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SENIORS LIVING IN RESIDENTIAL HOMES: A TARGET POPULATION TO IMPLEMENT ICOPE (INTEGRATED CARE FOR OLDER PEOPLE) PROGRAM IN PRIMARY CARE

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Abstract: *Background:* Few researches describe old people living in residential homes despite this population being reported to consume much of medical care. Our hypothesis is that many older people living in these structures are frail and that residential home may be targeted places for the implementation of strategy to prevent functional decline. *Objective:* Our goal is to describe the geriatric characteristics of older people living in residential homes. *Methods:* This study was a cross-sectional, observational survey carried out in residential homes in Toulouse (France). A questionnaire covering general informations about the residential homes and services offered to residents and a self-assessment questionnaire for all residents (including, FinD questionnaire for frailty, SARC-F for sarcopenia, loneliness, and depressive symptoms, fear of falling) were completed. *Results:* 1,274 older adults living in 29 residential homes received the questionnaire and 807 (63.3%) people participated (mean age; standard deviation, SD = 83.0; 9.5, female 74.5%). A large majority are not disabled (mean ADL score; SD = 5.4; 0.9), lived alone (83.9%) and suffer from loneliness (29.8%). More than half were positively screened for frailty (53.7%) and 37.2% for sarcopenia; 53.5% had depressive symptoms, and 59.1% reported a fear of falling. *Conclusion:* Our study suggests that prevalence of frailty in older people living in residential homes is high. This result supports that older people living in residential homes could be a target population to implement strategy to prevent functional decline.

Key words: Frailty, residential home, ICOPE, prevention.

Introduction

In France, residential homes are institutions for older people that can be described as intermediaries: they host older adults between the community-dwelling people who are mainly autonomous subjects and the Long-Term Care (LTC) residents where dependent older people live. Residential homes offer residents common and personalized equipment or services, which vary from one institution to another and whose use is optional. Older people who live there are considered institutionalized. Residential homes are frequently the first step before living in LTC Facilities (LTCFs), when higher level of care is needed. Resident in residential homes may own or rent their homes. Both family doctors and healthcare professionals (eg, nurses, physiotherapist) respond to their patients in the same way as in the community without a structured organization of care in these facilities as it exists in LTC Facilities (LTCFs). A French national survey reports that residential homes have 101,880 beds among the 727,930 places in all aged care facilities (1) (13.99% of all the places of institution for older adults). This survey reports that 77.3% of residents living in residential home are barely or not dependent on basic activities of daily living. Residents enter about 5 years younger than in the LTCFs (80 years and 8 months versus 85 years and 3 months). Clinical profile and health events of these residents are almost unknown in France and abroad. A recent study in the UK shows that the rate of transfer to the emergency room per year and by bed of older people living in residential homes is significantly higher than that observed in LTCFs (around 68% versus 49% respectively) (2). Other studies in Asia point out that the usual practice in residential homes is to hospitalize residents when an acute problem occurs (3).

This high rate of use of care services in a still autonomous population suggests that this population is frail and could therefore be a suitable population for the implementation of interventions to prevent functional decline. Research in Australia confirms that many subjects living in residential homes are frail (up to 60% using THE FRAIL-NH score) (4) and that their use of hospitalizations is high (5). The current organization of care in these facilities does not seem to be currently focused on strategies for detecting frailty or towards actions to prevent functional decline. However, observational data suggests that in residential homes, an environment conducive to the maintenance of functional capacities is associated with a lower prevalence of frailty (6), suggesting that lifestyle may influence the functional decline of these residents.

Our aim is to describe the geriatric characteristics of older people living in residential homes. Our hypothesis is that many older people living in these structures are frail

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and that residential homes may be targeted places for the implementation of strategy such as ICOPE (Integrated Care for Older People) to prevent their functional decline (7).

Methods

Population

This study is a cross-sectional, observational and descriptive survey of older people living in residential homes. LTCFs or nursing home settings were not involved in this work. Residential homes in the center and suburbs of Toulouse (South-West, France) were contacted by email and phone call and invited to participate in the study. The administrative directors of these facilities were met during a physical interview to explain the purpose of the investigation.

Procedure

Before data collection, an information meeting was held in each residence to inform residents and their families of the investigation. A poster for the residents, their families and the health care professionals involved was also placed at the reception of each facility. The data collection was carried out over a four-month period (from April 2nd to July 2nd, 2017) for all residential homes and for the resident. Residents could get help from a third party such as a family caregiver in the event of difficulties. A member of the research team (Gérontopôle of the University Hospital of Toulouse) was able, in a place that respected confidentiality, to help people if they had any trouble filling in the forms.

