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Watching care behind closed doors: upward and downward accountability mechanisms in nursing home services

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ABSTRACT

Nursing homes (NHs) play a critical role in caring for vulnerable people, yet their operations often remain hidden from public scrutiny, potentially causing a negative impact on service quality. We investigate upward and downward accountability mechanisms in NH services, examining how relatives of NH residents assess these mechanisms and what influences their assessments. We conducted an original survey in Spain ($n = 1009$), targeting direct relatives of NH residents. Our findings show important insights about the influence of private ownership, performance during COVID-19, and knowledge on the two types of accountability. The study demonstrates that downward and upward mechanisms are closely intertwined.

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KEYWORDS Accountability; downward accountability; upward accountability

Introduction

The COVID-19 pandemic highlighted the need to reform care policies that target the elderly, in particular, nursing home services. In many cases, nursing home residents, due to their position in the life cycle and their limited individual autonomy, not only lack influential voices but are also sometimes constrained in their capacity to provide feedback on the quality of care they receive. Furthermore, the closed-doors environment in which services are provided highlights the need for accountability to prevent neglect and abuse, and to improve the governance of the services. This is particularly significant in long-term care facilities, which are characterized by informational asymmetries between providers and clients. Accountability in nursing homes is thus crucial to enable the elderly and their close family members to assess the quality of the care they receive. Accountability that is directed at users and families can be a mechanism to improve the communication channels between providers and

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beneficiaries, something which may also have consequences for the quality of the services (Pérez-Durán and Hernández-Sánchez 2024).

We investigate how direct family members perceive different accountability mechanisms in this crucial and under-investigated setting by posing the following central question: *What are the determinants of downward and upward accountability mechanisms perceived by the beneficiaries of nursing home services?*

This article investigates the assessment made by relatives of nursing home residents of two core types of accountability mechanisms: upward and downward (Overman 2020; Schillemans et al. 2021, Verschuere et al. 2006, 268). For downward accountability mechanisms, we examine those directed by nursing homes towards their core clients/beneficiaries: direct family members of the residents. For upward accountability mechanisms, we investigate how family members perceive services to be subject to control mechanisms put in place by public authorities. For this study, we conducted a survey targeting direct relatives of nursing home residents in Spain ($n = 1009$). The survey collected information on the services provided, on the nursing home residents, on information provided to their relatives, and on their perception of how the services are monitored, among other factors. To address our research questions, we examined the impact of various macro-, meso-, and individual-level characteristics. At the meso level, we investigated the effect of types of ownership and perceived performance during the COVID-19 pandemic. At the macro level, we explored the effect of the formal transparency laid out in the legislation that regulates the services. Additionally, at the individual level, we examined nursing home residents' level of wealth/income and their relatives' knowledge and familiarity with the legislation regulating the services.

This article provides three key contributions to the literature on accountability and long-term care policies. First, the literature so far has mainly investigated specific types of accountability, such as vertical (Bach et al. 2017; Brandsma and Schillemans 2013), horizontal (Overman, Van Genugten, and Van Thiel 2015), or societal accountability arrangements (Goetz and Jenkins 2001). Our study contributes by examining the character of both upward and downward accountability. Previous studies on regulatory agencies by Verhoest, Molenveld, and Willems (2015), Verschuere et al. (2006), and Schillemans (2011) provide core insights into understanding the extent to which each type of accountability arrangement (e.g. downward) compensates for the other (e.g. upward). For instance, while Verschuere et al. (2006) found that senior managers of regulatory agencies perceived upward accountability to the government as more important than downward accountability towards society, Schillemans (2011) argued that downward arrangements can compensate for deficits in vertical accountability. In this article, we investigate the determinants of different accountability mechanisms, and find that the same variables appear to affect both types of accountability. This demonstrates that, regarding these services, the two accountability arrangements do not appear to be in conflict. This alignment between mechanisms directed towards beneficiaries and those that are aimed at public authorities may have positive effects on improving eldercare services.

Second, our study addresses an important gap in the literature on accountability by focusing on a lesser-researched context. Accountability has been explored at the government and organizational level, and the policy topics covered have mainly concerned education and health services (Pérez-Durán 2023). By focusing on nursing home services, the paper focuses on services that operate in closed-door, opaque

contexts, in which the residents may be subject to different types of vulnerability. To better understand the complexity of this social phenomenon, we bring together the analysis of various levels of dynamics, including the institutional, organizational, and individual. Similarly, while scholars of social policy (e.g. Ranci and Pavolini 2015; Szebehely and Meagher 2018) have studied structural reforms in the provision of eldercare services, few studies have examined the implications of these reforms in terms of the accountability of the services.

Finally, previous studies examining the quality and governance aspects of these services have relied on surveys targeted to the general public (e.g. Berg and Johansson 2020; Meier et al. 2022, 79). However, the general public may not have any direct experience with the services in question, and the experiences of people that are directly affected by them may well be significantly different. Research in social psychology has shown that the psychological distance we feel from an object that we are evaluating affects how we assess it (Kundrat and Rojkova 2021). Therefore, our study focuses on beneficiaries/clients of the services, something that is also novel from the perspective of accountability studies, which is a field that has traditionally concentrated on exploring the perceptions of the actors responsible for providing accountability (Blomqvist and Winblad 2022; Overman, Schillemans, and Grimmelikhuijsen 2021). Our study makes a valuable contribution by centring specifically on the perspectives of the primary accountability forum, namely the clients of the service. Hence, by collecting primary data through surveys fielded to direct relatives of nursing home residents, we are able to provide a more nuanced and reliable understanding of the factors that influence the accountability of these services (Hado and Feinberg 2020).

