


Socioeconomic inequalities at the place of death: evidence for Europe based on SHARE data¹


Desigualdades socioeconômicas no local da morte: evidência para a Europa com base nos dados do SHARE

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Abstract

The place of death is considered an indicator of the quality of the end of life and can have consequences for the organization of the care received in the last stage of life. Many factors can influence the place of death of individuals, including socioeconomic factors. This research aims to explore the inequalities related to the place of death for the European population aged over 50 years. The data for this analysis were collected from the Survey of Health, Ageing and Retirement in Europe. Place of death (home vs. other) was chosen as the outcome variable and the following variables were selected to measure individuals' socioeconomic status: equivalent individual income; level of education; and inheritance at the time of death. A logistic statistical model was adopted and the odds-ratio for death at home vs. other were described and interpreted. Around 34.3% of deaths in Europe occurred at home, and the remaining 65.7% occurred in an institution, usually a hospital. Bulgaria (73.5%) and Romania (68.9%) showed the most deaths at home. On the other hand, the countries least likely to have deaths at home are Cyprus (10.9%) and Finland (15.4%). Individuals with lower incomes were more likely to die at home than those with higher incomes, and education failed to determine the place of death. Thus, this study found socioeconomic inequalities associated with income in the chances of dying at home.

Keywords: Place of Death, social inequalities, SHARE survey; Data Analysis.

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Resumo

O local de morte é considerado como um indicador de qualidade do fim de vida e pode ter consequências para a organização dos cuidados recebidos na última etapa da vida. Vários são os fatores que podem influenciar no local da morte de um indivíduo, dentre eles destacamos os fatores socioeconômicos. O objetivo da investigação é explorar a existência de desigualdades relacionadas com o local de morte para a população europeia com mais de 50 anos. Os dados para esta análise são provenientes do *Survey of Health, Ageing and Retirement in Europe* (SHARE). A variável de *outcome* é o local da morte, agregada em casa *vs* outro local; e para medir o estrato socioeconômico (ESS) dos indivíduos usamos as variáveis: rendimento individual equivalente; nível de educação; e existência de herança no momento da morte. O modelo estatístico adotado é o modelo logístico, com a apresentação e interpretação do parâmetro *Odds-Ratio* (OR), ou razões de possibilidades, para a morte em casa *vs* outros locais. Cerca de 34,3% dos óbitos na Europa ocorreram no domicílio, e os 65,7% restantes ocorreram numa instituição, na sua maioria no hospital. Os dois países em que é mais frequente morrer em casa são a Bulgária (73,5%) e a Romênia (68,9%). No polo oposto, os países onde é menos provável morrer no domicílio são o Chipre (10,9%) e a Finlândia (15,4%). Indivíduos de menores rendimentos apresentam mais chances de morrer em casa em relação aos de maiores rendimentos, e a educação não se revelou uma determinante do local da morte. Concluimos, assim, pela existência de desigualdades socioeconômicas associadas ao rendimento nas chances de falecer no domicílio. **Palavras-chave:** Local da Morte; Desigualdades sociais; Inquérito SHARE; Análise de Dados.

Introduction

Death is one of the few certainties in life, but the place where death occurs is subject to some uncertainty. The place of death is not neutral concerning the goal of having a “good death” or the well-being with which individuals spend their final days of life (Kinoshita et al., 2015). One can die in different places (at home, in the hospital, in a palliative care unit, in a care home, etc.) and circumstances (accident, prolonged or sudden illness, etc.), which can, subjectively or objectively, influence the quality of life in its final stage. On the one hand, dying in the preferred place is valued by the patient, as it gives them a sense of safety and control over the circumstances of their death, thus preserving all their dignity (Zaman et al., 2021); on the other hand, the place of death is strongly associated with the composition and intensity of the care that the individual receives, which influences their quality of life (Mezey et al., 2002; Tang; Chen, 2012). Some authors even suggest that where one dies can be a good indicator of a society’s level of human development and public health (Mpinga et al., 2006; Wilson et al., 2009). Although the vast majority of individuals express a strong preference for dying at home (Beccaro et al., 2006; López-Valcárcel; Pinilla; Barber, 2020; Yamout et al., 2021), the place where death actually occurs does not always correspond to this preference, since in developed countries the vast majority of deaths occur in an institution, mainly in the hospital (López-Valcárcel; Pinilla; Barber, 2020; Sallnow et al., 2022; Tang; Chen, 2012). In general, death in institutions corresponds to more than 50% of cases, with a clear predominance of the hospital (Pivodic et al., 2016; Sallnow et al., 2022). Multiple factors can combine to determine the place where an individual dies, including access to and level of trust in health and social support services; the type and duration of the disease; contextual and social factors; and some individual characteristics, such as age, gender, place of residence and, most importantly, socioeconomic status (SES) (Houttekier et al., 2009; Sallnow et al., 2022; Tang;