Variables of interest

Two questionnaires were filled out: the first questionnaire provided by the Administrative Director of the residential homes, covered general information about the facility and services offered to residents. This questionnaire provided information on the administrative characteristics of the residential home, the waiting time for the residents before entering the facility, the number of residents in the facility and the number of residents participating in prevention activities. Type of prevention activities (physical activity, nutritional activity, memory workshop, others) organized in the facility was collected.

The second questionnaire was composed of self-reported questions and scales, explained and provided by the administrative directors of the institutions to all their residents. This self-reported questionnaire was accompanied by an information leaflet. The self-reported questionnaire asked for: marital/living status (alone, spouse, other), age, sex, frailty screening (using the FiND (Frail Non-Disabled) instrument) (8), functional status (Katz ADL score for the 6 items of the basic activities of daily life (9) and the 8 items of the Lawton IADL for the instrumental activities of daily life) (10), fear of falling («Are you afraid of falling?» yes/no) and its impact (Does this fear lead you to reduce your activity? yes/no), memory complaint («Do you complain about memory? yes/no), depressive symptoms (Mini-GDS Scale) (11), sleep disturbances (Do you have sleep difficulties? yes/no), feeling of loneliness (Do you suffer from loneliness? yes/no), nutritional status (Body Mass Index (BMI) defined by weight divided by squared height; BMI of less than 21 was considered underweight), screening for sarcopenia (SARC-F Questionnaire) (12), hearing (Are you embarrassed to hear ? Due to hearing disturbances, are you embarrassed for the acts of everyday life) and visual disturbances (due to visual disturbances, are you embarrassed to distinguish faces? are you embarrassed to move? are you embarrassed for other activities?).

The questionnaire FiND (8) is a self-questionnaire with a very good ability to correctly identify frail elderly people living in homes. This questionnaire consists of 5 questions: A. Do you have difficulty walking 400 meters? B. Do you have difficulty climbing stairs? C. In the past year, have you unintentionally lost more than 4.5 kg? D. How many times in the last week have you felt that everything you did was an effort or that you couldn't go? E. What is your level of physical activity?

If $A+B \geq 1$, the individual is considered dependent. If $A+B = 0$ and $C+D+E \geq 1$, the individual is considered frail. If $A+B+C+D+E = 0$, the individual is considered robust. This questionnaire identifies seniors living at home with an increased risk of functional decline. FiND is a tracking tool to identify at risk subjects, with a pertinence close to the reference assessment tools such as the criteria of Fried's phenotype criteria.

The SARC-F (12) is a simple five-items questionnaire based on the cardinal characteristics or consequences of sarcopenia: Strength, Aids for walking, ability to Rise from a chair, and Climb stairs, and risk of Falls. The score ranges from 0 to 10. Subjects are considered sarcopenic if the score is ≥4 and the subject is considered non-sarcopenic if the score is 0 to 3 (12).

The Mini-GDS consists of 4 questions and has demonstrated excellent reliability for detecting depressive symptoms in older adults compared to the well validated 30 items GDS scale (11).

All information was provided anonymously and on a voluntary basis. This investigation has been validated by the Toulouse University-Hospital according to the French ethic and regulatory law (Registration number: RC31/17/0068).

Results

A total of 29 residential homes in Toulouse and the suburbs of Toulouse volunteered, 18 residential homes (with 3 establishments run by private commercial or associative groups), and 11 intergenerational facilities (i.e. apartments suitable for seniors). The admission period was more than 1 year for 83.6% of residents and more than 5 years for 31.01%. 44.1% of residents participate in prevention activities proposed by the facilities. These residents participate in balance and physical activity workshops (28.8%), memory workshops

(29.5%), nutrition workshops (4.9%) and other workshops (2.8%).

Table 1
Characteristics of the Population living in Residential facilities (n=807)

Characteristics of the population (n=807)	
Age (year mean ; SD, min-max)	83.0 (9.5 ;52.6-106.4)
Gender (female; n, %)	594 (74.5)
Lifestyle	
Alone (n, %)	646 (83.90)
With spouse (n, %)	88 (11.43)
Other (n, %)	36 (4.68)
Physical function	
Frailty (FiND questionnaire; n; %)	
Frail	410 (53.7)
Robust	32 (4.2)
Disabled	322 (42.2)
ADL score (mean, SD)	5.4 (0.9)
IADL score (mean, SD)	5.5 (2.2)
Fear of falling (n, %)	443 (59.1)
Reduced activity due to the fear of falling (n, %)	172 (25.9)
Cognitive status	
Memory complaint (n, %)	324 (41.6)
Psychological status	
Mini GDS score (/4; mean ; SD, min-max)	1.0 (1.2 ; 0-4)
Depressive symptoms (Mini GDS≥1) (n, %)	408 (53.5)
Sleep disorders (n, %)	192 (24.7)
Feeling lonely (n, %)	210 (29.8)
Nutritional status	
BMI (kg/m²; mean ; SD, min-max)	25.8 (5.0; 14.3-44.2)
BMI <21 (n, %)	101 (14.6)
BMI > 30 (n, %)	135 (19.0)
SARC F ≥4 (n, %)	291 (37.2)
Sensorial	
Visual disturbances (n, %)	
Are you embarrassed to distinguish faces?	55 (7.5)
Are you embarrassed to get around?	45 (6.3)
Are you embarrassed about other activities	117 (15.9)
Hearing problems (n, %)	
Are you embarrassed to hear	209 (31.3)
Are you embarrassed for the acts of everyday life	147 (22.1)