Defining the accountability of nursing home services: beneficiaries' perceptions regarding upward and downward accountability

Accountability is understood as a social relationship between at least two parties, an actor and a forum, where the account-giver is expected to inform and justify their actions, while the account-holder is endowed with mechanisms to evaluate and sanction such actions (Bovens 2007; Mulgan 2000). From this definition, which encompasses an informative dimension and a sanctioning dimension, accountability is understood to have both a supply side and a demand side (Brandsma and Schillemans 2013; Pérez-Durán 2023). The former primarily refers to the mechanisms established by governments, public officials, and/or service providers to give information about and justify their conduct, while the latter relates to the mechanisms for evaluation and sanctioning exercised by the forum and monitoring bodies. In nursing home services, accountability actors can include governments that participate in implementing these services and their policy processes, private actors that are involved in the provision of the services, nursing homes as organizations (including public, for-profit, and non-profit entities), public servants and managers of both public and private organizations, and professionals in the sectors who participate in the day-to-day care of nursing home residents. In turn, accountability forums can include governments themselves, as they conduct oversight and control mechanisms of the services; independent agencies/bodies such as patients' ombudspersons, audit offices, and legislative bodies; and the beneficiaries of the services, including the residents and their family members.

While accountability can involve multiple account-givers and account-holders, we seek to understand the perceptions of the direct relatives of nursing home residents, who are core recipients of accountability because they play a central role in monitoring the care and health of residents (Kemp et al. 2020). Additionally, in cases involving high levels of dependency, they often serve as the 'eyes and ears' of care recipients (Hado and Feinberg 2020).

Hence, for our research, we focus on analysing the perceptions of the direct relatives of the residents as the beneficiaries of accountability. Based on Schillemans et al. (2021) and Verschuere et al. (2006), who argue that there are different mechanisms that can be used to hold public organizations accountable for their actions, namely 'upward' and 'downward' accountability processes, we examine such mechanisms from a top-down and a bottom-up perspective. On the one hand, upward accountability mechanisms are based on the notion of authority and political control and are directed towards hierarchical superiors, such as ministries and parliaments (Verschuere et al. 2006). That is, they are developed within hierarchical structures of control. We investigate the perceptions of beneficiaries regarding upward accountability mechanisms by examining the extent to which they perceive nursing home services to be subject to control by public organizations, particularly their assessment of the control exercised by the public authorities/organizations responsible for overseeing these services.

In contrast, downward accountability 'focuses on the direct accountability mechanisms of an organization to its clients, the general public, stakeholders and/or interest groups' (Verschuere et al. 2006, 268). These forums, which normally lack the authority to actually hold the organization accountable, can also include citizens, users, and interest groups (Hood 2010). Hence, we assess downward mechanisms by examining the extent to which family members directly receive information about different aspects of the services. To identify these aspects, we follow Broms, Dahlström, and Nistotskaya (2020), who employed specialized studies of the quality of nursing home care, particularly Donabedian (1988) and Du Moulin, van Haastregt, and Hamers (2010). For instance, Donabedian's classical model (Donabedian 1988) emphasizes the analysis of three core dimensions of the quality of the services: structures, processes, and outcomes. Such distinctions are very much in line with the process-outcome characterizations of previous studies (e.g. Grimmelikhuijsen and Welch 2012).

Drawing on these studies, we argue that a downward accountability approach involves providing information to relatives regarding core aspects of service quality, including the structures, processes, and outcomes of the services. Downward mechanisms directed towards family members regarding the structures of the services refers to providing information about the conditions under which care is delivered, including information about the availability of resources – both material and human – and the qualifications of the staff. The accountability of the process refers to providing information on the activities that constitute the care of the residents, such as treatment plans, diagnoses, meals, and participation channels. Lastly, accountability of the outcomes refers to providing information about monitoring, evaluations, and the clients' satisfaction with the care received (Broms, Dahlström, and Nistotskaya 2020; Du Moulin, van Haastregt, and Hamers 2010, 288; Pérez-Durán and Sánchez-Hernández 2024). Following this conceptualization, we investigate the extent to which direct family members benefit from these downward mechanisms that reflect these three dimensions of the services.

Our approach, which focuses on examining perceptions of accountability, aligns with previous studies that have assessed individual perceptions to measure accountability. For example, Bovens and Wille (2021) examined how independent oversight institutions are perceived by experts in terms of their accountability powers. Bach et al. (2017) focused on agency chief executives' perceptions of accountability. Overman, Schillemans, and Grimmelikhuijsen (2021) provided core insights by examining so-called 'felt accountability', which emphasizes individuals' expectations of being held responsible for their actions and performance in the future. These studies primarily examine the perceptions of actors that are responsible for providing accountability. Our study contributes to this body of research by focusing on the perceptions of clients of the services.

Potential determinants of accountability mechanisms in nursing home services

By including the analysis of both upward and downward accountability mechanisms, this study contributes to understanding whether these two mechanisms are complementary, or whether there are any potential tensions and conflicts that may arise between them (Hood 2010). While one may conceivably argue for differentiating the variables that might affect the two types of mechanisms, we expect the variables to affect both in a similar manner. As mentioned above, for this study we use the terms 'clients' and 'beneficiaries' interchangeably to refer to the direct family members of nursing home residents receiving care or benefiting from the services provided.

