STUDIA DEMOGRAFICZNE

1–2(180–181) 2022

Brief communication

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DOI: 10.33119/SD.2022.1-2.4

Comparison of individual characteristics of LTC residents in various forms of in-patient LTC in Poland

Abstract

The ageing of the Polish population in the face of the decreasing caring potential of families is a challenge for the development of formal long-term care in the coming years. In order to be able to predict trends in the demand for care services better and thus reliably estimate future public expenditure of the sector, it is necessary to analyse the individual characteristics of beneficiaries using various forms of care. The aim of this article is to provide insight into the differences between residents of various forms of in-patient care for older adults and dependent people in Poland. The study has collected unique individual data on residents from private rest homes, public residential homes (in Polish: DPS), and public nursing homes (in Polish: ZOL) throughout Poland. Using statistical analysis, we show that people with smaller social networks and more limited financial resources are more likely to be in public residential homes. At the same time, they stay there longer and more often experience less ADL difficulties.

Introduction

The ageing of the population, as one of the main demographic processes, leads to an increase in the number of people who rely on long-term care. This is a challenge for both families and the state. In Poland, long-term care is provided informally (mainly by the family) or formally (by public or private institutions). In-patient formal long-term care is divided between the health care sector (ZPO nursing and care facilities, ZOL care and treatment facilities, hospices) and the social welfare sector (DPS residential homes) (Knapik, 2020; Więckowska, 2010; World Bank, 2015). The market of private nursing homes has also been dynamically developing since the 1990s (Błędowski & Maciejasz, 2013; Sowa-Kofta, 2018). Currently, studies suggest increased focus on the development of alternative forms of out-patient care (Kubicki et al., 2020) or de-institutionalisation as measures aimed at mitigating the growing burden on public finances while ensuring decent care for dependent people.

The share of dependents covered by publicly funded long-term residential care in Poland is one of the lowest among the European Union countries (European Commission, 2015). The percentage of people aged 65+ receiving institutional care was around 1% (Rodrigues et al., 2012; Leszko, 2015). According to the MRPiPS-05 Report (2020), at the end of 2020, there were approximately 25.5 thousand places in officially registered 24-hour private rest homes, 81 thousand[1] in public residential homes, and less than 34.8 thousand[2] in nursing homes (GUS, 2020). According to MRPiPS-05 (2020), as of December 31, 2020, there were almost 18.2 thousand people in officially registered private facilities, over 75.1 thousand in residential homes (of which over 30.2 thousand in facilities dedicated to older people, somatically or physically ill). However, information about the number of residents of nursing homes is less comparable with other types of facilities, due to a different method of reporting these data by Statistics Poland (data are provided on the number of residents throughout the whole year, not the end of the year), and in total it was almost 59.6 thousand people (excluding the psychiatric profile with 52 thousand).

According to Polsenior 1 (Mossakowska et al., 2012), about 40% of the 65+ Polish population need daily care, but less than 10% receive it from publicly funded institutions (Błędowski, 2012). Results of Polsenior 2 (Błędowski et al., 2021) shows that 55.8% of people aged 60+ expect help permanently or several times a day – 54.1%

[1] Around 34.2 thousand places were in residential homes dedicated to the older people, somatically or physically ill.

[2] Excluding the psychiatric profile of facilities, there were less than 28.8 thousand places.

among females and 58.1% among males, respectively (Błędowski, 2021). In Poland, caring functions are performed mainly by the family (Błędowski, 2021; Golinowska 2010; Kałuża-Kopias & Szweda-Lewandowska, 2018) and the greatest involvement of families in caring is observed in villages (Błędowski, 2021, 2012). Thus, the ageing of the Polish population in the face of the decreasing caring potential of families (associated with a decline in fertility and greater activity of women in the labour market) remains a challenge for the development of formal long-term care in the coming years (Abramowska-Kmon, 2011; Jurek, 2015).

Types of institutions differ both in the amount of beneficiary's contribution and in the cost of providing services (Jurek, 2007). Hence, the income factor as well as other specific characteristics of the residents that may be related to their economic situation seem to be relevant when choosing the form of care. On the one hand, this may involve a moral hazard (where state-subsidised forms of care are used because of being cheaper for recipients but regardless of their health situation) (Jurek, 2008). According to OECD data (2017), people with a lower socio-economic status need to use care services more often. However, formal home-based care in many countries is too expensive for those people, which creates incentives to use in-patient care. On the other hand, current research exposes inequalities in long-term care. Among poorer people, informal or mixed forms dominate (Floridi et al., 2021; Lera et al., 2020; Rodrigues et al., 2017). Health inequalities observed in Poland in various socio-economic groups are not only growing but also much more persistent than in Western European countries (Mackenbach et al., 2007; Sowa, 2011) and translate into an uneven distribution of care needs in the population of older adults. At the same time, it is worth emphasising that due to the shortage of places in publicly financed facilities and their uneven distribution, it is not always possible to match adequately the type of facility to health needs, and the choice of facility is often determined by vacancies (Błędowski, 2020).