Notes. FiND, Frail Non-Disabled» [FiND] instrument; ADL, Activity of Daily Living; IADL Instrumental Activity of Daily Living; SARC-F Questionnaire that assessed Strength, Assistance walking, Rise from a chair, Climb stairs and Falls; GDS, Geriatric Depression Scale; BMI, Body Mass Index=Weight/Height².

A total of 1,274 older people received the questionnaire. It was completed by 807 people (63.3%). The response rate per residence varies from 29% to 100%. Resident characteristics are reported in Table 1. In our survey, the typical profile of an older adult living in a residential home is a 83.0-year-old woman, living alone, autonomous for the basic activities of daily life but having difficulties in 2 to 3 instrumental activities of daily life. More than once in two resident is frail. They are rarely robust. In this population, about 4 out of 10 people were positively screened for sarcopenia, 15% are malnourished (BMI<21) and 19% are obese (BMI≥30). Six out of 10 residents are afraid of falling and this fear reduces their involvement in activities in a quarter of cases. A memory complaint is reported by 41.6% of respondents, 24.7% have sleep problems. About one in two people have depressive symptoms and one-third of people complain of loneliness. 6.3 to 31.3% residents have sensory disorders (sight, hearing) that affect their daily life.

Discussion

In residential home, 53.7% of older adults are frail according to the FiND questionnaire. Prevalence of frailty has been reported to be between 3 to 20% in middle-aged and older community-dwelling Europeans (13). Frail older adults are exposed to various adverse events such as falls, hospitalizations (14) and to a rapid functional decline especially when the uncoordinated and fragmented care are provided (15). This makes the frail older population a target group for the organization of integrated care (16). Our survey shows that seniors living in residential homes are a target group for the organization of preventive measures. The various geriatric areas explored in our survey allow us to consider strategies for preventing functional decline. The lack of coordination of care by a team of caregivers, as it exists in LTCFs, should lead to consider relevant innovative models for primary care.

A care model that could be tested in such a frail, non-disabled population is the WHO Integrated Care for Older People (ICOPE) program for primary care and social services. This community approach initiates a personalized and integrated approach to maintaining the intrinsic abilities of older adults to prevent disability (17). ICOPE offers pre-established models for assessing, responding to and monitoring intrinsic capacities (mobility, vision, hearing, cognition, mood, nutrition) that complement traditional care for chronic diseases, with the aim of preventing dependency (Table 2). The screening test can be carried out by a health professional but also by self-assessment of the patient (or aid of a family caregiver) using a mobile application (App) or BOTFRAIL (conversational robot on the Internet) (18,19). We believe this approach would be particularly relevant in the context of residential facilities. Only 30% of residents participated in physical activity and balance or nutrition programs.

Our study presents the methodological limitations

Table 2
Screening Tool for the "Integrated Care for Older Persons" (ICOPE)

Intrinsic Capacities	Questions and tests
Cognitive status	• Remember three words: Flower, door, rice (for example) • Orientation in time and space: What is the full date today? Where are you now (home, clinic, etc.)? • Recalls the three words?
Mobility	Chair rise test: Rise from chair five times without using arms. Did the person complete five chair rises within 14 seconds?
Nutritional status	• Weight loss: Have you unintentionally lost more than 3 kg over the last three months? • Appetite loss: Have you experienced loss of appetite?
Visual impairment	Do you have any problems with your eyes: Difficulties in seeing far, reading, eye diseases or currently under medical treatment (e.g., diabetes, high blood pressure)?
Hearing loss	Hears whispers (whisper test) or Screening audiometry result is 35 dB or less or Passes automated app-based digits-in-noise test
Depressive symptoms	Over the past two weeks, have you been bothered by • Feeling down, depressed or hopeless? • Little interest or pleasure in doing things?

of a self-reported cross-sectional survey. The lack of data on comorbidities and the use of care services (such as hospitalizations or emergency room transfers) and the number of non-responder residents (36.7%) are limits of this research. However, there is currently little information to describe the population living in residential homes in France and our results support the data of the international literature (2, 3).