First we test a determinant that has been mainly investigated in studies on service quality and regulatory compliance: ownership and type of funding. Due to low levels of institutionalization and scarce public investment in long-term care policies, many countries have allowed market actors to provide nursing home services (Ranci and Pavolini2015). This can be provided through various arrangements involving public and private organizations, including public, non-profit,and for-profitfacilities (Ranci and Pavolini 2015). Public administration studies provide valuable insights into the differences in organizational performance among the different types of providers. Some studies argue that private organizations are less inclined to prioritize legal and political responsiveness, since their main focus is often centred on minimizing costs (Amirkhanyan etal.2018,36). In contrast, public organizations are more likely to be subject to control mechanisms (Amirkhanyan etal. 2018). Amirkhanyan (2008) showed that changing the organizational ownership of public nursing homes to a for-profit model increased the number of regulatory violations and decreased service quality.

In a recent study of regulatory compliance in nursing home services, Song (2022, 5) argues that public organizations are more constrained by formal mandates and obligations, making them more likely to comply with regulations and 'less likely to commit regulatory violations than for-profit organizations' (6), especially when market competition increases. Song (2022) also shows that non-profit organizations tend to have a better compliance record with regulations, which can be explained by the greater costs that regulatory violations can impose on their unique legal status. In a recent study, Broms, Dahlström, and Nistotskaya (2023) find that non-profits perform better in some dimensions of service quality, such as in higher staff density, more highly-educated personnel, and residents' satisfaction with the

services. Likewise, Meier et al. (2022, 70) highlight that public and non-profit facilities have better quality indicators related to the structure of the services (e.g. better equipment and resident monitoring), receive fewer complaints, and have fewer regulatory deficiencies. Based on these previous studies, we also expect that ownership type may influence perceptions of both downward and upward accountability mechanisms in nursing home services. Specifically, if private for-profit organizations are more likely to receive a higher number of complaints and exhibit more regulatory deficiencies, this is likely to result in the reduced provision of information to relatives about the services provided (downward accountability) and could indicate a lack of public control (upward accountability). Therefore, our hypothesis is:

H1: Family members of residents in public and non-profit facilities will perceive higher levels of both upward and downward accountability compared to those of residents in private for-profit facilities.

In addition to examining the type of facility, we also explore the impact of the type of place/bed occupied by a resident. These can include wholly public long-term care places/beds in public facilities, fully publicly-funded beds in private facilities, partially subsidized beds in private facilities, and entirely private places. In line with our previous hypothesis, we expect beneficiaries to perceive higher upward and downward accountability when their relatives have a type of bed that is under the direct control of public authorities than when the beds are fully funded and managed by private facilities.

H2: Family members of residents with publicly funded long-term care places/beds will perceive higher levels of both upward and downward accountability compared to family members of residents with fully private long-term care beds.

Second, we test whether social inequality amongst residents affects their relatives' perceptions of upward and downward accountability. Only recently have scholars begun to recognize and emphasize the importance of social inequities in access to government data (Ruijer et al. 2023). In this study, we hypothesize that there may be different experiences perceived by family members of disadvantaged residents in terms of their socio-economic status (i.e. income levels, or if they receive welfare payments). Kang, Meng, and Miller (2011), examining service quality in the United States, suggest that reliance on public health insurance programmes like Medicaid, which offer lower reimbursement rates, is associated with poorer quality of care. Similarly, studies of the sector made by Harrington et al. (2000) reveal that when care homes have higher proportions of Medicaid residents, this is associated with deficiencies in the quality of care. By focusing on inequality in access to these services, Jilke, Van Dooren, and Rys (2018) explore discriminatory practices carried out by public and private nursing home facilities in Flanders towards minority beneficiaries, specifically ethnic minorities that access the services as prospective clients. Although these studies approach the issue from different angles, some examining service quality, others access to services, and yet others equality among minority beneficiaries, their findings provide insights into the potential shortcomings that the family members of disadvantaged residents might face in receiving information about the services that their relatives receive.

Building on the previous arguments, we might expect family members of disadvantaged clients to perceive not only poor quality of care, but also deficiencies in the information provided and in the control exercised over the nursing home where their relatives reside.

H3: Family members of disadvantaged residents (in terms of income and dependency) will perceive lower levels of both upward and downward accountability.

Third, studies of accountability determinants have rarely taken into account the influence of historical contextual variables. Here, we argue that to understand accountability in nursing homes, we need to consider how they performed during COVID-19. The COVID-19 pandemic affected vulnerable groups, and nursing home residents were among the most affected (Comas-Herrera, Ashcroft, and Lorenz-Dant 2020). Between 30 and 60% of the total number of COVID-19-related deaths in European countries in the spring of 2020 occurred in nursing homes (Bernardi, Cozzani, and Zanasi 2021). The COVID-19 crisis revealed a failed governance model in the sector (Daly et al. 2022), and since the outbreak mainly affected the elderly people living in these facilities, we also examine the perceived performance of nursing homes in managing and facing up to this crisis. The provision of information has been considered an important condition for high levels of trust and performance during the pandemic (Moon 2020). Building on Moon's (2020) study, we examine the impact of beneficiaries' perceptions of the responses of nursing homes during the pandemic on their perceived levels of upward and downward accountability regarding the services. We expect that if a nursing home responded to the COVID-19 crisis successfully, this positive experience will have a positive impact on how the services are perceived in terms of these two modes of accountability.

H4: Family members of residents in nursing homes that had a better response to COVID-19 will perceive higher levels of both upward and downward accountability.