The indicators of the use of long-term care cover the entire recipient population (Sowa-Kofta, 2018) without the possibility of distinguishing individual characteristics of the beneficiaries. Analyses on aggregated data prevail, mainly from public institutions, while the private sector, apart from information on the number of nursing homes and places, remains unexplored. This significant deficit makes it impossible to identify the key characteristics of the beneficiaries and thus impairs the ability to estimate better future long-term care demand and expenses in Poland. Certain studies focusing on micro data on residents of various types of facilities for older adults and dependents in Poland have already been carried out, but on a small number of samples, and aimed at examining the diversity of, for example, their health situation (e.g. Kijowska et al., 2020; Mazurek et al., 2015).

The aim of this analysis is to identify the key variables that differentiate the residents of individual LTC facilities using a unique micro-level database of private and public residential and nursing home residents. We searched for answers to the following research questions:

1) Do Poles using various forms of in-patient care differ significantly from each other?
2) Are there any indications that the matching of the form of care to the existing needs could be improved?

The answers to these questions will help analyse the patterns of using various forms of LTC and may be used in the future to assess whether alternative forms of long-term care are possible and whether they will be profitable.

Data and methods

Data on individual LTC residents were collected in the period July 2021-March 2022 using the CAWI, CATI, and CAPI methods. The questionnaire for self-completion[3] was sent to individual long-term care facilities, i.e.: DPSs, ZOLs and private rest homes, i.e., institutions that provide full-time care services.[4] Eight facilities of each type were randomly selected in each of the 16 voivodeships. The selected facilities differed in terms of the size of the town and location. In case of a refusal to participate, further institutions were added. The selected institutions provided information about all their residents. The survey included questions about the socio-demographic characteristics of residents, their health situation and level of dependence, indicators of basic family relationships and how they finance long-term in-patient care. The homes selected for the study, broken down by voivodship and type of facility, along with contact details, were identified based on publicly available registers of LTC in-patient facilities[5] with supplementary data obtained from the websites of individual

[3] The questionnaire contained questions about all residents, hence the decision to participate in the study was made by the management in charge of individual institutions who delegated employees to complete the data.

[4] To ensure the comparability of data between different types of in-patient LTC and the assessment of the impact of demographic ageing on the use of LTC, general-purpose facilities were used, i.e., mainly DPSs for older adults, chronically somatically ill and physically disabled, excluding DPSs for chronically ill, mentally ill, intellectually disabled adults and children and adolescents, people addicted to alcohol. In the case of the healthcare sector, palliative and hospice care were excluded. Similar exclusions were not possible for the private sector, largely due to the diversity of care services provided within the same facility and/or because the identification of the type of facility was not possible before the start of the study.

[5] In terms of the social welfare sector and the private sector, these were, respectively: *Registers of Social Welfare Homes* and *Registers of institutions providing round-the-clock care for disabled, chronically ill, or older adults, including those operated on the basis of regulations on economic activity* as of May 2021,

facilities. First, questionnaires with a description of the study were sent by e-mail, then individual institutions were contacted by phone. In the case of the social welfare and healthcare sectors (DPSs and ZOLs), the CAWI method was used. However, questionnaires were usually returned only after a follow-up telephone contact. In the case of the private sector, only some of the questionnaires were completed using the CAWI method. In other cases, the data were collected using the CATI method, and in several cases – CAPI. In this way, a unique nationwide database was built containing almost 3.8 thousand records of the users of in-patient LTC (private: N = 745; social welfare sector: N = 2258; healthcare sector: N = 872).[6] In the case of private rest homes and public residential homes (DPSs), it was possible to collect a sample from each of the voivodships but no data were obtained for public nursing homes in the Świętokrzyskie and Śląskie voivodships.

Our study includes a statistical analysis of the characteristics of residents by the type of care facility (tests of proportions, t-tests on equality of means, Pearson's chi-squared test for independent variables). All data were weighted according to the share of different care facilities in a specific voivodeship. The weights were calculated by taking into account the number of patients in each voivodship by the type of LTC facility.