Chen, 2012; Tang; McCorkle, 2001). The existing scientific evidence on the association between place of death and socioeconomic status has produced contradictory results. A meta-analysis showed that in developed countries, individuals living in economically disadvantaged areas are more likely to die in the hospital and that the level of education is not a determinant of place of death when comparing home *vs* hospital (Davies et al., 2019; Neergaard et al., 2019). Cabañero-Martínez et al. (2019) showed that the probability of death occurring in the hospital (*vs* home) was inversely proportional to the level of wealth of the area in which the individual lived, with death in the hospital being more likely in more economically depressed areas. Another study on the effect of income and education on the place of death, this time applied to the Chinese population, obtained results in the opposite direction, i.e., low education and income increased the probability of death at home (Cai; Zhao; Coyte, 2017). On the other hand, Cohen et al. (2010) found a positive association between a high level of education and the probability of dying at home. In summary, the vast majority of studies point to an association between the place of death and the socioeconomic position of individuals, not always in the same direction. In developed countries, death at home is strongly associated with individuals from more privileged social strata.

Death systems are not benign, as they can replicate, reinforce, and perpetuate discrimination and inequities that exist in other systems (Sallnow et al., 2022). This article aims to assess the influence of socioeconomic inequalities on the place of death for the European population aged 50 and over who died from 2005 to 2021. The mechanisms by which socioeconomic position can influence the place of death are diverse. Individuals and families with higher SSE 1) are more likely to plan the place of death, as communication between physicians, the patient, and the family may be more efficient, which leads to an earlier known and accepted prognosis of death; 2) may be more able to navigate the system (López-Valcárcel; Pinilla; Barber, 2020), giving them greater access to institutions in the

health and social systems that support the last days of life, thereby increasing the likelihood of dying in an institution; 3) they are more likely to hire professional caregivers to support all their care needs (Costa et al., 2016); 4) those who prefer to die at home can adapt their home to their end-of-life needs; 5) are more likely to receive palliative care (Davies et al., 2019). Data for this analysis come from the Survey of Health, Ageing and Retirement in Europe (SHARE), which has recorded approximately 17,000 deaths in Europe, from 2005 to 2021. The outcome variable is the place of death, aggregated as home *vs* other locations. We use three variables to measure the SES of individuals, namely: 1) equivalent individual income, 2) level of education, and 3) existence of inheritance at the time of death. The statistical model adopted is the logistic one, presenting and interpreting the OR parameter for death at home *vs* other locations. The main conclusions to be drawn from this article are that death at home is associated with individuals with lower incomes, and the level of education is not a determinant of the place of death. The following section of the article presents the material and methods, followed by the detailed presentation of the results immediately before the discussion section, which concludes the article.

Material and Methods

Data Source

This study uses data extracted from SHARE, defining as the target population individuals aged 50 or over who, at the time of the interview, had their regular residence in a country covered by the SHARE project: 28 European countries plus Israel (Börsch-Supan, 2022). There are currently eight regular waves: the first referring to 2004 and the most recent reflecting the reality of 2019/20. Two extraordinary waves were also collected to learn about different behaviors during the COVID-19 pandemic. Overall, the SHARE database contains information on more than 123,000 individuals aged 50 or over in the demographic, economic, and social dimensions, family structure, health status, and

use of healthcare of individuals and their respective households. Although there are differences between countries, the most common sampling methodology is stratified multi-stage random sampling (Bergmann et al., 2019). All procedures related to data collection and provision to researchers (sampling techniques, sample selection, questionnaire construction, cultural adaptation, interviewer training, interviewing, data storage, data coherence analysis, data provision, etc.) are developed by multidisciplinary, professional and highly experienced teams, which attests to the high quality of data in the context of SHARE.

In this study, we used information and variables of various natures obtained in multiple waves and from multiple modules. However, the “End-of-life interviews” module is the one from which most variables are taken and is the most relevant for this article. Designated in the context of SHARE as the XT module, its main objective is to characterize individuals’ end-of-life experiences in several domains, especially the circumstances of death, the care received in the last year—whether health-related or otherwise—health status, frailty level, the existence of home support, information on inheritances, etc. The database contains information on approximately 17,000 deaths from the 2005-2021 time frame. However, in the multivariate context, the results are based on a sample of roughly 10,000 observations due to missing values in some critical variables. It is also important to note that data from the XT module reveal that approximately 72% of the questionnaire respondents are the husband/wife or son/daughter of the deceased and that approximately 85% of them had contact with the deceased either daily (71%) or several times a week (14%).