Fourth, we consider knowledge of the legal framework. According to Grimmelikhuijsen and Klijn (2015, 998), individuals' information processing can be influenced by prior knowledge of a topic and their familiarity with it. Applying this idea to the context of nursing home services, it can be argued that a greater understanding of the legislative framework that regulates these services, regardless of their level of development, could raise the expectations of families regarding the information they should receive and the evaluation processes to which services should be subjected. Additionally, an individual's level of familiarity with the legal framework can also be related to their social capital and education and might serve as an indicator of the level of interest they have in the functioning of these services. Therefore, it is possible that this increased awareness and knowledge could lead to a more critical assessment of the upward and downward accountability mechanisms of these services by beneficiaries.

H5: Facility beneficiaries with higher levels of knowledge of the legal framework that regulates the services will perceive lower levels of both upward and downward accountability.

Finally, we look at formal transparency requirements. Previous studies have distinguished formal transparency from nominal transparency and/or accountability (Heald 2003). In other words, the formal rules of these governance dimensions may be different from how they are perceived and used in practice (Pérez-Durán 2016). In our study, we investigate whether formal transparency requirements positively affect the implementation of both upward and downward accountability mechanisms, since they facilitate core information being provided about the services to users and public authorities. While the impact of formal regulations may not always be clear, it is reasonable to assume that formal transparency rules have a positive effect on both modes of accountability practices by ensuring that they are grounded in legally established obligations, rather than relying on the discretion of service providers (Cucciniello and Nasi 2014). Accordingly, we hypothesize that more stringent formal transparency obligations will have a positive effect on both upward and downward accountability.

H6: Family members of nursing home residents operating in an environment with higher levels of formal transparency obligations will perceive more upward and downward accountability.

Data and method

Data collection

The study focuses on the Spanish context, where the governments of the seventeen regions (Autonomous Communities) are responsible for regulating and financing nursing home services. This decentralized model has led to regional differences in the implementation, regulation, quality and assessment of the services (Daly et al. 2022). In the Spanish context, these services have a weak regulation of their control mechanisms (Daly et al. 2022; Pérez-Durán and Hernández-Sánchez 2024), scarce funding and growth in spending over time, and a lack of coordination between health and social care services (Costa-Font, Jiménez Martin, and Viola 2021).

The target population of our survey consisted of direct relatives of nursing home residents from the 17 Autonomous Communities in Spain (see Table A.2 in Appendix 1). We designed the questionnaire that was used in the survey, and in December 2022 it was administered by Kantar Group Spain to their online panel. A total of 1,009 respondents completed our questionnaire. This number is indicative of the specificity and complexity of the target population, which is challenging for panel companies to fulfil.

The survey was intended to gather information from adult respondents residing in Spain who had a mother or father currently residing in a nursing home. In situations where both parents of the respondents were living in nursing homes, they were asked to select one parent for their responses in the survey. The primary reason for fielding the survey to relatives of nursing home residents was to assess accountability practices from the perspective of those who are core recipients of this information, people who should be kept informed of the status of their relatives. As Kemp et al. (2020) argue, family members can play a significant role in monitoring care home residents' health and the care they receive. To target daughters or sons of nursing home residents, the

panel company identified individuals that had a relative in a nursing home and asked respondents the following question: 'What is your relationship with your relative that lives in the nursing home?' The survey was conducted in Spanish, and respondents accessed it using their personal computers or mobile phones.

The sample is representative of the nursing home situation in Spain. First, 38% of respondents were relatives of residents in public nursing homes and 62% were relatives of residents in private facilities. This distribution closely mirrors the actual distribution of residents between public and private facilities in Spain: 27% and 73%, respectively. Socioeconomic variables are also well represented; see the descriptive data of the other variables of interest in Appendix 1. To the best of our knowledge, this study is the first of its kind to be conducted in Spain. As such, it underwent a rigorous review process, which involved obtaining ethical approval from the main author's institution's Ethics Committee, as well as being subjected to extensive revisions by experts in field and survey methodology. To further ensure the quality of the survey, as part of the review process we also conducted nine (cognitive) interviews with representatives from associations representing the relatives of nursing home residents across the different Spanish regions. These interviews were conducted in the second half of 2021 and in 2022 and allowed us to us to refine the survey and ensure that the questions were clear and easy to understand for the target population.

Dependent variables

To measure perceptions regarding the *downward accountability* mechanisms of the services, we asked residents' relatives whether in general, their nursing home provided information related to the following aspects of the services: their structure (6 items), processes (8 items), and evaluation (4 items). For example, we asked whether the nursing home provided information about 'general staff ratios' (structure item), their relative's individual care plan (process item), and information about the 'results of public inspections conducted in the nursing home' (evaluation item). For each item, the respondents indicated whether the answer was yes (coded as 1) or no (coded as 0). These questions are included in Appendix 2. From these questions, we calculated three separate indexes (*provision of information on the structures, on the processes, and on the evaluation of the services*). We did this by adding up the total number of informational items that the nursing home provided to each relative for each dimension. We also constructed an *aggregate index of downward accountability* by adding up the three indexes. To ensure the internal consistency of each index, we calculated Cronbach's alpha coefficients, whose values were 0.80 for the aggregate index of *downward accountability*, 0.71 for the provision of information on structures, 0.74 for the provision of information on processes, and 0.75 for the evaluation of the services. These are all above the minimum acceptable value of 0.70, indicating that the indices have acceptable reliability. Descriptive statistics for these variables are presented in Table A.7 (in Appendix 3).