Results and discussion

Our sample included three types of LTC facilities all over Poland. The distribution of the sample according to the location of individual LTC facilities is presented in Table 1. In the case of private nursing homes, the distribution of facilities by location seemed to be the most even. The greatest number of private rest homes' residents live in facilities located in villages (32%), small and large cities (26% and 27%). In case of DPSs, over 41% of their residents stayed in homes located in large cities (> 100,000 inhabitants) and about 31% in villages. On the other hand, about 78% of ZOL patients in our sample were in facilities located in small towns with less than 20,000 inhabitants. In terms of the size of the place of origin of the residents, there are similarities between the residents of private rest homes and those of the DPSs (Table 2). In both cases, the largest number of people come from big cities

made available on websites of individual Voivodship Offices; in the scope of the healthcare sector, the National Health Fund's guide on concluded contracts with service providers was used (https://aplikacje.nfz.gov.pl/umowy/Provider/Search) involving active service providers at the end of November 2021.

[6] For most questions, the number of missing observations was below 5%, and the highest number of missing observations was for education (20%) and contact person (13%). In the case of private funds and frequency of visits it was almost 10% of all the observations.

with more than 100,000 inhabitants (in private rest homes: 38.5% and in the DPSs: 40.9%), while in ZOLs the largest share of people comes from rural areas (45.5%).

Table 1. Location of LTC facilities (sample, weighted data)

	Private rest homes	Public residential homes (DPSs)	Public nursing homes (ZOLs)
Village (%)	32.1	30.9	1.4
Town (less than 20k residents) (%)	26.1	15.9	78.0
Town (20k–100k residents) (%)	14.6	12.0	7.6
Town (more than 100k residents) (%)	27.2	41.2	13.1

Note: Differences in locations between individual long-term care facilities are statistically significant, at the level of 0.01.

Source: own calculations using the data collected in 2021–2022 database of residents of long-term care facilities.

Statistical analysis of the collected data shows several dependencies in terms of the characteristics of the residents in different long-term care institutions. Table 2 presents socio-demographic characteristics of the residents. In all the types of care facilities there are more women than men. This is explained by the feminisation of old age, as well as the fact that women, living longer, more often live up to the age when they need help. We observe the most even shares (about 53% females) in DPSs, but the residents there are on average the youngest (the average age being 81 in private rest homes, 79 in ZOLs and 74 in DPSs).

Table 2. Socio-demographic characteristics of residents by the type of long-term care facility (sample, weighted data)

	Private rest homes	Public residential homes	Public nursing homes
Age (mean)	82.9	74.74	77.49
Time spent in the facility (mean)	1.6	5.11	1.19
Females (%)	73.8	53.85	65.93
Primary education (%)	24.26	47.50	61.30
Secondary education (%)	55.01	46.86	32.18
Tertiary education (%)	20.73	5.64	6.50
Place of origin:			
Village	22.30	28.32	45.52
Town (less than 20k residents) (%)	26.13	18.70	30.74
Town (20k-100k residents) (%)	13.04	12.10	11.19
Town (more than 100k residents) (%)	38.53	40.87	12.55

Note: Differences in age, time spent in the facility, gender, education, and place of origin between individual types of long-term care facilities are statistically significant at the level of 0.05.

Source: own calculations using the data collected in 2021–2022 database of residents of long-term care facilities.

Table 3. Payments by the type of long-term care facility (sample, weighted data in PLN)

	Private rest homes	Public residential homes	Public nursing homes
Mean monthly payment	3467.72	4406.60	4341.79
Mean monthly private funds	3437.48	1350.36	1359.88
Mean monthly payment by region			
Western	4057.75	4813.69	4145.30
Eastern	3139.75	4132.70	4563.04
Central	3411.38	4269.82	3920.03
Northern	3346.91	4611.27	4736.30
Southern	3583.54	3984.25	4222.49

Note: Differences in mean monthly payments and monthly private funds (only differences between ZOLs and DPSs are statistically insignificant) between individual types of long-term care facilities are statistically significant at the level of 0.05. The differences between regions are also statistically significant at the level of 0.05.

Source: own calculations using the data collected in 2021–2022 database of residents of long-term care facilities.

