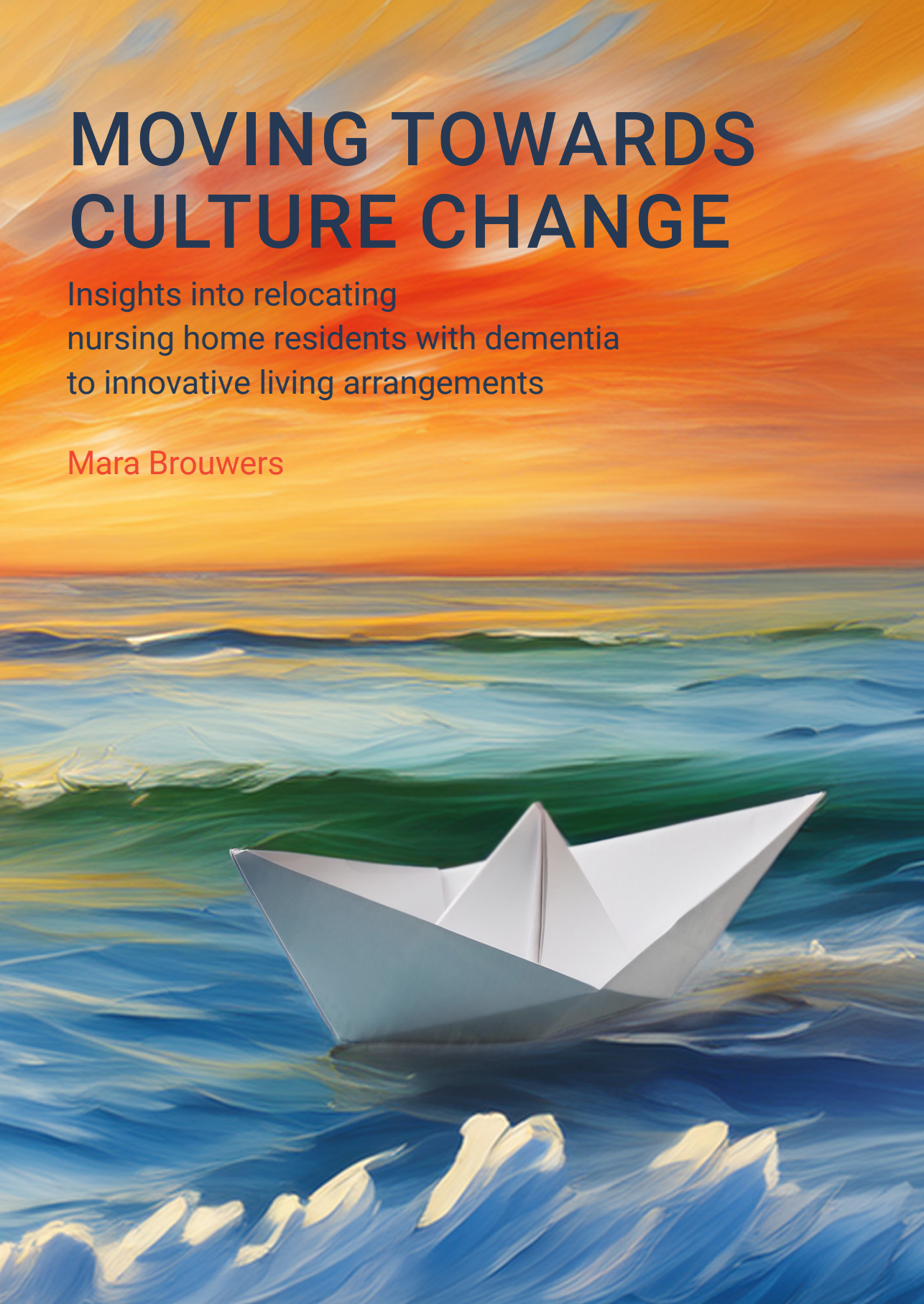
MOVING TOWARDS CULTURE CHANGE

Insights into relocating
nursing home residents with dementia
to innovative living arrangements

Mara Brouwers



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Promotor

Prof. dr. H. Verbeek, Universiteit Maastricht

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"Yesterday is history,

tomorrow is a mystery,

but today is a gift.

That is why it is called the present."

- *Master Oogway*

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Chapter 1

General introduction

Bertha has been living in a nursing home for 9 months. She has always been very active and loves to walk. Furthermore, being independent is important to her, but is becoming challenging as she has dementia. Her condition is worsening, meaning that she increasingly struggles with recognizing her surroundings and sometimes even with recognizing her own children. Her son and daughter have just received a message that the nursing home Bertha is living in is outdated and will be closed down. She needs to move to a new setting, which aims to provide more person-centred care. This new building is purpose-built like an archetypal house, with a large outdoor area and facilities such as a music room and the presence of animals. Furthermore, staff members will have integrated tasks and form a household with the residents. Although the staff members and Bertha's son and daughter are happy that Bertha and her fellow residents can leave the old building, as it is outdated, they are also worried. Bertha's son and daughter are wondering how they are going to tell her about this relocation. Will she be able to understand what is about to happen? The staff members worry about the new way of working and how they can best prepare all the residents. Bertha herself notices that something is about to happen, and experiences several emotions, ranging from being content when her children describe the new location to her, to being stressed when her routines are disrupted as staff members are packing her belongings and preparing the relocation.

The story of Bertha demonstrates that relocating can be an impactful event, and it is a major life event. Major life events can lead to daily stress and related psychological symptoms.[1] One of the main factors in predicting difficulties in coping with a relocation is age.[2] When older adults with complex care needs have to relocate, this process can be challenging because nursing home residents are a vulnerable population, requiring care and support due to physical and/or psychogeriatric conditions. They often do not voluntarily make a decision but are dependent on their environment (e.g. family).[3] A Dutch documentary called *'uitgewoond'* (worn out), recorded the relocation of nursing home residents and clearly showed the possible negative consequences on residents. This documentary triggered parliamentary questions in the Netherlands and emphasized the societal relevance of this topic. A literature search showed that the issue of relocations within long-term care is an understudied topic and prompted the start of the RELOCARE research consortium.[4] This consortium consists of the six university networks on care for older people (i.e. Maastricht, Nijmegen, Leiden, Amsterdam, Tilburg, Groningen), and specifically aims to gain more insight into the scope and effects of relocations within nursing home care.[5]

Currently, nursing home buildings in long-term care are increasingly becoming outdated and no longer meet the current needs of residents. Therefore, long-term care organizations often choose to redesign locations or build new facilities. This, in turn, leads to the reconstruction of regular nursing homes to nursing home environments that are intended to be more suitable to the norms and values of current nursing home care, so-called 'innovative living arrangements'. Although there is some research available on the impact of relocations on residents within long-term care, it is yet unknown what the impact on residents is when they are part of a group relocation to an innovative living arrangement.

Therefore, the aim of this dissertation is to gain more insight into relocations from regular nursing homes to innovative living arrangements. This chapter will introduce the development of nursing homes in the Netherlands, the care environment and innovative living arrangements, and what is known about relocations within long-term care. The final paragraph presents the aims and outline of this dissertation.