Variables

The outcome variable in this study is the place of death. Initially, and as recorded in the database, it is a nominal variable with six categories, each describing a possible place of death: home, hospital, long-term care unit, nursing home, palliative care unit, or other location. However, given the objectives of this article, we constructed a binary variable

(*death_home*), which is worth one if the death occurred at the individual’s home and 0 otherwise, i.e., we are contrasting death at home *vs* death in an institution. Regarding the explanatory variables for the occurrence of death at home, they can be grouped into several categories related to (1) individual factors (age, sex, socioeconomic status, place of residence, and health status in the last year); (2) the disease (duration of the disease, type of disease, level of dependence it causes); (3) the existence of support and the possibility of receiving help, including social support, both formal and informal (living with relatives, number of children, marital status, extended family support, home health care) (Tang; Chen, 2012).

The individual’s SES is measured by combining three variables: individual equivalent income (*income*), absence of inheritance, and educational level. The XT module does not collect information on individual income. Thus, the individual’s household income is obtained in the last wave in which the individual participated as a respondent and corresponds to the household’s income through all possible income sources. By combining income with the number of residents in the household, we construct the individual equivalent income. The dummy variables referring to the income quintiles are built from this individual equivalent income. The absence of inheritance (*no_inheritance*) is a binary variable equal to one if the individual does not leave any inheritance and 0 otherwise. It is considered that there is no inheritance when the individual did not own, at the time of death, any of the following goods and/or assets: house, some type of business (including land or property), some other kind of movable property (cars), some sort of asset (such as cash, bonds or securities), jewelry and/or antiques.

The education level was also obtained in the last wave, during which the individual participated while alive. It is measured through 3 binary variables: the first (*low education*) is worth one if the individual has primary education or less, and 0 otherwise; the second (*medium education*) is worth one if the individual has secondary education (12 years) or less, and 0 otherwise; and, finally, a third variable

measures high education (*high_education*) and is worth one if the individual has university education, and 0 otherwise.

The SHARE database also contains information on variables that will be used as control variables. Among the individual factors, *age* represents the individual's age at the time of death; the individual's gender is measured by a binary variable (*male*) equal to one if the individual is male and 0 otherwise. To measure place of residence, we used three binary variables: *resides in a large city*, *resides in a medium-sized city*, and *resides in a rural area*.

Regarding disease-related factors that may influence the place of death, the SHARE database has the following variables: 1) duration of the disease, measured from a binary variable (*long-term disease*) that is equal to one if the individual was sick for 1 year or more before death, and 0 otherwise; 2) disease as the leading cause of death, with three different types of disease having been identified and incorporated into the analysis through three binary variables: *death from cancer*, *death from thrombosis*, and *death from heart attack*. To measure the individual's level of dependence during the last year of life, we used a variable (*N_ADLS*) to identify the number of activities of daily living for which the individual was not autonomous, requiring help to perform them. Six activities are considered: getting dressed and putting on shoes, walking across a room, taking a shower, eating, lying down or getting up, and using the bathroom.

Regarding the variables related to the existence of support and the possibility of help with daily needs, we included the following variable: *married*, which is a binary variable to identify whether the individual was married at the time of death, the number of children alive at the time of death (*N_children*), and the use of *home care*, a binary variable that indicates whether the individual needed and, if so, whether they received home care in the last year of life. In addition to the variables mentioned above, we included the number of chronic diseases the individual declared having

in the last interview (*N_CD*) and binary variables to control for the year the death occurred.

Table 1, in the Results section, presents the complete list of variables and the mean's respective mean and confidence interval.

Methods

The data were analyzed based on univariate and multivariate statistical methods. We used comparison tests of proportions for large samples to compare the proportion of deaths at home with other binary variables. We used Chi-square tests to compare the dependent variable with categorical independent variables (more than two categories).

From the perspective of multivariate analysis, given the binary nature of the dependent variable, we used the specification and estimation of logistic regression models to estimate the association between the probability of death occurring at home and the set of defined variables (Cameron; Trivedi, 2005). Regarding the results, in this study, we chose to use graphs to present the odds ratios (OR) and their respective 95% confidence intervals. OR is a measure of association between a dependent and an independent variable, defined as the ratio between the chance of an event in one group (independent variable) and the chance of it occurring in another group (dependent variable). In the case of our model, an OR greater than one means that the chances of death at home for the group under analysis are greater than the chances of death at home for the base group (the group excluded from the regression). Conversely, an OR lower than one means that the odds of dying at home for the group under analysis are lower than that for the base group.