Residents of DPSs are, on average, the youngest, but their average stay in the institution is the longest (of about 5 years), while in private rest homes it is less than two years and in ZOLs less than a year and a half (third quartile is equal to 7 years in DPSs and only 2 years in private rest homes). In the case of ZOLs, this may be associated with the specific purpose of such facilities where people are admitted from their hospital stay and after some time they either return home or are transferred to other facilities. However, the differences between private rest homes and DPSs are noticeable. This may be due to the lack of long-term financing of a stay in a private rest home. It is also possible that because of lower fees charged by DPSs, people move there earlier than necessary. As shown in Table 3, the costs for residents and their families in private rest homes are more than twice as high as in state-subsidised institutions. At the same time, the average unit cost[7] is also much higher for DPSs compared to private rest homes.

Next, we divided the voivodships in Poland into five regions, Northern, Eastern, Western, Southern, and Central[8] to look at the geographic differentiation of payments.

[7] The unit costs were quoted by LTC facilities excluding ZOLs. ZOLs indicated only private costs, while the average unit costs covered by the NFZ for ZOL patients in a given voivodeship were obtained from the NFZ and inserted for each person in a given ZOL. Summed up with private cost, they gave a unit cost.

[8] Western: Zachodniopomorskie, Wielkopolskie, Lubuskie, Opolskie, Dolnośląskie; Eastern: Podlaskie, Podkarpackie, Lubelskie; Central: Świętokrzyskie, Mazowieckie, Łódzkie; Northern: Warmińsko-Mazurskie, Pomorskie, Kujawsko-Pomorskie; Southern: Śląskie, Małopolskie.

Results broken down by regions show that the cost of a stay (in total) as well as the level of payments by the resident and their family (private funds) are the highest in the western part and the lowest in the eastern part of Poland. This pattern applies to both public and private LTC in-patient facilities. These results indicate the existence of inequalities in access to in-patient LTC services depending on the location. However, it might be caused by differentiation of LTC staff salaries between voivodeships.

The financial status of residents, approximated by education, is directly related to the costs and ability of financing long-term care. There are significant differences in the education of residents staying in different types of long-term care facilities. Residents of private rest homes have definitely more often a higher level of education than residents of DPSs or ZOLs. In the studied private rest homes, 25% of residents have a university degree, while in DPSs and ZOLs the share is 5.6% and 6.5%, respectively (Table 2). It seems intuitive that more affluent and better educated people stay in private nursing homes. Perhaps the fact that the residents of private rest homes are the oldest and have the shortest duration of stay in care homes is also due to the fact that they are the best educated and stay in a good physical condition and maintain their functional ability for a long time.

Looking at the family situation of the residents, the differences are also noticeable (Table 4). Private rest homes and ZOL residents have more often living children or spouses than DPS residents. In most cases, children are the contact person regardless of the type of LTC facility. In private rest homes, this the case for 77% of all the residents; ZOLs have a similar share of71%, and for DPS the percentage is lower and amounts to 47%. In the case of DPSs, the contact persons are much more often siblings or other relatives or unrelated persons. In this type of facility, there is also the highest percentage of residents who do not have any contact person (4% versus 0.6% in private rest homes and 0.7% in ZOLs). Also, there are clear differences in the frequency of visits between private rest homes and other facilities where visits are much less frequent (in DPSs 30% of residents are not visited at all, and the respective figures for ZOLs and private rest homes are 23% and 6%).[9] The obtained results show that people living in DPSs often do not have a family, are lonely, and therefore, get to nursing homes earlier and stay there for longer. The question arises whether their stay in a DPS is necessary, indeed. Was it not for the lack of a family, would they require help with daily living activities?

[9] The distribution of the variable frequency of visits could be partially determined by the fact of collecting data during the COVID-19 pandemic, which forced some institutions to impose restrictions on the number of visits.

Table 4. Social characteristics of residents by the type of long-term care facility (sample, weighted data)

	Private rest homes	Public residential homes	Public nursing homes
Having a living spouse (%)	11.29	6.53	15.94
Having a living child (%)	86.04	49.57	75.42
Frequency of visits by family members (%):			
Never	5.68	29.71	22.62
Once a year	6.79	11.66	7.85
A few times a year	20.87	29.55	20.11
Once or twice a month	41.14	22.58	27.94
Once a week	16.33	4.63	16.99
A few times a week	7.51	1.49	4.24
Every day	1.66	0.38	0.25
Contact person (%):			
Child	76.50	46.69	70.58
Spouse/partner	3.92	2.79	4.58
Siblings	6.74	24.76	8.63
Grandchildren	4.68	7.67	3.99
Niece/nephew	4.26	9.11	3.00
Other relatives	4.12	13.1	8.09
Other non-relatives	2.53	6.42	4.16
Nobody	0.6	4.25	0.68

Note: Differences in having a spouse, having a child, frequency of visits, and contact person between individual types of long-term care facilities are statistically significant at the level of 0.05. The exceptions are: for grandchildren the differences are insignificant, and for a spouse, niece, and nobody the differences between ZOLs and private rest homes are insignificant.