The development of nursing homes in the Netherlands

In 2022, 20 per cent of the Dutch population was 65 or older.[6] This percentage is above average compared to the world population, where 9.3 per cent was aged 65 or older in 2022.[7] In 2024, more than 128.000 individuals in the Netherlands lived in a nursing home.[8] A nursing home is a facility that offers 24-hour care for vulnerable persons who need help with activities of daily living and who have complex health needs, either physical, medical or mental.[9,10] Over half of the residents in nursing homes have dementia.[11] In 2020, there were over 50 million people worldwide living with this condition and it is predicted that this number will almost double every 20 years, meaning that 82 million people will live with dementia in 2030, and 152 million in the year 2050.[12] This makes dementia one of the biggest challenges within nursing home care. It is a progressive disease characterized by several symptoms, such as difficulties with memory, language, problem-solving and other cognitive skills. Due to these symptoms, the person with dementia experiences difficulties with performing everyday activities.[13]

In the Netherlands, most nursing homes were developed around 1950 and later, although there are known cases of nursing homes earlier in time. Nursing homes were developed due to an increase in the number of older adults who were in need of care, and to societal changes, such as the disappearance of three-generation households where older adults live together with children and grandchildren.[14] Nursing homes were originally founded out of charity, for older adults who were sick and did not have the money or social network to provide for themselves.[15]

Rules in those houses were very strict and there was often a lack of privacy.[15] Over the years, nursing home care in the Netherlands was still not regarded in a particularly positive light. There were concerns regarding the quality of care and quality of life of residents living in a nursing home.[15,16] In response to this negative view on traditional nursing homes and care, there has been an increased focus on improving the quality of care in nursing homes. In later years, Dutch policy developed several programmes in order to improve long-term care. In 2015, the Dutch government introduced the 'Waardigheid en trots' (Dignity and Pride) programme, which aimed to improve quality of care and work.[17] In 2017, this programme was complemented by adding a new quality framework consisting of several goals that support person-centred care, such as more time and attention for the resident, but also skilled caregivers and creating an environment where care can continuously improve through learning and innovating.[18] To ensure that long-term care is future-proof and sustainable the program living, support and care for older adults (programma wonen, ondersteuning en zorg voor ouderen, WOZO)[19] and the program integral care agreement (integraal zorgakkoord, IZA)[20] were developed in 2022.

These developments are in line with an ongoing culture change in long-term care, where there is a shift from viewing nursing homes as health institutions to seeing them as person-centred homes.[21] Traditionally, nursing homes resembled a medical model, with a focus on physical care needs and keeping residents safe.[22] Later, nursing homes became more person-centred. In person-centred care, more holistic care is provided, with an emphasis on respect (e.g. providing choice and maintaining residents' dignity) and the self-determination of residents.[23] Studies show promising outcomes for residents when implementing person-centred care, such as an improved quality of life and a decrease in neuropsychiatric and depressive symptoms.[24]

Key elements of culture change in general are: 1) redesigning the workforce (e.g. 'flattening' the hierarchy, creating self-directed work teams); 2) providing resident-centred, individualized care (e.g. empowering the residents' identity and privacy); and 3) improving residents' freedom of choice (e.g. maintaining the autonomy of residents).[22] Most studies that looked into the impact of nursing home culture change found a positive impact on residents, staff members and family.[25] Residents' outcomes emphasized a positive effect of culture change on quality of life, such as decreased depression and anxiety and enhanced social interactions and neuropsychiatric functioning. Furthermore, staff experienced improvements in outcomes such as job satisfaction and autonomy, stress levels and communication skills. Family experienced an increase in satisfaction and perceived a higher quality of care. When looking at broader

organizational outcomes, culture change leads to improved occupancy rates, reduced staff turnover, and enhanced quality indicators.[25]

This culture change is also incorporated in Dutch policy, which developed a generic compass in 2024 concerning care at home or in a nursing home. This compass consists of several building blocks that enhance the quality of care and living for individuals with a care need. These building blocks focus on knowing the wishes and needs of care recipients, building sustainable networks, both informal and formal, and creating an environment where care can keep on improving by ensuring workflow is at its most effective and gaining insight into quality of care and how to optimize this.[26]

The care environment and innovative living arrangements

Studies show that the environment of nursing homes influences the well-being of residents. The environment can be divided into the physical environment, the social environment and the organizational environment.[27] The physical environment includes everything from interior design to outdoor areas and sensory elements. All these elements can have either a positive or negative impact on residents, depending on how the physical environment is shaped. For example, a homelike environment is associated with an increase in well-being, compared to a more traditional institutional environment.[28] How the environment is designed can have an influence on the sense of at-homeness that residents experience.[29] The social environment includes how residents interact with others in the environment, from other residents, to staff members and the wider community. Caregivers (either formal or informal) play a crucial role in maintaining the self of residents (e.g. taking care of themselves physically, mentally, and spiritually) and enabling residents to make sense of the environment and interactions within it.[30] Furthermore, when staff members engage in relationship-centred care (e.g. when staff take the values and beliefs of residents into account in day-to-day life) there is an increase in shared decision-making, where staff, family and residents together make care-related decisions.[31,32] The organizational environment focuses on how care is organized and what culture the organization adopts (e.g. values, expectations, and attitudes). Traditional organizational structures can constrain the ability to engage in culture change.[33]

In order to better support the culture change movement, new living arrangements are being developed, so called innovative living arrangements. These do not only aim to change the physical environment, but also the social and organizational environment. In order to successfully implement a new culture, being flexible and perhaps even bending or changing

existing rules and regulations is helpful.[34] For example, staff members of organizations that looked beyond care tasks and stimulated personalized care provision were more satisfied with their job.[35] Globally, more and more alternatives are being developed that radically change the environment in comparison with traditional nursing homes. How these alternatives are operationalized is diverse, ranging from an emphasis on creating a small-scale and homelike environment to an emphasis on incorporating nature.[36-40] Research into the impact of these innovative living arrangements shows promising results, such as a reduction in anxiety, more social relations and a more positive affect in residents.[41,42] In addition, residents were more likely to be engaged, active and showed an increase in social interaction. Overall, the quality of life of residents seemed to improve.[39,43-46] Other stakeholders, such as family caregivers and staff members, also reported positive experiences with innovative living arrangements. Families experienced improved contact and staff experienced an increase in job satisfaction, motivation, autonomy, and social support.[45,47-49] However, it is unknown which elements of these innovative living arrangements lead to these positive outcomes.

Relocations within long-term care

As new initiatives often aim to mirror successful elements of these innovative living arrangements, old buildings are reconstructed or new buildings are developed. This in turn leads to an increase in relocations. Older adults living in nursing homes often experience multiple relocations. A relocation is defined as 'moving from one environment to another for various reasons'.[50] Older adults can experience one or more of the following types of relocating within long-term care: 1) interinstitutional (i.e. relocation from one institution to another); 2) intra-institutional (i.e. relocation within a facility); and 3) residential or institutional (i.e. relocation from home to an institution or vice versa).[50] These relocations can be either individual (e.g. from home to a nursing home, to another ward, to a hospital)[51] or as a group. When a nursing home is reconstructed or closed, both residents and staff move together, which is called a 'mass interinstitutional relocation'.[52] This dissertation focuses on mass interinstitutional relocations from regular nursing homes to innovative living arrangements.

