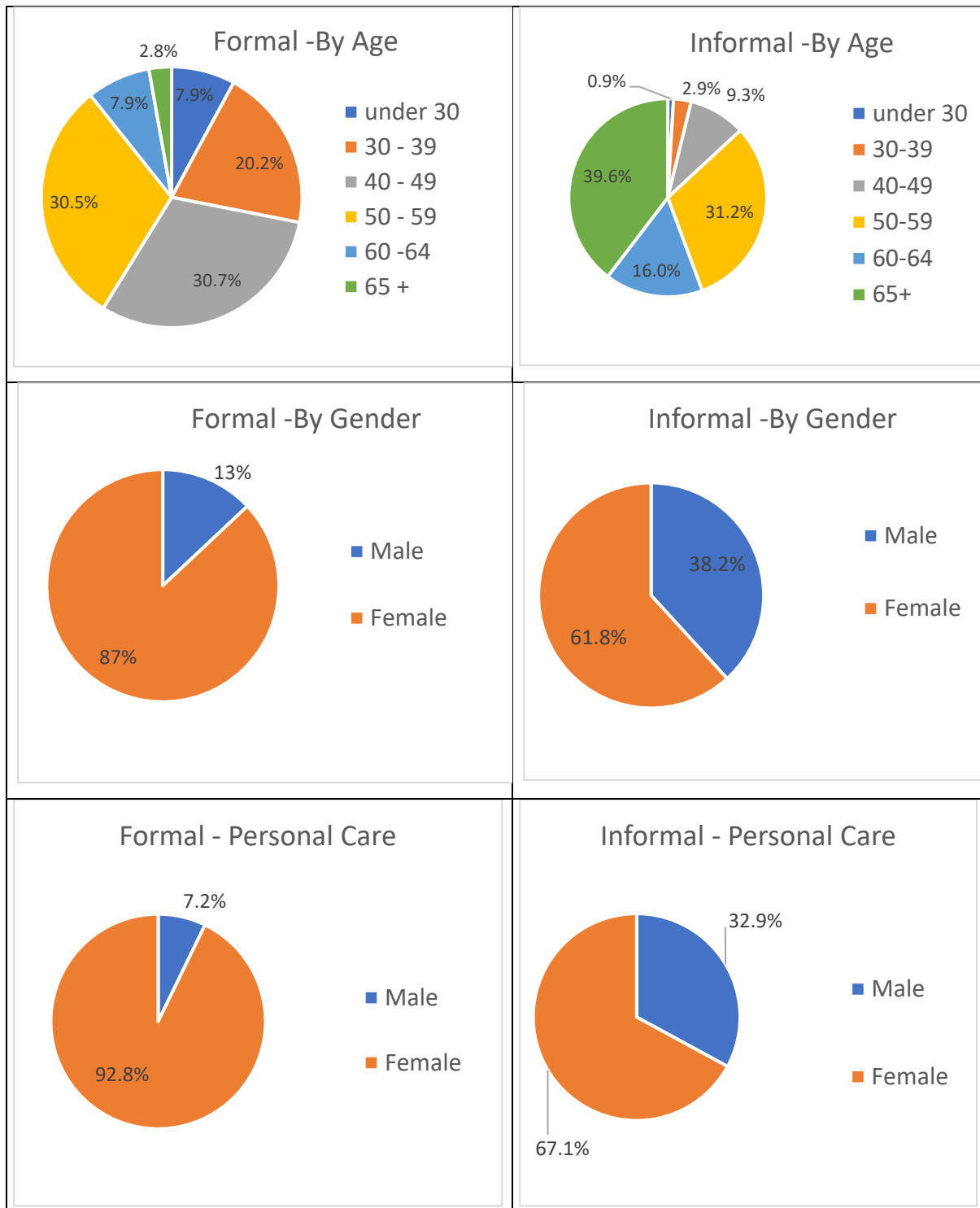
Source: [ISTAT](#) - Labor and wages. All euros amount are in 2019 euros.