Source: own calculations using the data collected in 2021–2022 database of residents of long-term care facilities.

The average number of ADL difficulties among DPS residents was significantly lower (2.85) than in private rest homes and ZOLs (4.16 and 4.44, respectively) (Table 5). Slightly less than 30% of the beneficiaries had no or only one limitation related to the performance of everyday activities. The differences are visible depending on the type of institution. In DPSs, almost 40% residents have zero or one ADL limitation, while in private rest homes it is true of 17% of all the residents, and in ZOLs such patients constitute only 13% of all the residents. In almost 94% of cases, where only one ADL difficulty was observed, it was assistance in bathing/washing. This often resulted from the standard of care in a given facility as in private rest homes nearly all the residents receive assistance with bathing. Such a high percentage of people without difficulties in activities in DPSs may be associated with a worse mental health condition or the lack of family care opportunities.

Table 5. ADL limitations of residents by the type of long-term care facility (sample, weighted data)

	Private rest homes	Public residential homes	Public nursing homes
ADL limitation (%):			
Bathing	91.83	78.17	88.11
Dressing	79.60	56.14	82.63
Toileting	75.56	43.89	65.53
Transferring	69.48	44.43	81.13
Feeding	40.47	20.64	50.20
Continence	59.91	42.22	76.69
Number ADL limitations (mean)	4.16	2.85	4.44

Note: Differences in ADL between individual types of long-term care facilities are statistically significant at the level of 0.05. The differences in bathing between ZOLs and private rest homes is significant at the level of 0.1.

Source: own calculations using the data collected in 2021–2022 database of residents of long-term care facilities.

Our results are consistent with the literature (Harris-Kojetin et al., 2016; Spillman et al., 2002; Wunderlich & Kohler, 2001), showing that people using institutional forms of LTC are on average older people, being women and suffering from a higher number of ADL limitations. However, the above studies distinguished the characteristics of long-term care users only between institutional care and community or home care. Due to the fact that our study distinguished three particular sectors of institutional long-term care (health, social, and private), as well as the organisational diversity of long-term care forms in different countries, we are not able to compare accurately our results with other research.

Conclusion

The obtained results indicate significant differences between residents in various forms of long-term care. Residents of ZOLs require the most help and such help must be provided by professional staff, so even though the residents may have families who are in contact with them, they are not able to provide this help. However, there are also differences between private and public residential homes. Residents of private rest homes are older, better educated, with more difficulties in ADL and more often have families (children, partners) visiting them. On the other hand, DPS residents are younger on average, they more often have no family or relatives to visit them, they cope better with everyday activities, and, at the same time, benefit from long-term care for longer.

It is worth noting that both income inequalities (measured by education) and inequalities in social capital differentiate the choice of an institution. People with smaller social networks and more-limited financial resources are more likely to be in public residential homes (DPSs). At the same time, they stay there for longer and more often have less ADL difficulties. The characteristics of DPS beneficiaries, together with the high unit costs of staying in a DPS, may be the basis for considering other out-patient forms of long-term care. Single people who do not have family support or do not have sufficient financial resources could live, for example, in warden-controlled housing, where they can live in their apartments but still benefit from assistance, security, and shared space/facilities. This and other forms of long-term care could turn out to be more beneficial for both the recipients and the state. However, when developing proposals for alternative forms of care, the preferences of LTC beneficiaries themselves and their families should be taken into account and verified, e.g. by using the Consumer Choice Index-6 Dimension (CCI-6D) proposed by Milte at al. (2019).

The data collected and analyses made during the project may constitute a starting point for further analysis comparing the characteristics of residents of in-patient LTC forms with people who receive daily care informally. Such comparisons will allow estimating how many people using institutional care actually need it, and for what part of them home care, community care or other alternative forms of institutional care could be provided, since most older people prefer ageing at home (Canadian Institute for Health Information, 2020). It will contribute to the optimisation of the structure of LTC by matching better the forms of assistance to the needs and the share of public funding in total expenditure. A unique feature of the study is the acquisition of individual data, with a particular emphasis on social inequalities, which will allow better forecasting of trends in the development of long-term care and is particularly important in the context of de-institutionalisation of long-term care, a question that is increasingly seen as a potential remedy not only to increasing public LTC spending but also to the social isolation of residents.

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