Every relocation process typically consists of three phases: a pre-transition phase (i.e. preparing/anticipating on the relocation); a mid-transition phase (i.e. the actual relocation); and the post-transition phase (i.e. adjustment and acceptance of the new living situation).[53] When a mass interinstitutional relocation takes place, this does not only affect the residents. In nursing home care, residents, family and staff work closely together in order to optimize daily

care.[54] As family and staff are actively involved in the daily life of residents, a mass interinstitutional relocation affects them as well. Research that focuses on relocations within regular nursing home care shows that relocating can have a negative impact on the physical, mental, behavioural and functional well-being of residents.[55-59] The perceived control that residents experience can have a moderating effect on these outcomes. When residents had control over the relocation process, this positively affected cognition and relocation adjustment.[60] Poor involvement in the relocation process was associated with several negative health outcomes (e.g. an increase in falls, pressure sores, diseases, death rates and hospital admissions) and negative psychological outcomes (e.g. as an increase in depression, and a deterioration of cognition, social engagement, mood and behaviour).[57,61] Furthermore, family caregivers often experience a relocation process as chaotic – they can feel deceived (e.g. they did not have any choice regarding facilities located closer to their homes) and are concerned about their relative.[57,62] However, they also expressed feelings of relief as they often felt that the living situation of their family member was improved (i.e. when moving from the old to the new nursing home).[57] Staff members experienced a lack of involvement, increased workload, increased stress and an increased sense of isolation and uncertainty.[52,62,63]

The above studies show that relocating can have a significant impact on residents, family and staff. However, very little is known about relocations from regular to innovative living arrangements. Although innovative living arrangements show promising results in terms of well-being, their impact on residents, family and staff when relocating to such an innovative living arrangement remains unclear.

AIMS AND OUTLINE

Aims

This dissertation aims to contribute to the understanding of the relocation process towards innovative living arrangements and how it impacts residents, family members and staff. Specifically, this thesis aims: 1) to develop an overview of innovative living arrangements described in the literature; 2) to gain insight into the impact on residents when relocating; and 3) to gain insight into the experiences of residents, their family caregivers and staff members with these relocations. As the current long-term care landscape is experiencing a global culture change, it is important to gain more insight into the relocation process from the regular (often outdated) nursing homes to the newly built or reconstructed innovative living arrangements. Gaining more insight into the impact of these relocations on residents allows care organizations

and policymakers to adjust the relocation strategy in order to diminish this impact. Furthermore, gaining more insight into the experiences of all stakeholders enables practitioners to optimize the relocation process and identify facilitators and barriers that exist throughout this process.

Outline

Chapter 2 presents a scoping review resulting in an overview of innovative living arrangements identified in the literature. Chapter 3 reports on the findings of a longitudinal observational study on depressive symptoms, aspects of daily life, cognitive functioning and dependence in activities of daily living in residents throughout the relocation process from a regular nursing home to an innovative living arrangement. Chapter 4 shows the results of a qualitative study that explores the experiences of residents with relocating from a regular nursing home to an innovative living arrangement. Chapter 5 reports the results of a qualitative study that examines the experiences of family members of relatives that are relocating. Chapter 6 presents a qualitative study investigating the experiences of staff members that are relocating together with the residents from a regular nursing home to an innovative living arrangement. In chapter 7 the main findings of all studies are summarized, followed by a discussion of the methodological and theoretical considerations, implications for research, and strengths and limitations. This leads to recommendations for further research and practice.

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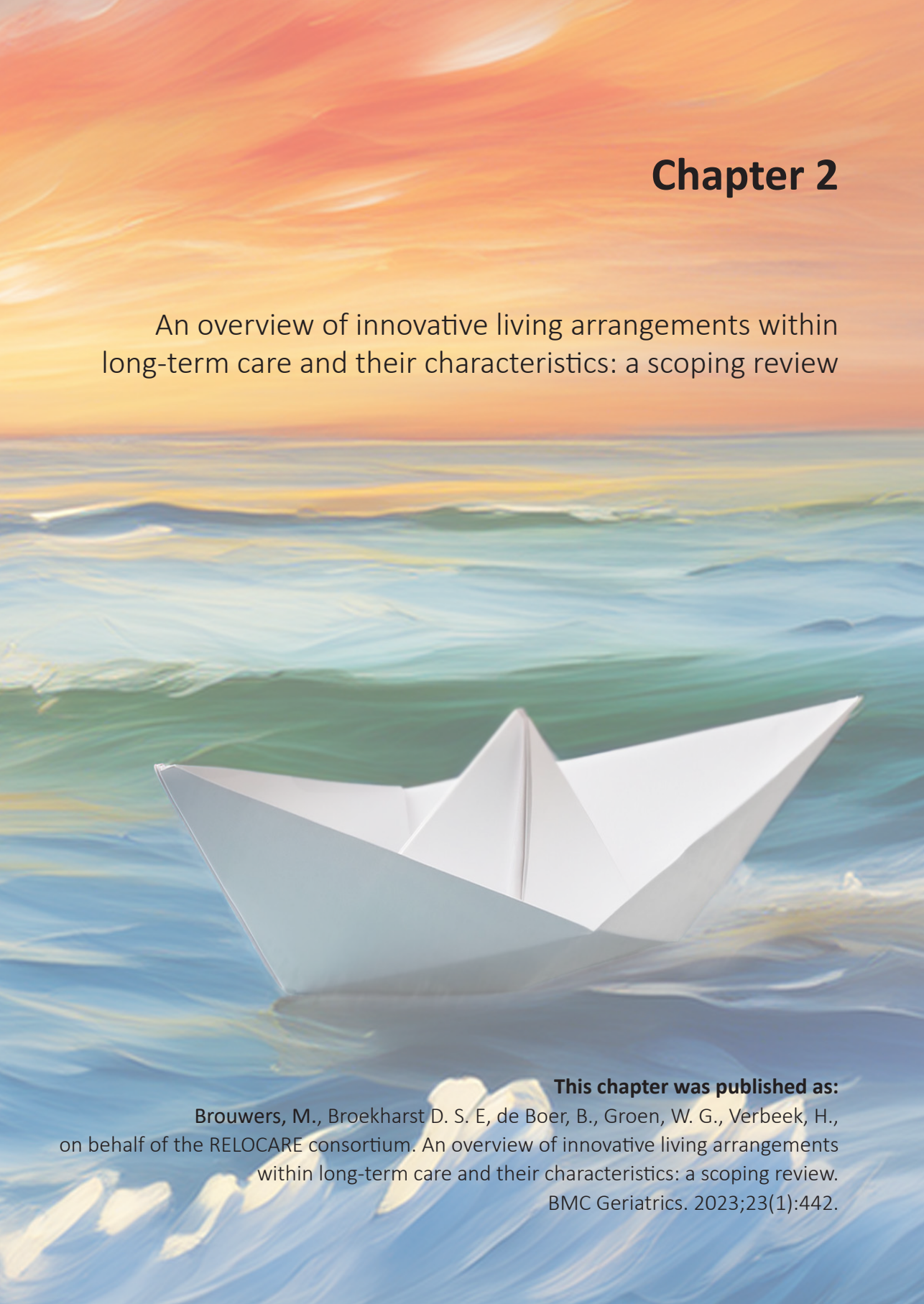
2

Chapter 2

An overview of innovative living arrangements within long-term care and their characteristics: a scoping review



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ABSTRACT

Background Within long-term care, a culture change (e.g. focus on increasing autonomy in everyday life) is leading to the development of innovative living arrangements for older adults. Insight into characteristics of innovative living arrangements, which are described as an alternative to regular nursing homes, is lacking. This review aims to provide an overview of innovative living arrangements and to describe their defining characteristics.

Methods A scoping review was performed following the framework of Arksey and O'Malley. The preferred reporting items for systematic reviews and meta-analyses with extension, for scoping reviews (PRISMA-ScR) was also followed. The databases PubMed, PsycInfo, CINAHL, and Web of Science were searched. Articles, published between 2012 and 2023 were included when they presented an innovative living arrangement as an alternative to regular nursing homes. A thematic analysis was performed, describing the physical, social, and organizational environment of the innovative living arrangements.