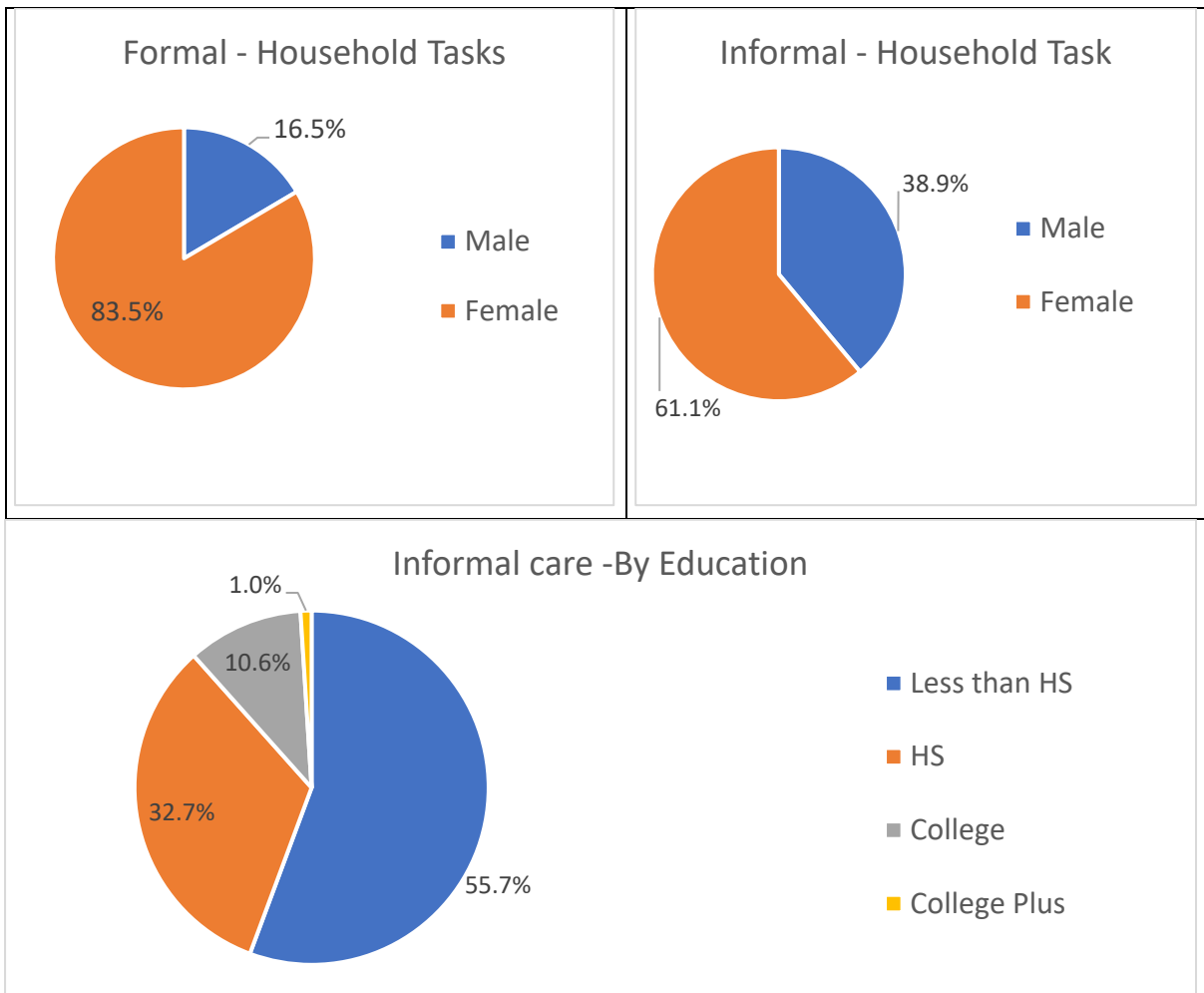
**Table 16: Population Receiving Help, Italy 2015**

	Recipient of Help 65+	Recipient of Help 85+
Any Help	4,160,961	1,230,817
Formal	1,444,410	456,938
Informal	3,485,136	1,088,875
Observation	3,102	265

Source: *SHARE* wave 6. Respondent weights are used for all population estimate calculations. Nursing home residents are excluded. Formal help includes help with personal care, domestic tasks, meals-on-wheels, and other activities, while Informal help include help with personal care, practical household help, and help with paperwork.

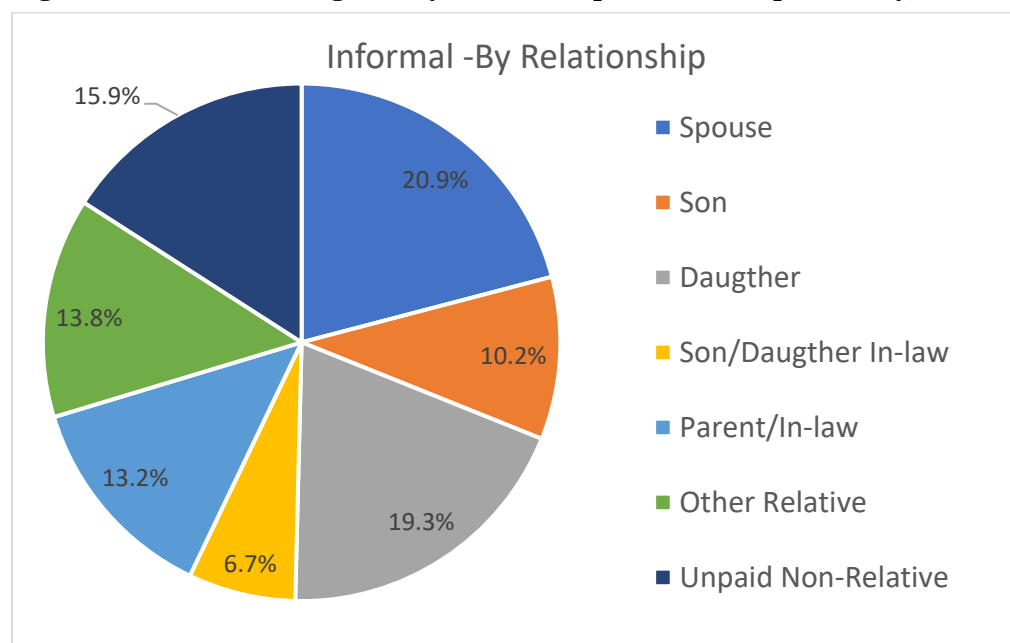
**Figure 11: Demographic composition of Caregivers. Italy, 2015.**