All statistical analyses had a confidence level of 95%, and the data management and statistical analysis process were developed using STATA v16.0.

Results

Table 1 presents descriptive statistics that characterize the sample in the variables relevant to the analysis.

Table 1 – Control variables

Factor	Variable	Overall Mean	Confidence Interval
Individual factors	Equivalent income	€1,912.00	[€1,720 – €2,014]
	No inheritance	0.688	[0.68 – 0.69]
	Low_education	0.41	[0.40 – 0.42]
	Medium_education	0.47	[0.46 – 0.48]
	High_education	0.12	[0.11 – 0.13]
	Resides in a large city	0.27	[0.26 – 0.28]
	Resides in a medium-sized city	0.42	[0.41 – 0.43]
	Resides in a rural area	0.31	[0.30 – 0.32]
	Age	79.2	[79.1 – 79.4]
	Male	0.54	[0.53 – 0.55]
Availability of support and possibility of assistance	Married	0.55	[0.54 – 0.56]
	Home care	0.38	[0.37 – 0.39]
	N_children	2.16	[2.13 – 2.18]
Disease-related factors	N_ADLs	2.57	[2.54 – 2.62]
	Death from cancer	0.27	[0.26 – 0.28]
	Death from thrombosis	0.12	[0.11 – 0.12]
	Death from heart attack	0.14	[0.13 – 0.14]
	Long-term disease	0.42	[0.41 – 0.43]
Other control factors	N_CD	2.62	[2.59 – 2.64]
	Year of death [2004 – 2008]	0.115	[0.11 – 0.12]
	Year of death [2009 – 2014]	0.362	[0.35 – 0.37]
	Year of death [2015 – 2021]	0.523	[0.51 – 0.53]

Source: Prepared by the authors, based on data collected in SHARE

Caption: N_ADLs: number of activities of daily living for which the individual was not autonomous; N_CD: number of chronic diseases in the last interview.

Approximately 54% of deaths occurred in male individuals, and the majority were married at the time of death. The average age observed was approximately 79 years, and 31% lived in rural areas in Europe. Regarding the variables that reflect SES, while the average income was €1,912.00, approximately 69% of the target population revealed that they did not leave any property or assets as inheritance. Approximately 12% of the deceased had higher education. The results also show that 38% received home care during the last year of life and had approximately two children still alive. The average number of daily activities in which the individual was not autonomous was 2.57, and the average number of chronic diseases was 2.62. Regarding the cause of death, 27% of individuals had cancer as the leading cause, and 42% had been ill for a year or more. Most deaths occurred between 2015 and 2021.

Regarding the outcome variable of this study, death at home, globally around 34.3% [0.336 - 0.349] of deaths in Europe occurred at home, and the remaining 65.7% occurred in an institution, mainly in a hospital. An analysis by country reveals that the two countries where it is most common to die at home are Bulgaria (73.5%) and Romania (68.9%). On the other hand, the countries where it is least likely to die at home are Cyprus (10.9%) and Finland (15.4%). Figure 1 shows the distribution of deaths at home by country.

Figure 2 presents the proportion of deaths at home according to demographic and socioeconomic characteristics.

The first two graphs in the panel (income and presence of inheritance) reveal a clear trend: the poorest are more likely to die at home. Hypothesis tests reveal statistically significant differences ($p < 0.01$) between the variable death at home *vs* income and death at home *vs* presence of inheritance. It should be noted that individuals in the poorest 20% class have a probability of dying at home of 0.43 [0.41 - 0.45], while for the wealthiest 20%, this probability decreases to 0.33 [0.32 - 0.35]. In a similar trend, those who do not leave an inheritance are more likely to die at home (35%) compared with those who do (34%). The difference in proportions is small but

