Original Study

Inactive Residents Living in Nursing Homes and Associated Predictors: Findings From a Regional-Based, Italian Retrospective Study

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ABSTRACT

Objectives: It has been amply reported that nursing home (NH) residents are largely inactive, a condition that may further increase functional decline, behavioral disorders, and risk of death. To date, studies have mainly focused on individual characteristics that may decrease residents' involvement in activities. Therefore, the aim of this study is to describe the prevalence of inactive NH residents in an Italian context, identifying predictors of inactivity at the individual and NH levels.
Design: Retrospective regional-based study performed in 2014.
Setting: All NHs (n = 105) located in the Friuli Venezia Giulia Region, northeastern region of Italy.
Participants: A total of 8875 residents with at least 1 nursing assessment and living in an NH for at least 1 year.
Measurements: The dependent variable was inactivity in the last week, defined as the resident not being involved in any socially or individually based, or meaningful recreational (eg, gardening) activities. The independent variables were set at individual and NH levels. Aiming at identifying predictors of inactivity, a hierarchical generalized linear (mixed-effects) model incorporating both fixed-effect parameters and random effects, was performed.
Results: A total of 4042 (45.6%) residents were inactive during the week before the evaluation. At the resident level, those with severe cognitive impairment [odds (OR) 4.462, 95% confidence interval (CI) 3.880–5.132], unsociable behavior (OR 2.961, 95% CI 2.522–3.473), night restlessness (OR 1.605, 95% CI 1.395–1.853), lack of cooperation in daily care (OR 1.408, 95% CI 1.199–1.643), pressure sores (OR 1.314, 95% CI 1.065–1.622), depressive disorders (OR 1.242, 95% CI 1.089–1.416), and clinical instability (OR 1.110, 95% CI 1.037-1.188) reported an increased risk of being inactive. At the NH level, for each additional hour of care offered by professional educators, there was 1% less likelihood of inactive residents (OR .964, 95% .933-.996).
Conclusions: Approximately one-half of the residents in this study living in Italian NHs are inactive. Inactivity is significantly associated with the presence of severe cognitive impairment, behavioral disorders (eg, unsociability, night restlessness, and lack of cooperation in daily care), pressure sores, depressive symptoms, and clinical instability. Moreover, receiving care from professional educators whose aim in their training program and professional mission is to improve individual and social engagement, decreased the likelihood of resident inactivity.

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It has been widely reported that nursing home (NH) residents are largely inactive.[1–5] Gottesman and Bourestom[4] defined the concept of inactivity among NHs residents as the time spent doing nothing or engaging in passive activities, such as waiting, sleeping, and/or fidgeting. Several negative consequences have been documented among inactive NH residents, such as increased functional decline, increased behavioral disorders (eg, agitation, apathy),[6] and depressive symptoms,[7] which may also increase nursing staff workloads.[5] In contrast, high levels of engagement in both individually (eg, reading) and socially based activities (eg, group activities) have been associated with decreased agitation and psychotropic medications, increased resident quality of life[8–10] and satisfaction among resident families.[11]

In the first study available in the field conducted in the United States, Gottesman and Bourestom[4] reported that around 56% of the 1144 NH residents included were inactive; around 20 years later, Nolan et al[12] conducted an observational study on 49 residents in 2 different continuing care units in North Wales (United Kingdom), documenting that around 70% of them spent their time in passive activities. More recently, Edvardsson et al,[13] using a cross-sectional study, included 1266 residents from 156 residential elderly care units in Sweden, reporting that the prevalence of inactivity among the residents in the previous week had ranged from 38% to 87% of the time. More recently, den Ouden et al[5] observed 723 residents living in 7 NHs in The Netherlands, documenting that between 45% and 77% of time was spent doing little or nothing. The different occurrence of inactivity, usually expressed as the amount of time of the day doing nothing or engaging in passive activities, depends on the conceptual definition of inactivity adopted (eg, including,[5] or not, watching television[4]) and on the measurement method used (eg, questionnaire[13] or observation[4]).

Identifying predictors of resident inactivity offered by NHs has been the focus of several authors[6,14–18] who have identified to date mainly independent variables at the individual level. For example, a significant association between sensory (hearing, vision, communication),[17] cognitive impairment,[6,13,18] and resident inactivity has been documented. Moreover, some clinical conditions, such as depressive symptoms,[6,19] wandering behavior,[10] and dementia,[6,13,20] have been found to increase the occurrence of inactivity. However, to date, limited attention has been devoted to the role of NH-level predictors of resident inactivity on a large scale,[18] including a multilevel analysis of NH-facility levels variables and individual factors.