To operationalize perceptions of *upward accountability*, which is based on vertical public control, we asked relatives of residents the following question: 'To what extent do you consider that the public administration monitors and/or conducts evaluations of the nursing home?' The response categories were as follows: (0) *Not at all*, (1) *Very little*, (2) *Somewhat*, (3) *Very much*, and (4) *Completely* (see Appendix 2). To test our analysis and base it on the response distribution, we created a binary variable by

recoding the responses, where values of 0 indicate low levels of perceived accountability (i.e. those who answered *Not at all*, *Very little*, or *Somewhat*) and values of 1 indicated high levels of perceived accountability (i.e. those who answered *Very much* or *Completely*; see Table A.7 of Appendix 3). In addition, we performed a Shapiro-Wilk normality test to assess whether this variable had a normal distribution. The test statistic is 0.666 and the *p*-value is 0.84322. Since the *p*-value is greater than 0.05, we do not reject the null hypothesis of normality and can conclude that this variable has a normal distribution. Hence, the assumption of normality of OLS allows us to perform linear analyses as a robustness check (see Appendix 5).

Independent variables and controls

To measure ownership, we used two measurements based on different questions from our survey. For our first measurement, we focused on measuring the type of nursing home. We asked, 'What type of nursing home does your relative live in?', and used four response categories: 'Public nursing home' (1, baseline category), 'Private for-profit nursing home' (2), 'Private non-profit nursing home' (3), and 'Private nursing home (unaware whether it is for-profit or non-profit)' (4). Although our study aims to examine the effect of three types of responses, from our cognitive interviews, we realized that we needed to include a category in which respondents did not know whether the nursing home was private for-profit or non-profit. In addition, we also included a second measurement to identify the type of place/bed by asking all who chose a private nursing home (in any of its forms) the following question: 'Please indicate the type of bed your relative occupies in the nursing home'. The response categories were 'Public or semi-public bed' or 'Private bed.' Hence, we could differentiate whether the service is provided by a public nursing home (1, baseline category), a private nursing home but with a public bed (2), or a purely private bed (3) (see Table A.8 of Appendix 3).

As a measurement of social disadvantage/vulnerability, we asked relatives to indicate the main source of funds used to cover the nursing home fees. For those who choose 'Public subsidy', we also asked, 'Approximately what share of the total monthly cost of the nursing home is covered by the subsidy received by your relative?'. The response categories were the following: 'Less than 20%', 'Between 21% and 40%', 'Between 41% and 60%', 'Between 61% and 80%', and 'Between 81% and 100%'. The responses allowed us to create a variable with three categories, coded 1 for those who do not receive any public subsidy (baseline category), 2 for those who receive a public subsidy of less than 40% of the total cost, and 3 for those who receive a public subsidy of 40% or more. In the Spanish context, the process of receiving a public subsidy varies depending on the autonomous community, which is responsible for implementing these services. Typically, factors such as dependency status, age, and financial resources are taken into consideration. Therefore, our measurement encompassed not only economic wealth but also vulnerability resulting from limited autonomy.

The response of nursing homes to the COVID-19 pandemic was assessed in our survey through the following question: 'How do you evaluate the response of your relative's nursing home to the COVID-19 pandemic?', which the relatives of residents scored on a five-point Likert scale ranging from *Extremely bad* (0) to *Extremely good* (4). Since this variable did not follow a normal distribution, we created a categorical variable that included three categories: 2 for those who perceived *Good* or *Extremely*

good performance, 1 for *Neither good nor bad*, and 0 for those who perceived *Bad* or *Extremely bad performance*.

To measure how familiar/knowledgeable relatives of residents were with Spanish nursing home legislation, we asked the following question: 'How knowledgeable do you feel about the functioning of nursing home services?', scored on a 5-point scale ranging from 0 (*Not at all*) to 4 (*Completely*). We used the Shapiro-Wilk normality test to confirm the normal distribution of this variable (the test statistic was 0.274 and the *p*-value 0.99933). Since this assumption was met, this variable was treated as continuous.

To measure the level of formal transparency of the services, we conducted a systematic analysis of the formal stipulations made by regional governments that regulate nursing home policies. The development of this numerical and continuous index is explained in detail in Appendix 4.

The analysis includes several control variables from our survey. First, we control for various characteristics displayed by the residents: previous stays in other nursing homes, gender, age, dependency status, period of stay at the nursing home, and frequency of interaction between the resident and her/his relative. Second, we also control for three characteristics displayed by the nursing home: price, location, and size. Appendix 3 provides a detailed description of each control variable, the questions used in the survey, and their descriptive statistics.

Analysis

Since our dependent variable of downward accountability is continuous, we estimate the factors using linear regression models. The main analysis uses the aggregate level of downward accountability, as noted in our theoretical expectations. To supplement this, we also run separately analyses the provision of information on the structures, processes, and evaluation of the services (see Appendix 5). Based on our operationalization of upward accountability, we conduct logistic regression analyses (we also conduct OLS analysis as part of the sensitivity analyses; see Appendix 5). Although the residents live in different Spanish regions, which might suggest that we include multilevel models, the interclass correlation (IC) approaches 0. Therefore, grouping by regional governments is not suitable for our analysis. To assess multicollinearity among the independent variables, we calculated the variance inflation factor (VIF), where a VIF value of 1.60 indicates no collinearity among the independent and control variables examined.