Results Fifty-six articles were identified describing seven types of distinct innovative living arrangements: small-scale living, the Green House model, shared housing arrangements, green care farms, dementia villages, group homes, intergenerational living, and an 'other' category. The themes included supporting autonomy and creating a small-scale and/or homelike environment, which were emphasized in most innovative living arrangements. Other themes, such as involvement of the community, focus on nature, integration of work tasks, and involvement of family members, were emphasized in a subsection of the described living arrangements. Twenty-eight articles reported on the effects of the innovative living environment on residents, family members, or staff members. Most articles (N=22) studied resident-related outcomes, focusing mainly on quality of life and aspects of daily life.

Conclusion More insight into the mechanisms of the social and organizational environments is needed, which may lead to greater transparency and homogeneity regarding the description of living arrangements. This review shows that more knowledge is needed about the potential key elements of innovative living arrangements, especially related to their social and organizational environment. This may provide a better guide for developers within long-term care.

Keywords: *Innovative living arrangements, innovation, long-term care, 24-hour care, nursing home care, older adults, scoping review*

BACKGROUND

In long-term care, during the past decades, there has been a shift in perspective from a medical approach (e.g. predominant focus on physical care needs) to a more psychosocial approach (e.g. primarily focus on quality of life).[1,2] In nursing homes, the traditional focus has primarily been on quality of care and health outcomes. As a consequence there has been an increased orientation towards physical care needs rather than on improving or maintaining quality of life.[3] This medical approach is reflected by the care environment of traditional nursing homes, which are often closed environments, isolated from the community, leading to residents being largely inactive throughout the day.[4] However, residents living in an environment that is less constrained may provide the residents with opportunities to maintain meaningful relationships.[5]

The limitations of traditional nursing homes are increasingly being recognized and are leading to a change in culture, one that promotes a resident-directed approach as well as emphasis on quality of life. New insights show that the physical, social, and organizational environment of living arrangements and their interplay are important for achieving positive outcomes for residents.[6] Consequently, innovative living arrangements, which aim to better fit this culture change, have been, and are being, developed. These innovative living arrangements attempt to drastically change the physical, social, and organizational environment to create a better person-environment fit with the aim to improve functioning and quality of life. Examples of innovative living arrangements are, for example, small-scale living (e.g. a joint household with small groups of residents and a fixed team of care staff, centered around household task)[7] or green care farms (e.g. a homelike care environment where agricultural activities are combined with care activities).[8]

The design of the physical environment can be viewed as a therapeutic resource in itself (e.g. facilitating activities indoors and outdoors) that promotes well-being and quality of life among older people.[9,10] Furthermore, optimizing the social environment and providing person-centred care may also be related to an increase in quality of life.[11] Staff members (e.g. care staff, therapists) play an essential role in supporting the residents' independence, as they can guide the environment and interactions in a way that stimulates individuality and independence (e.g. empowering residents, avoiding labelling, getting to know residents personally).[12] Lastly, optimizing the organizational environment (e.g. supportive management, and empowerment of staff members) may relate to a better quality of care in nursing homes.[13] Positive changes in

the work environment (e.g. supporting quality of care and ensuring health and personal well-being) seem to result in better teamwork, increased continuity of care, and better resident outcomes.[14]

Despite the fast development of innovative living arrangements, research concerning their effectiveness with regard to improving functioning and quality of life is scarce and shows mixed results. There are some indications that innovative living arrangements lead to better outcomes (e.g. greater job satisfaction, social engagement among residents, satisfaction with care of residents, and physical activity of residents).[8,15-17] Other articles, however, have not found such effects.[17-20]

Authors have described various innovative living arrangements, but their defining characteristics remain unclear. One review has already looked into innovative living arrangements, but the authors focused solely on small-scale living environments.21 This means that living arrangements offering an alternative to regular nursing homes that are not small-scale were excluded, although they might offer an innovative alternative to regular nursing homes. A complete overview of innovative living arrangements is lacking and more insight is necessary into the components of innovative living arrangements that offer an alternative to regular nursing homes. Therefore, the aim of this scoping review is to provide an overview of the literature concerning innovative living arrangements that are presented as an alternative to regular nursing homes. Furthermore, we aim to describe the defining characteristics and overarching themes addressed by these innovative living arrangements.

METHODS

A scoping review was conducted following the five stages described by Arksey and O'Malley.[22] Furthermore, to increase reliability and transparency, the preferred reporting items for systematic reviews and meta-analyses with extension, for scoping reviews (PRISMA-ScR) was used; see Supporting File 1 for the word file PRISMA-ScR Checklist.[23]

Stage 1: identifying the research question

The following research questions were formulated: What innovative living arrangements are presented in the literature that offer an alternative to regular living arrangements? What are the defining characteristics of these innovative living arrangements?

Stage 2: identifying relevant studies

To identify potential studies, four electronic databases were searched: PsycInfo, CINAHL, PubMed, and Web of Science. The word file containing the full search string can be found in Supporting File 2. The PCC (population, concept, and context) mnemonic was used to build the search string.[24] The search terms included key terms related to the target group (e.g. older adults), established 'innovative' living arrangements (e.g. green care farms), and a combination of facility names (e.g. nursing home) and terms related to innovation. Additionally, for each of these key terms, the plural tense and conjugates were also included. A librarian checked and finalized the search string for all included databases. Our first search was performed on 5 July 2022. However, to make sure the review was up-to-date, an update was performed on 22 May 2023. Additionally, reference lists of all included articles and reference lists of reviews were searched to identify additional potentially relevant articles. When an article referred to another article for the definition of a specific living arrangement and it was traceable and relevant, the article could still qualify

Stage 3: study selection

Articles published in the Dutch or English language between 2012 and May 2023 were included. As the purpose of this review was to identify recent developments within the long-term care landscape, this review focuses on articles published in the last decade. Articles were included if they: (1) consisted of original research articles describing primary data; (2) described a living arrangement as an alternative to regular nursing homes that offer 24-hour care; (3) presented a description of an innovative living arrangement; (4) described an innovative living arrangement that offers 24-hour care (psychogeriatric as well as somatic care needs) to older adults with complex care needs. An article was excluded when: (1) it did not present original data (e.g. opinion paper); (2) the innovative living arrangement described did not offer 24-hour long-term care; (3) the described innovative living arrangement was not yet operational; (4) the living arrangement focused on short-term stay, rehabilitation, or hospital stay. See Table 1 for overview of the inclusion and exclusion criteria.

All articles were imported into EndNote[25] and Rayyan review managing software,[26] which were used for the remainder of the screening process. Both the first author (MB) and a fellow researcher (DB) independently screened the articles based on their titles and abstracts. Before the actual screening process, about 50 articles were test-screened to make sure all in- and exclusion criteria were clear. In the second phase, both researchers independently screened

the full-text articles and again determined whether the articles met the eligibility criteria. Any discrepancies between their outcomes were discussed and resolved by re-evaluating them together against the criteria and, if necessary, by discussing the articles with the entire research team to reach a consensus.