NH features may help in understanding a psychosocial outcome, such as social engagement expressed by activity participation.[18] Large NHs may have opportunities to offer organized social and recreational programs, whereas smaller facilities may be better at fostering close resident-staff relationships and friendships. Moreover, facilities with varying health care professionals possessing different competences may also vary in their capability to promote resident activity.[21]

Therefore, the general intent of the present study is to describe the occurrence of inactivity among residents living in NHs and identify predictors at the individual and NH levels.

Methods

Design and Setting

A retrospective, regionally based study design involving all 105 NHs located in a northeastern region of Italy was performed in 2014.

Participants

All residents who had lived in a regional NH for at least 1 year and who had received at least 1 nursing assessment was included in the study. No exclusion criteria were established.

Study Framework, Dependent, and Independent Variables

A study framework was designed and is shown in Figure 1.

Dependent variables

NH resident inactivity was the dependent variable. Residents were considered "inactive" when they were not involved in any socially based (eg, birthday parties, playing cards), individually based recreational activity (watching TV, reading books/newspapers, sewing), or in both socially and individually based meaningful activities, such as those reflecting resident's preferences and favorite pastimes (eg, gardening, participating in religious services).[22] The dependent variable data was extracted from the last assessment recorded in the regional database performed by trained registered nurses (RNs) through the Val.Graf tool[22] and measuring resident participation in the above-mentioned activities (yes/no) during the previous week.

Independent variables

The NH resident demographics and clinical data were also extracted from the regional database collecting assessments performed by the same trained RNs with the Val.Graf tool.[22]

The Val.Graf tool was developed in Italy in the early 1990s as a geriatric, multidimensional assessment instrument for evaluating clinical, psychological, and social conditions at different moments (1) at the residents' NH admission, (2) every 6 months, and (3) at the NH readmission for those residents transferred to a hospital. A revised version used in this study was modified in 2001.[22] Validity and reliability measures ranged from adequate to excellent in all dimensions.[22]

For the present study, the last available Val.Graf assessment performed in 2013 for each NH resident included was considered. In addition to age and sex, the following data were taken from the Val.Graf database.[22]

- Activities of daily living (ADL) independence, as measured using the Barthel Index[23] composed of 10 items. The total score ranges from 0 (totally dependent) to 100 (totally independent).
- Cognitive impairment defined as a loss of memory, of spatial orientation, of person recognition and of comprehension using the Cognitive Performance Scale (CPS).[24] The tool classifies 6 levels of cognitive impairment, from 0 (intact cognitive status) to 6 (very severe cognitive impairment). A cut-off of >4 was set for identifying those patients with moderate severe/very severe cognitive impairment.[24]
- Depression, as measured by the Depression Rating Scale (DRS).[25] The total score ranges from 0 to 14 and scores ≥3 indicate minor or major depressive disorder.[25]
- Pain, as measured using the Pain Scale,[26] ranging from 0 (no pain) to 3 (severe pain). Those residents reporting a score ≥1 were considered to be experiencing pain; in addition, data regarding the administration of antipain medication (yes/no) was also collected.
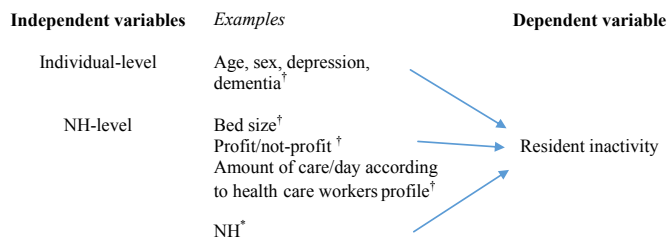- Pressure sores (yes/no) as defined by the European Pressure Ulcer Advisory Panel.[27]

Independent variables	Examples	Dependent variable
Individual-level	Age, sex, depression, dementia[†]	
NH-level	Bed size[†] Profit/not-profit[†] Amount of care/day according to health care workers profile[†]	Resident inactivity
	NH[*]	

Fig. 1. Framework of the study. [*]As a random effect. [†]As a causal effect.