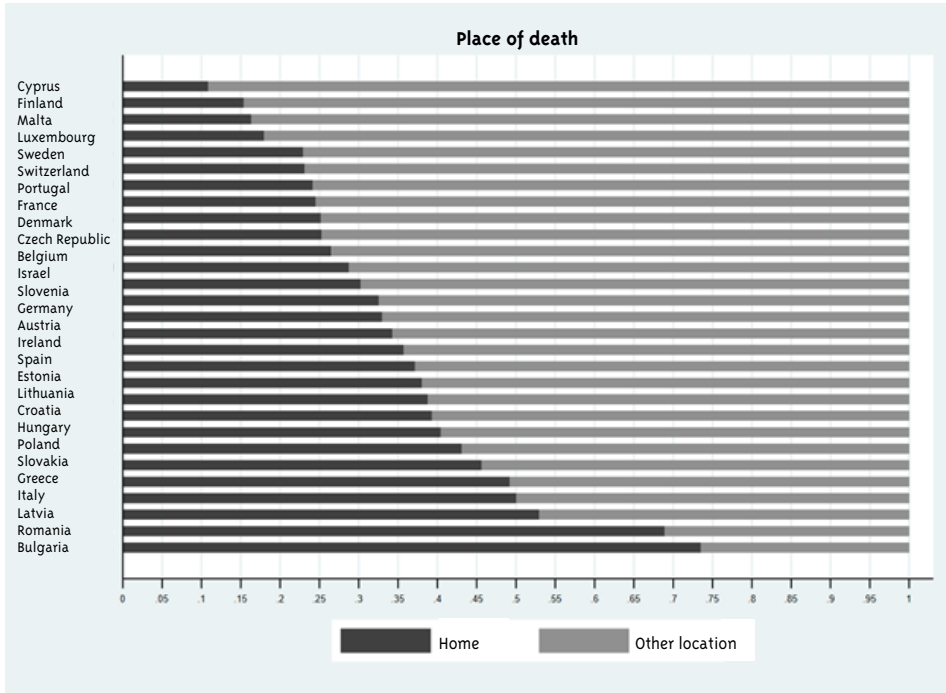
statistically significant. Regarding the association between education levels and death at home, also here, the data show a negative association between education and death at home, i.e., less education implies a greater probability of dying at home ($p\text{-val} < 0.01$). The graph analysis shows that this trend only exists for individuals with the lowest educational level, compared with the other two levels of education.

The graphs in the lower panel of Figure 2 reveal that other factors appear to influence death at home, such as age (negative association), place of residence (higher proportion of deaths at home for those living in rural areas), and marital status (married individuals have a higher proportion of deaths at home than unmarried individuals).

Figure 3 presents the results of the multivariate logistic model in the form of OR for the variable death at home, compared with other locations associated with the variables included in the regression. In addition to the control variables shown on the ordinate axis of the graph, we included variables in the logistic regression to control fixed effects associated with the year of death.

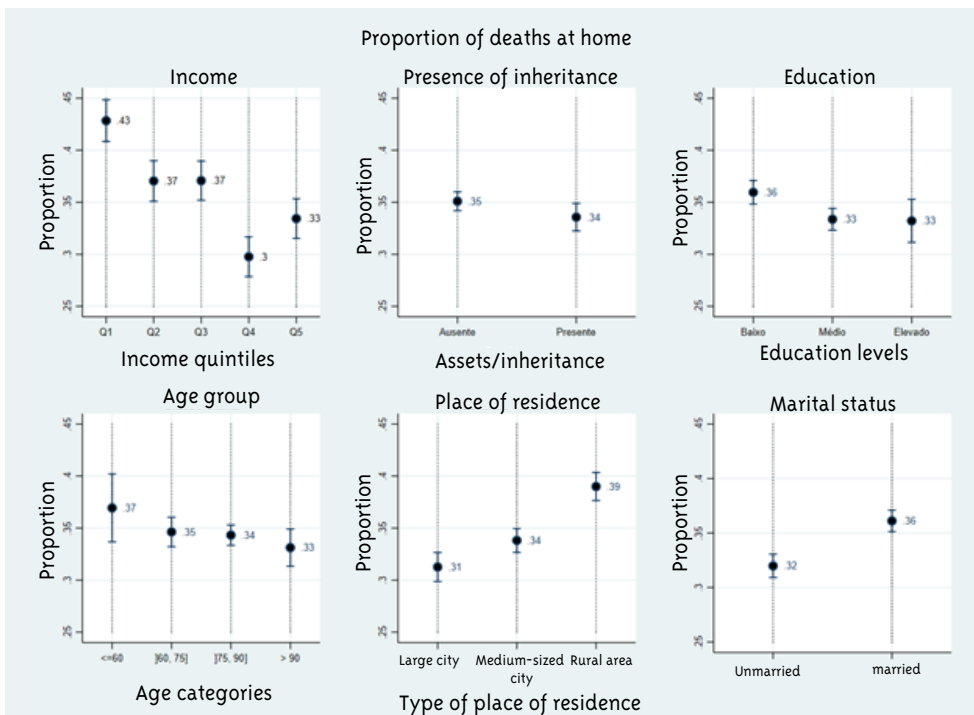
The results of the multivariate model confirm the preliminary results obtained in the previous univariate analyses. Individuals in income quintile 1 (the poorest), when compared with those in quintile 5 (the wealthiest 20%), have a 37% greater chance of dying at home. Likewise, deceased individuals who do not leave an inheritance have a 13% greater chance of dying at home compared with those who leave an inheritance. Regarding the level of education, the most fragile individuals, from an educational point of view, have a 15% greater chance of dying at home compared with those with a university degree. However, the possibility that this Odd-Ratio equals unity cannot be ruled out since the confidence interval includes the unit value. Those who live in a rural area, married individuals, those who received home care, and those whose cause of death was cancer or thrombosis are more likely to die at home. On the other hand, variables such as gender, number of children, number of activities with limitations, duration of illness, and age are factors that do not seem to explain death at home.