Results and discussion

Table 1 shows the results of the two models that examine the dependent variable on downward accountability, and the two models that examine upward accountability. Models 1 and 2 present the outcomes of linear regression analyses of downward accountability, while Models 3 and 4 present the outcomes of logistic regression analyses of upward accountability. Models 1 and 3 include the type of facility and all the other independent variables and controls, while Models 2 and 4 include the type of long-term care place/bed. All the models include the remaining independent variables and controls (see the full table in Table A.9, in Appendix 5).

Table 1. Downward and upward accountability in nursing home services: linear and logistic regression analyses.

Variables	Model 1. Downward accountability	Model 2. Downward accountability	Model 3. Upward accountability	Model 4. Upward accountability
(Intercept)	6.531 (1.379)***	6.545 (1.371)***	−2.613 (0.788)***	−2.610 (0.786)***
Type of NH (ref. category = public NH)				
Private for profit	−0.142 (0.339)		−0.337 (0.190)*	
Private non-profit	0.032 (0.425)		−0.594 (0.240)**	
Private-don't know	0.083 (0.381)		−0.394 (0.214)*	
Type of bed (ref. category = public bed in a public NH)				
Pub. seat in priv. NH		−0.608 (0.352)*		−0.449 (0.199)**
Priv. seat in priv. NH		0.384 (0.325)		−0.386 (0.182)**
Wealth status (ref. category = no public subsidy)				
Public subsidy of less than 40%	0.340 (0.443)	0.383 (0.441)	0.143 (0.244)	0.142 (0.244)
Public subsidy + 40%	−0.287 (0.377)	−0.177 (0.377)	−0.243 (0.212)	−0.233 (0.213)
Response COVID-19 (ref. category = bad or very bad performance)				
Nor good nor bad	2.882 (0.453)***	2.836 (0.451)***	0.545 (0.282)*	0.541 (0.282)*
Extremely good or good	3.443 (0.419)***	3.408 (0.417)***	1.270 (0.264)***	1.267 (0.264)***
Formal Transparency	−0.001 (0.009)	0.000 (0.009)	−0.003 (0.005)	−0.003 (0.005)
Familiarity legislation	1.567 (0.143)***	1.562 (0.141)***	0.651 (0.084)***	0.641 (0.084)***
Size of NH (ref. category = less than 25 beds)				
25-49 beds	−0.443 (0.469)	−0.387 (0.467)	0.080 (0.263)	0.094 (0.263)
50 -100 beds	−1.196 (0.467)*	−1.115 (0.466)*	0.291 (0.261)	0.299 (0.261)
+100 beds	−1.040 (0.557)*	−0.939 (0.555)*	0.239 (0.312)	0.249 (0.312)
Location (ref. category = large city)				
Outskirts of a large city	−0.020 (0.332)	0.015 (0.330)	0.188 (0.183)	0.193 (0.183)
Small-medium-size city	−0.521 (0.322)	−0.518 (0.320)	−0.236 (0.179)	−0.229 (0.179)
Village	−0.134 (0.428)	−0.104 (0.424)	−0.194 (0.241)	−0.197 (0.240)
Price	0.006 (0.061)	−0.023 (0.061)	0.039 (0.034)	0.041 (0.035)
Dependency status	−0.254 (0.312)	−0.258 (0.310)	0.018 (0.175)	0.013 (0.174)
Stay period	0.139 (0.124)	0.147 (0.124)	−0.061 (0.070)	−0.061 (0.070)
Resident's age	0.002 (0.014)	0.002 (0.014)	−0.010 (0.008)	−0.009 (0.008)
Relative's gender	−0.225 (0.253)	−0.246 (0.252)	0.011 (0.141)	0.005 (0.141)
Previous stay in a NH	−0.520 (0.324)	−0.418 (0.323)	0.330 (0.179)*	0.329 (0.180)*
Freq. of interaction	−0.226 (0.107)**	−0.214 (0.107)**	0.093 (0.060)	0.096 (0.060)
Num.Obs.	1009	1009	1009	1009
R2	0.204	0.211		
R2 Adj.	0.186	0.194		
AIC	5657.5	5647.3	1258.4	1257.5
BIC	5775.5	5760.4	1371.5	1365.6
Log.Lik.	−2804.732	−2800.635	−606.192	−606.736
F	11.496	12.537	5.956	6.216
RMSE	3.90	3.88	0.46	0.46

*$p<0.1$; **$p<0.05$; ***$p<0.01$.

Downward accountability mechanisms

Model 1, which includes the type of ownership (public, private for-profit, private not-for-profit, and private unknown), does not yield significant results for this variable. This null finding does not support our H1, and highlights the need to expand the sample size, specifically because the measurement of the type of nursing home bed

yields significant results. That is to say, in Model 2, a negative association is observed between residing in a private nursing home with a publicly funded bed/place and higher downward accountability, compared to individuals with relatives occupying public beds in public nursing homes. Although the effect is very weak, the finding that a publicly-funded bed in a private care home is associated with less perceived downward accountability lends support to H2, suggesting that services provided through arrangements with private entities are less accountable to the relatives of residents in terms of key aspects of their services.

For H3, we expected that family members of more disadvantaged residents would perceive less downward accountability. However, our results do not provide consistent results for this expectation. In the supplementary analysis, we show the disaggregated results for the three dimensions of downward accountability; this result emphasizes the importance of further investigation of specific dimensions, because this complementary analysis suggests that a higher percentage of public funding to cover the cost of residing in a private facility is significantly associated with lower downward accountability on the outcomes of the services. This suggests that the relatives of the most vulnerable users (as vulnerability is associated with amount of public subsidies received, based on income and a resident's high level of dependence) receive less information about core aspects of service evaluation, such as audit results and quality assessments.