Source: Formal Caregiver data are from Home Worker dataset of INPS. Informal care data comes SHARE w6. For each respondent that have reported to have received help from Spouse or Child we were able to link them (Spouse/Child) to their general information (age, gender, education) provided by the respondent. For the respondents and their partners we classified as less than HS education those individual that have an ISCED 97 value lower than 3, with HS those that have a value between of 3 and 4, while the remain two categories (college/college plus) are for those with a ISCED 97 value of 5 or 6. For the children the education is obtained from the reported level of education and degree achieved by them. Respondent weights are used for all calculations. Nursing home residents are excluded.

**Figure 12: Informal Caregivers by Relationship to Care Recipient. Italy, 2015.**



Source: Data from SHARE w6. Respondent weights are used for all estimate calculations. Nursing home residents are excluded.

## Part III: The Cost of Long-Term Care

**Table 17: Formal care costs, annual, Italy 2015**

	Number of users	Total spending (billion €)
Nursing home	288,000	7.00
Home health services (Formal)	1,444,410	4.63

Notes: Total spending data come from ISTAT System of Health Accounts. In particular, we report for nursing home the spending done in hospital and residential long-term care facilities while we aggregate the other categories in home health agency. We multiply the spending by the proportion of the elderly residential care receiver aged 65 and over (75%). The number of users for HHS is estimated from SHARE w6, excluded the nursing home residents. Respondent weights are used for all population estimate calculations. All euros amount are in 2019 euros.

**Table 18: Valuation of Informal Home Care. Italy.2015.**

	I	II	III
Valuation	11.2	17.31	22.91
Total Hours Informal Help	2.6	2.6	2.6
E(Work)	0.39	0.39	0.39
E(Work)*E(Wage Work) (unconditional expected wage)	4.05		
E(Wage Work)	10.38		
Hours - Helper Working	1.21	1.21	1.21
Hours - Helper Not Working	1.69	1.69	1.69
Home Health Aide Wage		5.43	11

Notes: Column I values predicted working hours at the predicted wage, and non-working hours at zero wage. Column II values the hours of not working informal caregiver at the replacement cost based on the average home health aide wage of 5.43€ computed taking the average minimum wage of professional home care between the lowest category and highest one reported in the national collective bargaining employment contract for “Badanti & Colf”. Column 3 use the average hourly wage for caregiver from [ERI](#). Valuations are done at the helper level, with predicted wages and probabilities of work imputed from SHARE w6 using data for education, age and age square, sex, marital status and children in the household. Valuation and hours are reported in billions and they are in 2019 euros.

**Table 19: Total Costs by Type of Care and Source.**

Care Type	Source	Cost I		Cost II		Cost III	
		€	% GDP	€	% GDP	€	% GDP
Nursing home	Private	2.57	0.15%	2.57	0.15%	2.57	0.15%
	Public	4.43	0.26%	4.43	0.26%	4.43	0.26%
	All	7	0.42%	7	0.42%	7	0.42%
Home health agency	Private	0.34	0.02%	0.34	0.02%	0.34	0.02%
	Public	4.29	0.25%	4.29	0.25%	4.29	0.25%
	All	4.63	0.28%	4.63	0.28%	4.63	0.28%
Informal Care	Private	11.2	0.67%	17.31	1.03%	22.91	1.36%
	Public	8.72	0.52%	8.72	0.52%	8.72	0.52%
Total	Private	14.11	0.84%	20.22	1.20%	25.82	1.53%
	All	22.83	1.36%	28.94	1.72%	34.54	2.05%

Notes: from ISTAT [System of Health Accounts](#) and SHARE w6. The value of the formal and informal care cost is from previous two tables 16-17. Italy's GDP for 2015 was 1683€ billion. All euros amount are in 2019 euros.

Brugiavini, A., Carrino, L., Orso, C. E., & Pasini, G. (2017). *Vulnerability and Long-term Care in Europe: an Economic perspective* London: Palgrave MacMillan.

Carrino, L., Orso, C. E., & Pasini, G. (2018). Demand of long-term care and benefit eligibility across European countries. *Health economics*, 27(8), 1175-1188.