Table 1 Inclusion and exclusion criteria

PCC element	Inclusion criteria	Exclusion criteria
Population	Older adults with a complex care need, in need of 24-hour care.	Participants that do not have a complex need, are not in need of 24-hour care, or are young.
Concept	Long-term care facilities that offer 24-hour care to older persons with a complex care need. This entails 24-hour care in both psychogeriatric, as well as somatic care needs.	Care concepts that do not offer long-term 24-hour care (in psychogeriatric needs and ADL assistance) or care concepts that offer 24-hour care to adults or youth.
	Long-term care facilities that offer long-term care, so care for an extensive period of time, to older persons.	Care concepts that provide acute (or secondary acute) care, such as hospitals and revalidation centers.
	Long-term care facilities that are presented as different/innovative in comparison with traditional 24-hour long-term care.	Traditional long-term care facilities or implemented interventions within existing traditional long-term care facilities.
	The facility has to be operational.	Care concepts that are not yet operational and present possible frameworks or best practices.
Context	Long-term care facilities for older adults	Short-term care, such a rehabilitation or hospital stay, or long-term care for a group, other than older adults in need of 24-hour care.

Stage 4: charting the data

A data extraction form was developed. The form included: (1) an extensive description of the innovative living arrangement: name; location; the number and characteristics of residents; the number of units/buildings; a general description; and a description of the physical, social, and organizational environment; (2) the main characteristics of the article: title; date; authors; research question(s); and study design (i.e. observational, quasi-experimental, experimental, and qualitative); (3) sample and sample characteristics; data collection method; and description of data analyses; (4) the primary study outcomes.

Stage 5: collating, summarizing, and reporting the results

Data analysis consisted of conducting a thematic analysis[27] of the descriptions of the innovative living arrangements. The data was analyzed following the six phases of Nowell, Norris.[27] First, the researchers familiarized themselves with the included articles by reading them thoroughly. Second, an extensive description of the innovative living arrangements was created based on the various descriptions in the individual articles. Specifically, the physical, social, and organizational environments were described and presented in a table. The concepts were grouped into overarching living arrangements, based on overlap in their description. Then the components mentioned in the descriptions were coded. Third, these codes were grouped into overarching themes (e.g. homelike environment, community involvement, etc.). Fourth, all themes were discussed with the last author. Fifth, based on these discussions, the themes were further defined and renamed in such a way to capture the essence of the theme. Last, all themes were described in a report, leading to the results section.

RESULTS

In total, 7616 articles were identified. After removal of all duplicates, 5186 articles were included for screening. Figure 1 presents the PRISMA 2020 flow diagram[28] showing the search results. Title and abstract screening have led to 173 articles eligible for full-text screening. Evaluation of these articles according to the inclusion and exclusion criteria resulted in the inclusion of 56 articles suitable for the scoping review. The snowballing method did not lead to identification of new articles.

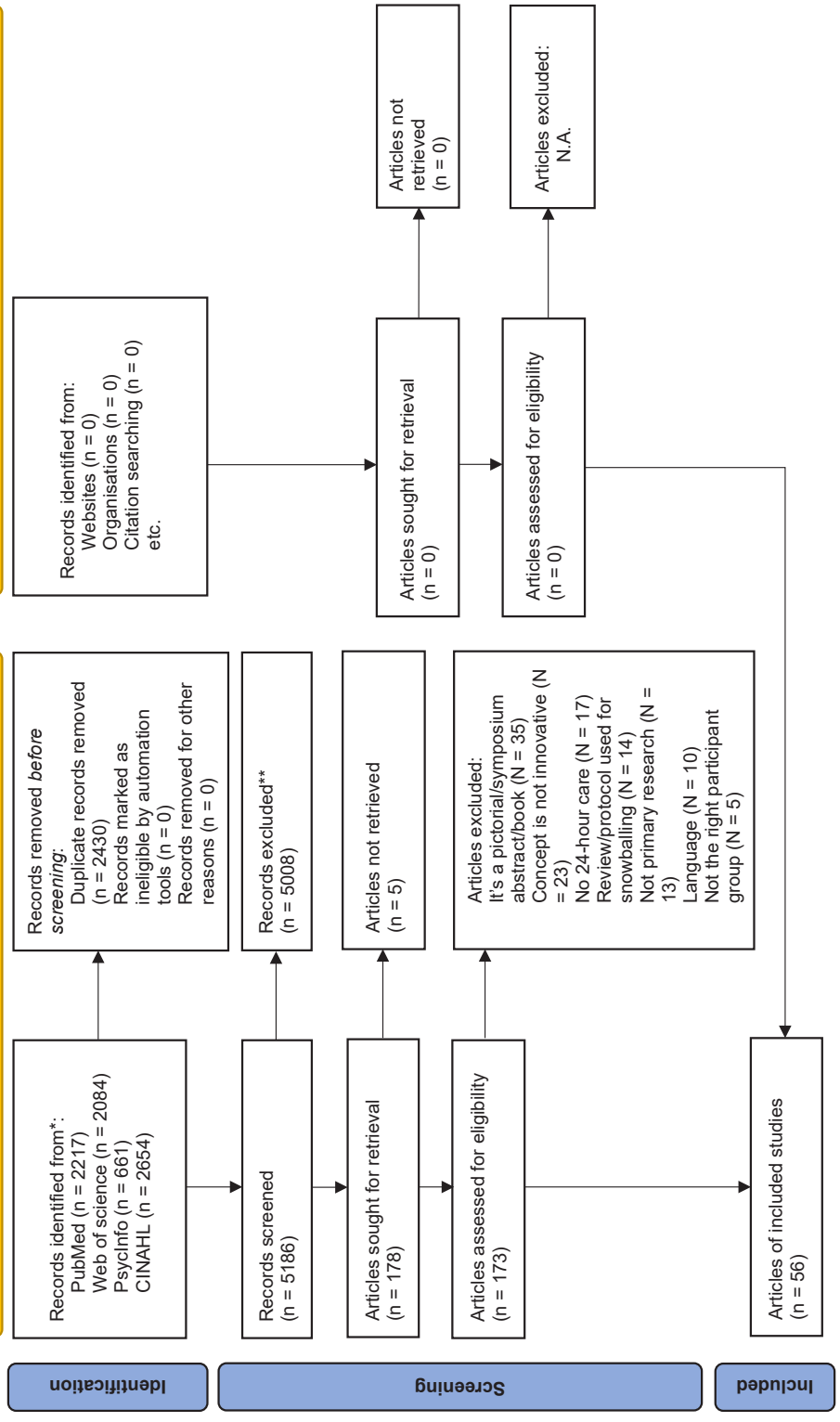

Fig. 1 Flowchart data-selection process.

Finally, 56 articles were selected to answer our research question. These articles described a total of seven distinctive innovative living arrangements: (1) small-scale living,[15,16,18,29-39] (2) the Green House model,[40-47] (3) shared housing arrangements,[48-54] (4) green care farms,[20,55-61] (5) dementia villages,[40,62-66] (6) group homes,[67-69] and (7) intergenerational living.[70-72] Some articles, however, could not be grouped into one overarching living arrangement because they did not describe the same overarching elements (a household model of residential aged care,[73] household model units,[74,75] intensive service housing,[76] a non-traditional residential care facility,[77] the Woodside place model,[78] a small-scale homelike unit,[79] and a homelike dementia care facility[80]) and were described as an 'other' category. An overview of the identified types of innovative living arrangements and their characteristics is provided in Table 2.

Study characteristics

Studies on innovative living arrangements were performed in the following countries: the Netherlands (N=26), the United States (N=8), Germany (N=8), Belgium (N=4), Japan (N=3), Denmark (N=2), Australia (N=2), Ireland (N=2), Canada (N=2), Finland (N=1), France (N=1), and China (N=1). The included articles consisted of 25 qualitative studies, 3 observational quantitative studies, and 28 (quasi-)experimental quantitative studies. In general, 28 quantitative studies were performed, focusing on the effects in small-scale living (N=11), the Green House model (N=3), shared housing arrangements (N=5), green care farms (N=3), group homes (N=2), and the 'other' category (N=5). Most articles focused on quality of life (N=10), physical health (N=8), job characteristics (N=6), and variables related to social engagement/activities of daily life (N=6).