Figure 1 – Proportion of deaths at home by country



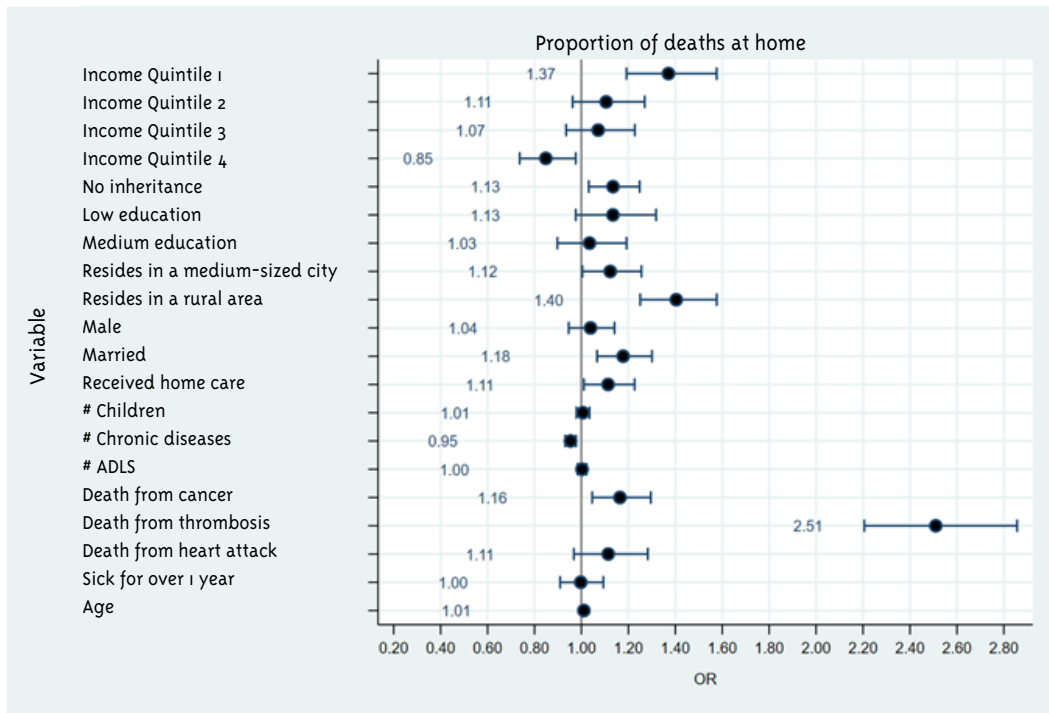
Source: Prepared by the authors, based on data obtained in SHARE

Figure 2 – Proportion of deaths at home, by sociodemographic variables



Source: Prepared by the authors, based on data obtained in SHARE

Figure 3 – Results of the logistic model: Odds-Ratio for death at home



Source: Prepared by the authors based on data obtained in SHARE

Discussion

This article aimed to investigate the influence of socioeconomic inequalities on the place of death of the European population. We used a European database (SHARE) that contains information on approximately 17,000 deaths in the 2005-2021 time frame. Multivariate data analysis using logistic models, which includes control variables, revealed that individuals with lower incomes are more likely to die at home when compared with those with higher incomes. An alternative way of presenting the effect of income on the place of death is to state that higher incomes are associated with a higher probability of dying in an institution. Although healthcare systems with near-universal access and low costs are the norm in European countries, access to care facilities for older adults (nursing homes, long-term care, palliative care, etc.) generally involves significant costs that can reduce access for the poorest. This result could, therefore, be explained by the income barrier in accessing care facilities for older people. The conclusion of this study regarding the relationship

between death at home and income, however, does not agree with the vast majority of results found in the literature, which indicate that higher levels of wealth are associated with the occurrence of death at home (Davies et al., 2019; Neergaard et al., 2019). We identify at least two reasons for this apparent contradiction: 1) the vast majority of articles that analyze this issue use the income of the area of residence of the deceased and not the individual income; 2) our data reflect a more heterogeneous reality, whether in terms of causes of death, cultures, and attitudes toward death, or other unobserved contextual factors that may influence the results. There is evidence to show that the magnitude and direction of the effect of socioeconomic factors on the place of death vary significantly between European countries (Pivodic et al., 2016).