In conclusion, the elderly living in residential homes are mostly frail patients. Our work opens up opportunities for preventive strategies against functional decline on this population. In light of these results, future research should evaluate the implementation of the ICOPE program in residential homes.

Conflict of interest: All the authors declare no conflict of interest.

References

1. DRESS Survey 2015 https://drees.solidarites-sante.gouv.fr/IMG/pdf/14-10.pdf
2. Keevil VL, et al. Emergency hospital admissions in older adults from residential and nursing homes: frequency, characteristics and outcomes. JNHR 2020
3. J Kh Luk. End-of-life services for older people in residential care homes in Hong Kong. Hong Kong Med J 2018 Feb;24 (1):63-67.
4. Theou O, Tan EC, Bell JS, Emery T, Robson L, Morley JE, Rockwood K, Visvanathan R. Frailty Levels in Aged Care Facilities Measured Using the Frailty Index and FRAIL-NH Scale. J Am Geriatr Soc. 2016 Nov;64(11):e207-e212.
5. Theou O, Sluggett JK, Bell JS, Lalic S, Cooper T, Robson L, Morley JE, Rockwood K, Visvanathan R. Frailty, Hospitalization, and Mortality in Residential Aged Care. J Gerontol A Biol Sci Med Sci. 2018 Jul 9;73(8):1090-1096.
6. Zhu A, Yan L, Wu C, Ji JS. Residential Greenness and Frailty Among Older Adults: A Longitudinal Cohort in China. J Am Med Dir Assoc. 2020 Jun;21 (6):759-765.e2.) suggesting that lifestyle may influence the functional decline of these residents.
7. Sanchez-Rodriguez D, Annweiler C, Gillain S, Vellas B. Implementation of the Integrated Care of Older People (ICOPE) App in Primary Care: New Technologies in Geriatric Care During Quarantine of COVId. The Journal of Frailty and Aging. 2020:1.
8. Cesari M, Demougeot L, Boccalon H, Guyonnet S, Abellan Van Kan G, Vellas B, Andrieu S. A self-reported screening tool for detecting community-dwelling older persons with frailty syndrome in the absence of mobility disability: the FiND questionnaire. PLoS One. 2014 Jul 7;9(7):e101745.
9. Hartigan I. A comparative review of the Katz ADL and the Barthel Index in assessing the activities of daily living of older people. Int J Older People Nurs. 2007 Sep;2 (3):204-12.
10. Graf C. The Lawton instrumental activities of daily living scale. Am J Nurs. 2008 Apr;108(4):52-62.
11. Clement JP, Nassif RF, Léger JM, Marchan F. Development and contribution to the validation of a brief French version of the Yesavage Geriatric Depression Scale. Encephale. 1997 Mar-Apr;23(2):91-9.
12. Malmstrom TK, Miller DK, Simonsick EM, Ferrucci L, Morley JE. SARC-F: a symptom score to predict persons with sarcopenia at risk for poor functional outcomes. J Cachexia Sarcopenia Muscle. 2016 Mar;7(1):28-36.
13. Santos-Eggimann B, Cuénoud Patrick, Spagnoli Jacques, Junod Julien. Prevalence of frailty in middle-aged and older community-dwelling europeans living in 10 countries. J Gerontol A Biol Sci Med Sci 2009;64:675-81
14. Hoogendijk EO, Afilalo J, Ensrud KE, Kowal P, Onder G, Fried LP. Frailty: implications for clinical practice and public health. Lancet. 2019 Oct 12;394 (10206):1365-1375.
15. Clegg A, Young J, Iliffe S, Rikkert MO, Rockwood K. Frailty in elderly people. Lancet. 2013 Mar 2;381 (9868):752-62.
16. Sadler E, Potterton V, Anderson R, Khadjesari Z, Sheehan K, Butt F, Sevdalis N, Sandall J. Service user, carer and provider perspectives on integrated care for older people with frailty, and factors perceived to facilitate and hinder implementation: A systematic review and narrative synthesis. PLoS One. 2019 May 13;14(5):e0216488.
17. Cesari M, Araujo de Carvalho I, Amuthavalli Thiyagarajan J, Cooper C, Martin FC, Reginster JY, et al. Evidence for the Domains Supporting the Construct of Intrinsic Capacity. J Gerontol A Biol Sci Med Sci. 2018;73(12):1653-60.
18. Sanchez-Rodriguez D, Annweiler C, Gillain S, Vellas B. Implementation of the Integrated Care of Older People (ICOPE) App in Primary Care: New Technologies in Geriatric Care During Quarantine of COVId. The Journal of Frailty and Aging. 2020:1.
19. Takeda C, Guyonnet S, Sumi Y, Vellas B, Araujo de Carvalho I. Integrated Care for Older People and the Implementation in the INSPIRE Care Cohort. J Prev Alzheimers Dis. 2020;7(2):70-4.