Table 2. An overview of the identified types of innovative living arrangements and their characteristics

Living arrangement	Articles; Country	Number of residents	Articles design	General description	Physical environment	Social environment	Organizational environment
Small-scale living	14 Articles [15, 16, 18, 29-39]; the Netherlands, Belgium	6 -16 residents per household	(Quasi-) experimental quantitative (N = 11)[15, 16, 31-39], Observational quantitative (N = 1)[29], Qualitative (N = 2)[18, 30]	A small group of older people forming a household together in a homelike environment. Normalization of daily life is emphasized, by supporting their capabilities and focusing on meaningful activities (e.g. social participation and household chores).	The facility resembles an archetypal house, with homelike features (e.g. a kitchen, living room, single bedrooms, and an entrance).	Daily household tasks are centred around activities of daily life (e.g. doing laundry, preparing meals together, and cleaning). Daily life is largely determined by the residents, family caregivers, and nursing staff. There is more personal contact due to the fixed team of nursing staff and person-centred care.	The tasks of staff members are integrated, meaning they carry out domestic, social, and recreational tasks in addition to care tasks. There is often a fixed team of staff members that take care of the residents.
Green House model	8 Articles [40-47]; United States	8-12 residents per household	(Quasi-) experimental quantitative (N = 3)[44, 45, 47], Qualitative (N = 5)[40-43, 46]	The Green House model was developed by William Thomas and is based on the Eden Alternative in the US. The model emphasizes a homelike environment and significantly transformed care staff roles.	This model includes small-scale and homelike facilities, with a family-style physical environment.	Normalized daily activities are promoted, such as doing laundry or cooking, and Green House homes encourage and support autonomy.	Certified nursing assistants, referred to as the 'Shahbazim', are at the centre of the Green House model. They work in self-managed teams and have integrated tasks (e.g. resident care, household chores, and staff scheduling). Nurses have a more visiting and clinical role. The so-called

Table 2. (continued)

Living arrangement	Articles; Country	Number of residents	Articles design	General description	Physical environment	Social environment	Organizational environment
							'Guide', whose office is outside the home, often guides staff members. Green Houses are often opened alongside a large nursing home, called a 'legacy home'.
Shared housing arrange-ments	7 Articles [48-54]; Germany	6-8 residents	(Quasi-) experimental quantitative (N = 5)[49-51, 53, 54], Observa-tional quantitative (N = 1)[52], Qualitative (N = 1)[48]	This approach is an alternative to regular nursing homes, where a small group of older people in need of care live together in a small-scale, homelike living facility.	It is a regular apartment building, usually in an urban setting, with a small-scale, homelike appearance.	The daily routines focus on 'family living' and living as self-determinedly and normally as possible, by doing household chores together. Family is also involved by participating in the daily life in shared housing arrangements and acting as legal representatives. As shared housing arrangements are located in residential districts, residents are encouraged to participate in the social life of the community.	Shared housing arrangements are not connected with residential care, as care is provided by community care services. Shared housing arrangements are long-term, meaning that residents do not have to move to a nursing home when their care needs are increasing.

Table 2. (continued)

Living arrangement	Articles; Country	Number of residents	Articles design	General description	Physical environment	Social environment	Organizational environment
Green care farms	8 Articles[20, 55-61]; The Netherlands	6-60 residents	(Quasi-) experimental quantitative (N = 3)[20, 56, 58], Qualitative (N = 5)[55, 57, 59-61]	In green care farms, agricultural activities are combined with care services for several groups, such as older people with dementia. They provide care in a small-scale, homelike environment on the terrain of a farm.	Green care farms offer a familiar and small-scale, homelike environment. The facility often resembles an archetypal house. Animals, plants, and natural aspects are present.	Green care farms focus on meaningful activities in everyday life as well as autonomy. Residents are encouraged to participate in a range of activities that are meaningful and stimulating, such as domestic (e.g. cooking, doing laundry), work-related (e.g. feeding animals, gardening), social (e.g. coffee break), and recreational (e.g. reading, playing games) activities. Due to free access to outdoor areas, residents always have the opportunity to go outside.	Green care farms differ in the degree of farming and care, meaning that some farms are actual farms with a profitable production. For other locations, care is the main source of income. The farmers are often personally involved in developing the care vision and motivating staff members. Staff members have integrated tasks
Dementia village	6 Articles [40, 62-66]; The Netherlands, Denmark, Germany	52-152 Residents, but divided into smaller group homes	(Quasi-) experimental quantitative (N = 1)[66] Qualitative (N = 5)[40, 62-65]	A dementia village introduces a non-institutional village-type of accommodation, often located in a mid-sized town. It originates from the	The village is developed in such a way as to resemble a familiar environment for the residents (e.g. a high street, town square,	Residents are matched and placed into the same home, based on their background. Autonomy is encouraged by normalizing daily life and being able to choose what to do during the	The environment is designed to protect, but not restrict the residents. Professional and institutional features are hidden as well as possible. Staff members and caregivers wear clothing

Table 2. (continued)

Living arrangement	Articles; Country	Number of residents	Articles design	General description	Physical environment	Social environment	Organizational environment
				dementia village of Hogeweyk in the Netherlands. It aims to create an environment that enables residents to live as normally as possible, while still feeling part of the local community.	supermarket, activity centre, connecting paths between residences, and gardens).	day.	that fits the lifestyle, so no uniforms are worn.
Group homes	3 Articles[67-69]; Japan	5-12 residents	(Quasi-) experimental quantitative (N = 2)[67, 69], Observa-tional quantitative (N = 1)[68]	A group-living based facility for residents with dementia.	A small-scale and homelike environment in a familiar community.	There is particular attention paid to familiar relationships and each patient's lifestyle. Staff members live together with residents.	At least one staff member per three residents is allocated as full-time personnel.

Table 2. (continued)

Living arrangement	Articles; Country	Number of residents	Articles design	General description	Physical environment	Social environment	Organizational environment
Intergenera-tional living	3 Articles[7][0-72]; the Netherlands	166 residents	Qualitative (N = 3)[70-72]	In this living environment, students and older residents live together. This living environment is based on social reciprocity and a feeling of community.	The setting is a large institutional building.	There is one student for every 25 residents in the intergenerational living environment. The students act as 'good neighbours' and share experiences and perform activities with the older residents. In return, older residents share their experiences. Reciprocity is key within this vision. The location has a central place in the community. Older people, students, and others in need of support live together and the broader community is welcome as well.	Students who study nursing or medicine are not allowed, to promote a more natural environment. In exchange for free accommodation, students perform 30 hours per month of social-type work. Caregivers and volunteers are in charge of care services and the annual budget. There is a 'yes'-culture within the organization, to motivate all those involved to propose ideas and solutions.