Education level was not found to be a relevant factor in explaining the probability of dying at home. This conclusion is in line with the results of two recently published meta-analyses, in which the authors also concluded that the educational level of individuals does not explain the place of death (Davies et al., 2019; Neergaard et al., 2019). This result

implies that the possible greater communication efficiency between physicians and patients with better levels of education is not a mechanism that allows anticipating the prognosis of death and thus planning the place of death. However, it is essential to note that the variable we use to measure education is the patient's educational level, not the family member who can assist the patient in making decisions at the end of life. It is also important to note that the result of our analysis is valid for all causes of death. However, in the case of death from cancer, there is evidence that the most educated are more likely to die at home than the least educated (López-Valcárcel; Pinilla; Barber, 2020), which clearly shows that here, in fact, communication efficiency and acceptance of the prognosis can play an essential role in planning the place of death.

Our results also show that death at home is a predominantly rural phenomenon in Europe, while death in institutions tends to be urban. In rural areas, there are strong informal networks of mutual support, made up of family and friends, who support the process of dying at home, and there may be greater preparation of family and friends to deal with the rituals and processes of death. Equally important, there is generally less access to institutions that provide end-of-life care, including hospitals.

Future developments of this study involve a better understanding of the local phenomenon of death by analyzing more homogeneous populations, for example, by country and cause of death. On the other hand, the use of data analysis methodologies that allow for the simultaneous modeling of the various places of death—for example, with the specification, estimation, and analysis of multinomial regression models—could represent a quantitative leap and generate additional knowledge of the relationship between place of death and the SES of individuals. Another possible extension of this work involves incorporating other SES indicator variables in addition to traditional income and education, such as the type of professional occupation the individual had.

While multiple studies clearly show that individuals have a strong preference for dying at home (Pinzon et al., 2011; Hoare et al., 2015), death in institutions, mainly in hospitals, is the most common, as our data demonstrate, together

with other research referenced in this article. Our results also conclude that individuals with higher incomes, who are more likely to exercise their preference for dying at home, are precisely those who die in institutions, which creates an apparent contradiction that deserves reflection and analysis. It is possible that there is no contradiction at all and that individuals, in the current social and cultural state of developed countries, are not allowed to exercise their preference for the place of death. With the prevailing medical culture, financial and other incentives for maintaining aggressive treatments at the end of life, in addition to the feeling that professionals should be the ones to manage death (Sallnow et al., 2022), the conditions are created so that the patient and family members are unable to plan and exercise their preference regarding the place of death. We can, therefore, state that, in the current system of death existing in developed countries, in which death is highly medicalized (Sallnow et al., 2022), the hope of prolonging life clearly wins over the exercise of preference for the place of death.

References

- BECCARO, M. et al. Actual and preferred place of death of cancer patients. Results from the Italian survey of the dying of cancer (ISDOC). *Journal of Epidemiology & Community Health*, London, v. 60, n. 5, p. 412-416, 2006. DOI: 10.1136/jech.2005.043646
- BERGMANN, M. et al. *Survey participation in the Survey of Health, Ageing and Retirement in Europe (SHARE), Wave 1-7*. Munich: SHARE-ERIC, 2019. (Share Working Paper Series 41-2019). Disponível em: https://share-eric.eu/fileadmin/user_upload/SHARE_Working_Paper/WP_Series_41_2019_Bergmann_et_al.pdf. Acesso em: 12 jun. 2024.
- Börsch-Supan, A. *Survey of Health, Ageing and Retirement in Europe (SHARE): Wave 9 COVID-19 Survey 2*. Release version: 8.o.o. Munich: SHARE-ERIC, 2022. DOI: 10.6103/SHARE.w9ca.800. [S.d.].
- CABAÑERO-MARTÍNEZ, M. J. et al. Place of death and associated factors: a population-based study using death certificate data. *European Journal of Public Health*, Oxford, v. 29, n. 4, p. 608-615, 2019. DOI: 10.1093/eurpub/cky267