Our results also confirm our expectations for H4 that a better perception of the facility's response to COVID-19 has a positive effect on the perception of downward accountability ($p < .001$). That is, having a positive perception of a nursing home's response to the COVID-19 crisis is positively and significantly related to perceived downward accountability. A possible interpretation is that a positive response to the COVID-19 pandemic also improved the relatives' perceptions of the systematic day-to-day provision of information about core aspects of the services.

Furthermore, our results also show that greater familiarity with the legislation that regulates these services positively affects perceptions of downward accountability ($p < .001$). In terms of our H5, although we expected individuals' higher levels of interest and awareness in the functioning of these services leading to a more critical assessment of the information they actually receive (in other words, we expected that a better understanding of their rights to information would make them more critical of any shortcomings in this area), our results are surprising. They indicate that knowing more about how the services are regulated positively influences the relatives' perception of downward accountability. A possible interpretation is that greater familiarity with regulation may imply that relatives are more involved in the care process and consequently more willing to keep effective communication channels open with service providers, which in turn could influence their perception of downward accountability. As for our expectation of the impact of the legal framework on transparency obligations (H6), our analysis does not provide significant results. This is in line with previous studies that have highlighted the scarce level of regulation across the 17 regional governments.

Regarding our controls, our analysis indicates that a low level of interaction between relatives and residents has a negative effect on the perception of downward accountability. This suggests that when relatives are not familiar with the day-to-day activities of the residents, it might be difficult for them to accurately assess the level of downward accountability. Consequently, they

may perceive a lower level of accountability than those who have more interaction and knowledge about the status and well-being of their relatives. Regarding the size of the residential facilities, our analysis reveals that compared to very small nursing homes (i.e. those with fewer than 25 beds), both medium (i.e. those with 50–100 beds) and large facilities (those with more than 100 beds) were perceived as providing less downward accountability. This suggests that in smaller facilities, there may be closer interactions between staff, residents, and their families, leading to a greater perception of downward accountability.

Upward accountability mechanisms

In terms of upward accountability, the analyses show some similarities with the findings for downward accountability. Our analysis supports our expectations for upward accountability as stated in H1 and H2. On the one hand, relatives of residents in private facilities (in all their forms, with the exception of private non-profit facilities) perceive lower levels of upward accountability. The same occurs with private places/beds, even if they are publicly funded, which are significantly and negatively associated with a perception of being less accountable to the public authorities ($p < .05$). These results are in line with the findings of previous studies that hybrid arrangements are less likely to be subject to public control and scrutiny. In particular, these findings are consistent with previous studies, such as Song's (2022), demonstrating that public facilities are less likely to commit regulatory violations. While our study did not yield significant results about downward accountability among different types of providers, the results regarding upward accountability confirm that clients of the services perceived greater control exerted by public authorities in public facilities and publicly funded beds. Similarly to downward accountability, H3 is not supported when it comes to upward accountability.

Our analysis also shows that a better performance in response to COVID-19 has a positive and significant impact on the perception of upward accountability. That is to say, H4 is also supported since relatives who viewed the nursing home's response to COVID-19 as positive also perceived that public authorities exercised more control over the facility.

Furthermore, in line with the results obtained for downward accountability, our findings also support H5, indicating that a higher level of knowledge about the services has a positive impact on perceptions of upward accountability. This suggests that individuals with more knowledge about the functioning of the services are better equipped to understand and assess the efforts made by monitoring bodies to supervise and control them. Similarly to the results for downward accountability, the effect of formal regulation, H6, is not significant.

Regarding our control variables, the analysis shows that having previous experience of care homes negatively impacts the perception of upward accountability. This confirms previous studies of trust in services, which show that previous (negative) experiences with services can lower trust and raise critical awareness, which may lead to lower perceptions of upward accountability.

Robustness check analyses

As a supplementary analysis, we also conduct an additional regression analysis of the three dimensions of downward accountability (see Appendix 5). Since the variable of upward accountability has a normal distribution, we also perform linear regression analyses. In all these tests, our results remain robust and unaffected.

Limitations

In this section we discuss some limitations of our study. The first is the potential presence of endogeneity, wherein causal feedback loops or reverse causality may exist, but cannot be adequately addressed within the framework of a cross-sectional survey, and makes it challenging to establish the direction of causality. To mitigate endogeneity concerns and gain a deeper understanding of the variables under investigation, future research that uses longitudinal and experimental designs would be beneficial.

A second limitation is that of connecting our perceptual data to individual nursing homes. Song (2022, 11) has examined the effect of market competition/concentration on regulatory compliance, finding that in the for-profit sector, market competition is positively related to greater deficiencies, while public facilities 'are less likely to commit a health violation compared with for-profit facilities as market competition increases'. Although this variable might have an impact on accountability, we did not include it in our research due to data protection and ethics issues. We were unable to ask respondents for the name of the nursing home where their relatives reside, or its specific location. Therefore, further research is needed to contrast the effect of market concentration/competition on the accountability of the services. Further studies could also investigate de facto measures of accountability put in place by public bodies, as well as the perceptions of the providers of the services. Further research could also investigate de facto control mechanisms carried out by different forums (i.e. audit offices and family members).