Table 2. (continued)

Living arrangement	Articles; Country	Number of residents	Articles design	General description	Physical environment	Social environment	Organizational environment
Other: Household model of residential aged care[73]	Australia	16-30 residents per household	Qualitative	A homelike environment that focuses on positive ageing and maintaining a sense of 'self'.	A home-like appearance with a kitchen, dining room, and self-contained apartments.	There are no fixed schedules. Continuous access to food and the ability to choose is central to this model.	The staff member responsible for coordinating the household is named 'Homemaker'. Staff members are encouraged to work autonomously and perform integrated tasks.
Household model units[74, 75]	2 Articles; Ireland	16-18 residents	(Quasi-) experimental quantitative (N = 2)	This homelike environment emphasizes autonomy and privacy.	This homelike environment features open plan areas.	There are no fixed schedules and autonomy is encouraged by offering choices.	There is a new staff role, called 'Homemaker'. This person's role is defined by the kitchen and household tasks. He/she has a constant monitoring presence in the open plan area.
Intensive service housing[76]	Finland	/	Qualitative	Homelike housing units located in intensive service housing facilities. 'Home' is a strongly emphasized word.	The unit is decorated with the residents' belongings. Movement is restricted.	The central idea of this arrangement is homemaking, thus prioritizing homelike and domestic-style care.	The resident pays for all services (e.g. Rent, care, meals, cleaning) separately.

Table 2. (continued)

Living arrangement	Articles; Country	Number of residents	Articles design	General description	Physical environment	Social environment	Organizational environment
Non-traditional residential care facility[77]	Australia	/	Qualitative	This approach utilizes principles of environmental design to create a dementia-friendly environment.	The building has an open floor plan and a homelike, domestic appearance.	Employees initiate spontaneous group activities, instead of planning them.	/
Woodside place model[78]	Canada	12 residents per Household	(Quasi-) experimental quantitative	This approach provides a supportive and secure homelike environment, with a focus on supporting autonomy.	The environment is a small and homelike setting, with a household with a small dining room, kitchen, and bedrooms as the core component.	The social environment emphasizes a normal way of living, adapted to cultural values	/
small-scale homelike unit[79]	Canada	12 residents	(Quasi-) experimental quantitative	This approach creates a small-scale homelike unit.	The environment includes a short corridor with single bedrooms and a single-loaded floor plan.	/	In the daytime, 1.5 nurses and two care aides work at the location.
Homelike dementia care facility[80]	China	20 residents	Qualitative	This approach aims to create a homelike environment for people with dementia	This environment includes a residential area, activity areas, and common areas	Residents can engage in various activities, including homelike activities (e.g. household chores, exercising).	/

Themes

By analysing the data based on the physical, social, and organizational environment of the described innovative living arrangements, the following themes emerged: promoting autonomy, small-scale/homelike environment, involvement of community, focus on nature, integration of work tasks, and involvement of family members. These themes describe the similarities and differences among the innovative living arrangements and lead to a clear overview of the characteristics of the described living arrangements.

Promoting autonomy

Six out of seven arrangements and two articles in the 'other' category (household model of residential aged care and household model units) emphasized the importance of promoting autonomy. In most arrangements, autonomy is fostered by normalizing daily life and offering choice, meaning that the residents live their lives as normally as possible, minimizing rigid routines, that are often seen in more regular nursing homes. This is often encouraged by involving residents in daily household tasks. Centering the daily lives of residents around daily routines is applied in small-scale living, the Green House model, and shared housing arrangements. Green care farms also focus on daily routines but emphasize nature and farm-based daily activities (e.g. feeding the animals and gardening). Although almost all living arrangements emphasize the importance of promoting autonomy, a clear definition of what autonomy entails is often missing. Furthermore, more information on how they exactly aim to promote autonomy is often not provided.

Small-scale homelike environment

Five out of seven living arrangements focus on creating a small-scale and/or homelike environment. Small-scale living, the Green House model, shared housing arrangements, green care farms, group homes, and two living arrangements of the 'other' category (the Woodside place model, and a small-scale homelike unit) focus on creating both a small-scale and homelike environment. Dementia villages and the remaining four living arrangements of the 'other' category focus solely on creating a homelike environment, although dementia villages implicitly suggest that there is also small scale-ness, as residents are divided into smaller group homes in the village. The interpretation of small scale-ness seems to differ among, but also within, living arrangements. They differ in group size from 6 to 16 residents, showing diversity in the considered appropriate number of residents for small scale-ness. Most living arrangements describe at-homeness in a similar manner, as the facility often resembles an archetypal house

with a kitchen, living room, and self-contained apartment. The articles mostly focus on the physical appearance of at-homeness, but the authors provide little to no information about the role of the social and organizational environment in creating a homelike atmosphere.

Integration of work tasks

Three living arrangements (small-scale living, Green House model, and green care farm) and two articles of the 'other' category (household model of residential aged care and household model units) focus on integrated tasks of staff members. This entails that staff members not only perform care-related tasks, but also domestic, social, and recreational tasks. The living arrangement that stands out here is the Green House model, as this arrangement has created new care roles, named the Shahbazim and the Guide. The Shahbazim are the direct care staff who are responsible for a broad array of tasks (e.g. resident care, household tasks, activities, and staff scheduling). The Guide, with an office outside the Green House, acts as a coach and supervises the Shahbazim in all non-clinical aspects. The living arrangements that do not specifically mention the integration of tasks of staff members do often mention a de-institutionalized way of working (e.g. not wearing uniforms, hiding institutional aspects such as a nursing station, having a fixed team of staff members).

Involvement of the community

Two living arrangements emphasize involvement of the community. Within intergenerational living older residents live together with students, and the community and others in need of support are also encouraged to visit. Shared housing arrangements stress the importance of community volunteers and their social involvement in caring for the residents. Other living arrangements do not explicitly describe the involvement of the neighbourhood. These arrangements focus more on creating community within the living arrangement, by creating a family-like household of residents and staff members. This is broadened in dementia villages, where an entire 'village-type' accommodation is created to create a community on its own for the residents. The focus is more on the inside community, rather than the community outside the dementia village.

Focus on nature

Two living arrangements (i.e. green care farms and dementia villages) explicitly mention the focus on nature. In green care farms, nature has a prominent role. The daily lives of residents revolve around agricultural activities. There are animals and plants present, and the facility is

often part of some sort of farm. Going outside and being involved with nature is encouraged in green care farms. Articles describing a dementia village also mention the presence of a park but residents are not explicitly encouraged to be engaged with nature. Within different small-scale living arrangements (small-scale living, the Green House model, and group homes), there are individual differences in the use of nature. Some articles describe the presence of an outdoor space and/or garden, while other articles do not mention this. In these living arrangements, the presence of nature seems to be location-specific, rather than concept-specific. Shared housing arrangements, on the other hand, seem to focus more on urban locations, and do not focus on, or mention, nature.

Involvement of family members

A few articles explicitly describe the role of family in the living arrangement. In shared housing arrangements, there is a strong emphasis on the involvement of family members. They serve as key people for the residents and nursing staff. For example, some articles describe that they are involved in all aspects of care provision, decision-making, household tasks, and activities.[49-51] In small-scale living, some articles describe that family members determine the organization of daily life together with the residents and staff members.[15,16,18,31,39] None of the other living arrangements explicitly describe the family involvement.