- CAI, J.; ZHAO, H.; COYTE, P. C. Socioeconomic differences and trends in the place of death among elderly people in China. *International Journal of Environmental Research and Public Health*, Basel, v. 14, n. 10, p. 1210, 2017. DOI: 10.3390/ijerph14101210
- CAMERON, A. C.; TRIVEDI, P. K. *Microeconometrics: methods and applications*. Cambridge: Cambridge University Press, 2005.
- COHEN, J. et al. Which patients with cancer die at home? A study of six European countries using death certificate data. *Journal of Clinical Oncology*, New York, v. 28, n. 13, p. 2267-2273, 2010. DOI: 10.1200/JCO.2009.23.2850
- COSTA, V. et al. The determinants of home and nursing home death: a systematic review and meta-analysis. *BMC Palliative Care*, London, v. 15, p. 8, 2016. DOI: 10.1186/s12904-016-0077-8
- DAVIES, J. M. et al. Socioeconomic position and use of healthcare in the last year of life: a systematic review and meta-analysis. *PLoS Medicine*, San Francisco, v. 16, n. 7, p. e1002878, 2019. DOI: 10.1371/journal.pmed.1002878
- PINZON, L. C. E. et al. Preference for place of death in Germany. *Journal of Palliative Medicine*, Larchmont, v. 14, n. 10, p. 1097-1103, 2011. DOI: 10.1089/jpm.2011.0136
- HOARE, S. et al. Do patients want to die at home? A systematic review of the UK literature, focused on missing preferences for place of death. *PloS One*, San Francisco, v. 10, n. 11, p. e0142723, 2015. DOI: 10.1371/journal.pone.0142723
- HOUTTEKIER, D. et al. Determinants of the place of death in the Brussels metropolitan region. *Journal of Pain and Symptom Management*, Madison, v. 37, n. 6, p. 996-1005, 2009. DOI: 10.1016/j.jpainsymman.2008.05.014
- KINOSHITA, H. et al. Place of death and the differences in patient quality of death and dying and caregiver burden. *Journal of Clinical Oncology*, New York, v. 33, n. 4, p. 357-363, 2015. DOI: 10.1200/JCO.2014.55.7355
- LÓPEZ-VALCÁRCEL, B. G.; PINILLA, J.; BARBER, P. Dying at home for terminal cancer patients: differences by level of education and municipality of residence in Spain. *Gaceta Sanitaria*, Barcelona, v. 33, n. 6, p. 568-574, 2020. DOI: 10.1016/j.gaceta.2018.06.011
- MEZEY, M. et al. What impact do setting and transitions have on the quality of life at the end of life and the quality of the dying process? *The Gerontologist*, Saint Louis, v. 42, n. suppl_3, p. 54-67, 2002. DOI: 10.1093/geront/42.suppl_3.54
- MPINGA, E. K. et al. First international symposium on places of death: an agenda for the 21st century. *Journal of Palliative Care*, Toronto, v. 22, n. 4, p. 293-296, 2006. DOI: 10.1093/geront/42.suppl_3.54
- NEERGAARD, M. A. et al. What socio-economic factors determine place of death for people with life-limiting illness? A systematic review and appraisal of methodological rigour. *Palliative Medicine*, London, v. 33, n. 8, p. 900-925, 2019. DOI: 10.1177/0269216319847089
- PIVODIC, L. et al. Place of death in the population dying from diseases indicative of palliative care need: a cross-national population-level study in 14 countries. *Journal of Epidemiology and Community Health*, London, v. 70, n. 1, p. 17-24, 2016. DOI: 10.1136/jech-2014-205365
- SALLNOW, L. et al. Report of the Lancet Commission on the Value of Death: bringing death back into life. *The Lancet*, London, v. 399, n. 10327, p. 837-884, 2022. DOI: 10.1016/S0140-6736(21)02314-X
- TANG, S. T.; CHEN, C.-H. Place of death and end-of-life care. In: COHEN, J.; DELIENS, L. (Ed.). *A public health perspective on end of life care*. New York, USA: Oxford University Press, 2012. p. 21-34.
- TANG, S. T.; MCCORKLE, R. Determinants of place of death for terminal cancer patients. *Cancer investigation*, New York, v. 19, n. 2, p. 165-180, 2001. DOI: 10.1081/cnv-100000151
- WILSON, D. M. et al. The rapidly changing location of death in Canada, 1994-2004. *Social Science & Medicine*, Oxford, v. 68, n. 10, p. 1752-1758, 2009. DOI: 10.1016/j.socscimed.2009.03.006
- YAMOUT, R. et al. Preferred place of death for patients with terminal illness:

a literature review. *Progress in Palliative Care*, Leeds, v. 30, n. 2, p. 101-110, 2021.
DOI: 10.1080/09699260.2021.1961985

ZAMAN, M. et al. What would it take to die well? A systematic review of systematic reviews on the conditions for a good death. *The Lancet Healthy Longevity*, Oxford, v. 2, n. 9, p. e593-e600, 2021.
DOI: 10.1016/S2666-7568(21)00097-0

Author contribution

All authors contributed substantially to all stages of the work, namely, project design, data analysis and interpretation, article drafting, relevant critical review of the intellectual content, and final approval of the version to be published. All are responsible for ensuring the accuracy and integrity of any part of the work.

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