A third limitation is the imbalance in the number of indicators used to measure downward and upward mechanisms. Our study offers a comprehensive measurement of the former (18 indicators), whereas only one indicator is included for the general perception of vertical control. The inclusion of diverse items in the information received was feasible due to the direct receipt of information by the participants. However, despite the limited nature of the question on vertical control, we deem it a valuable measure for analysing their perception of government control. Consequently, future research could go further by integrating additional dimensions of vertical mechanisms.

Finally, although it would pose challenges, future studies could also investigate the perceptions, assessments and preferences of the direct recipients of care, the residents themselves. Taking their assessments into account would represent an effort to empower elderly people living in nursing homes and to improve their control over the quality of the services provided to them (Mannheim et al. 2019). Such an approach could show slightly different results. For instance, the perceptions of residents are likely to be more strongly coloured by the their day-to-day interactions with the nursing home staff, while relatives may base their perceptions on information they receive through other channels, such as websites, emails or interactions with management. A study by Hasson and Arnetz (2011) indeed shows that -compared to their primary relatives –

caretakers are somewhat more positive about the quality of care in nursing homes. Future study could dissect whether this also affects accountability and its antecedents.

Conclusion

In this study, we have examined the determinants associated with both downward and upward accountability mechanisms in an under-investigated context: nursing homes. While many studies have researched accountability determinants in traditional government contexts among the general public (Aleksovska, Schillemans, and Grimmelikhuijsen 2019), not many studies have examined public service beneficiaries' actual experiences with accountability. Our study shows that in the context of nursing homes, downward and upward accountability mechanisms can complement each other under the same conditions. Consequently, a wider implication is that tensions arising from multiple accountabilities are, to some extent, avoidable in these services, as both forms of accountability share common determinants. Our study demonstrates that greater accountability towards relatives conveyed through substantive information about the services provided also influences their perception of accountability towards governments. If beneficiaries see that accountability is being provided to them, they are more likely to perceive that the nursing homes are also being accountable to governments.

In addition, shifting the focus to the beneficiaries of services in the nursing home context, we make four contributions to the literature. First, our study is innovative in accountability research because it focuses specifically on nursing home services, rather than the 'traditional' government or organizational approaches. Additionally, while recent research by Overman, Schillemans, and Grimmelikhuijsen (2021) has explored perceptions of accountability among public officials (the provider side of accountability), our study contributes by investigating the perceptions of a primary accountability forum, specifically the direct relatives of nursing home residents, who play a central role in providing and overseeing the care that their residents receive.

Second, our study contributes to understanding how their ownership type and funding arrangements of long-term care services can influence the different accountability mechanisms in place. This finding is in line with existing research that indicates that hybrid arrangements, such as privately owned facilities, tend to have lower levels of public control and oversight. Specifically, our findings are in line with Song (2022), who shows a lower occurrence of regulatory violations in public facilities. Although we did not identify significant differences in downward accountability by provider type, our results highlight the perception of greater upward accountability (control) among clients in public facilities and with publicly funded beds/places.

Third, our study shows that a historical contextual variable related to the COVID-19 response significantly impacts perceptions of both downward and upward accountability. Specifically, we observed that a better response to COVID-19 was associated with higher levels of perceived accountability directed towards relatives (downward) and also higher levels of accountability towards public authorities (upward). That is to say, when the response to the crisis was favourable, relatives perceived facilities as having higher levels of accountability towards public authorities and that they employed more effective mechanisms to provide them with information. It is important to note that perceptions of good performance during a crisis can be influenced by various factors, such as the

prompt implementation of safety measures and protocols. However, the evaluation of downward accountability specifically focuses on how nursing homes provide information to relatives and communicate essential aspects of service quality in their daily operations. Further longitudinal analysis will allow us to determine whether the effect of performance in the face of COVID-19 is sustained over time.

This presents a paradox. On the one hand, being accountable to relatives entails making negative reports on, for instance, COVID-related deaths. Nursing homes that were transparent in the first place might have communicated the numbers of COVID-related deaths better to their clients than less accountable nursing homes. In this context, accountability is not solely about highlighting positive aspects, but also about addressing shortcomings, ultimately contributing to a more comprehensive perception of accountability. On the other hand, our study suggests that as a result of perceiving an effective response to crisis situations, family members of residents may perceive nursing homes as being more accountable to both public authorities and themselves, since they have demonstrated their commitment to the safety and care of residents during a critical time.

Fourth, we also show that individuals who are more knowledgeable regarding the functioning of these services tend to provide more positive assessments of both the types of accountability that we examined. This suggests that individuals who possess a better understanding of their right to information are more likely to recognize the implementation of both downward and upward accountability. This indicates that people who possess a deeper understanding of how the services operate are better equipped to evaluate the efforts undertaken by providers and monitoring bodies to supervise and control them.

Based on the relatives' perceptions of nursing home services provided to their family members, our study provides practical implications, too. First, our research demonstrates that, a lack of public control in service provision can impact not only accountability directed towards governments but also accountability directed towards service beneficiaries. Hence, accountability reforms have the potential to benefit to both public organizations and beneficiaries. For instance, Relatives' knowledge of the functioning of these services, an indication of their social capital, can positively impact the assessment of upward and downward accountability arrangements. Secondly, the results also highlight the impact health care crises on perceived accountability of nursing homes. While, the COVID-19 pandemic may be a unique event and in itself not preventable, our findings do imply that the way nursing homes respond to such crises affect (perceived) accountability. Especially in times of crisis, service providers heed attention to accountability towards their residents.

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