Effectiveness

Twenty-eight articles reported on the effects of the innovative living environment on either residents, family members, or staff members. Most articles (N=22) studied resident-related outcomes, with eight articles focusing on quality of life. The articles showed mixed results, from no effect on quality of life (N=5),[18,20,50,53,54] to effects only on sub-scales of the quality of life questionnaires used (N=2).[34-37] Only one article showed a significant effect on quality of life of residents when family members were actively involved within shared housing arrangements.[49] Other articles focused mainly on outcomes related to the daily/social life of residents. These articles include a diverse number of outcome measures. Most articles showed a positive effect on some – but not all – outcome measures.[16,29,35,58,74,75,79] Four articles studied staff member–related outcomes, all focusing on job characteristics. Three articles showed positive outcomes for job-related characteristics (e.g. stress, burnout, and job satisfaction),[15,31,32] and one showed a negative effect on fatigue and no effect on the other outcomes.[33] Two articles studied family-related outcomes, showing that family members felt less burdened and more satisfied with the innovative living environment.[18,35]

DISCUSSION

This scoping review has presented an overview of innovative living arrangements within long-term care and their core characteristics. Seven overarching living arrangements have been identified: small-scale living, the Green House model, shared housing arrangements, green care farms, dementia villages, group homes, intergenerational living, and an 'other' category. Emerging themes of these living arrangements are the importance of stimulating and supporting autonomy. Furthermore, most living arrangements focus on creating a small-scale and/or homelike environment. The other themes – involvement of the community, focus on nature, integration of tasks staff members, and involvement of family members – are emphasized in some of the described living arrangements. Quality of life, and outcomes related to daily/ social life have been the most studied measures.

In most articles, the main focus is on the physical environment, where the features of the indoor and outdoor areas are often described in detail. For example, the authors describe what makes a location 'homelike', including the physical features (e.g. the furniture is recognizable and placed in a manner that facilitates social interaction, there are animals present, personal belongings are present). Even though recent insights highlight the importance of the social and organizational environment,[6] most descriptions of innovative living arrangements lack specific information on these components. It is important to have congruence between the physical, social and organizational environment to promote optimal well-being and daily functioning.[6] Only describing and focusing on the physical environment gives an incomplete overview of the functioning of living arrangements. When looking at the example of at-homeness, research shows that it is more than just the physical environment. It also entails a feeling of autonomy, feeling safe and respected by staff members and other residents, and building meaningful relationships.[81] A meaning of home is a combination of physical, social, and individual aspects,[82] showing that next to a home-like physical environment, older adults perceive 'feeling at home' as being able to preserve their personal identity, experiencing continuity in life, feelings of belonging, and being active.[83] This illustrates that the social and organizational features are just as important as physical features in understanding how a living arrangement operates.

One of the core themes throughout most living arrangements is the promotion/support of autonomy. Most articles describe that autonomy is supported by letting residents determine how to spend their daily lives and performing meaningful activities, such as doing household chores. The articles do not define autonomy explicitly and how support of autonomy is

operationalized within innovative living arrangements. Autonomy focuses on independence and self-determination, meaning that independence of action, speech, and thought is important.[84] For residents with complex care needs, autonomy is not always a given, due to their increase in care dependency. Nevertheless, research focusing on autonomy within long-term care emphasizes the importance of relational autonomy, meaning that the social environment plays an important role in facilitating autonomy.[85] How the social environment facilitates autonomy within the included living arrangements, however, remains rather abstract and unclear. Despite the fact that living arrangements stress the importance of autonomy, researchers have not explained how to apply this philosophy to residents with complex care needs in practice. What is needed, for example, is a description of what role the staff members have in supporting autonomy and how they can operationalize this in practice. Relationships between staff and residents can either facilitate or inhibit autonomy,[85] and more and more practices to facilitate autonomy, such as reablement (which focuses on mitigating the impact of dementia on functioning) are being developed.[86]

Innovation is often associated with the use of technology. Notably, the role of technology is not described in the included articles concerning innovative living arrangements. The presence of technology in long-term care is becoming more prominent; examples include socially assistive robots, and technology to prevent falls and to ensure safety.[87,88] Governmental, academic, and private organizations are increasingly developing and deploying technology in ageing services.[89] These technologies range from sensors (e.g. bio-sensors and motion sensors) to virtual reality and remote communication possibilities.[89] More insight is needed regarding the role of technology in these living arrangements – for example, enabling the autonomy of residents to move around by using GPS – and why this aspect is not represented properly in the published literature. A possible explanation is that technology in long-term care is still in a rather exploratory phase. The available research concerning technology shows mixed results in terms of effectiveness.[87,88] Another possible explanation is that we did not explicitly include terms related to technology in our search string, meaning that we might not have found these articles.

A few limitations of this scoping review should be addressed. First, there is a possibility that the search string did not identify all relevant living arrangements, as terminology varies among articles and living arrangements. Second, articles that are not written in English or Dutch/Flemish were excluded, and grey literature was excluded as well, meaning that some relevant living arrangements might not have been included. Third, we only performed backward snowballing, meaning that we did thus not perform forward snowballing and might

have missed relevant articles. Fourth, there is a delay between current practice and the literature, meaning there may be other innovative arrangements available or tested that we could not capture with our literature-based review. Lastly, there is a lot of variety in the amount of information provided among the identified arrangements. Some articles present a clear case study with an extensive description of the living arrangements, while others provide minimal description. This reality made it challenging to extract data and to identify the core themes among the living arrangements.

Although there is an increasing interest in innovative living arrangements, much is still unknown. This review has attempted to provide an overview of innovative living arrangements described in the literature and to describe their core characteristics. The results of this scoping review show that living arrangements using the same terminology can still differ quite a lot in operationalization. Greater clarity should be provided about the underlying physical, social, and organizational mechanisms that define an innovative living arrangement. There is a lot of diversity within alternatives for regular nursing homes. Future effectiveness studies are easier to carry out when descriptions of key elements are transparent. Furthermore, gaining insight into the physical, social, and organizational environment of innovative living arrangements will improve the knowledge of developers in long-term care, providing them with support when developing innovative living arrangements.

CONCLUSION

For future research, it is important to identify the working components of not only the physical environment, but also the social and organizational components to broaden our understanding of the underlying working mechanisms of innovative living arrangements. When developing, it is key to not only think about the physical environment, but also consider how to operationalize the vision of the living arrangement. Developers should consider what role staff members will have, how the social surroundings will be utilized, and how care should be organized within the physical setting. When evaluating an innovative living arrangement, it is key to not only consider the physical environment, but to consider the social and organizational environment as well. Therefore, a better understanding of the mechanisms of innovative living arrangements may provide a better guide for developers within long-term care. This review shows that more knowledge is needed about potential key elements of innovative living arrangements, especially related to their social and organizational environment.

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APPENDICES

Appendix 2A: Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2,3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	3-5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	5
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	NA
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	6
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	5,6
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	5,6

Appendix 2A (continued)

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	7
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	7
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	NA
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	7
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	8,9
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	9 and table 1
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	NA
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	9,10
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	8-14

Appendix 2A (continued)

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	15-16
Limitations	20	Discuss the limitations of the scoping review process.	16, 17
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	17, 18
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	18

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

Appendix 2B: Search string

Search string PubMed

Section 1:

("Aged"[MeSH] OR "Dementia"[MeSH] OR "Health services for the aged"[MeSH] OR "Geriatrics"[MeSH] OR "Geriatric Psychiatry"[MeSH] OR "Geriatric Nursing"[MeSH] OR "Old adult*"[tiab] OR "Old people"[tiab] OR "Older adult*"[tiab] OR "Older people"[tiab] OR "elder*"[tiab] OR "Dementia"[tiab] OR "Senior*"[tiab] OR "Geriatric*"[tiab] OR "ages 65"[tiab] OR "aged 65"[tiab] OR "65 and over"[tiab] OR "ages 70"[tiab] OR "aged 70"[tiab] OR "70 and over"[tiab] OR "ages 75"[tiab] OR "aged 75"[tiab] OR "75 and over"[tiab] OR "ages 80"[tiab] OR "aged 80"[tiab] OR "80 and over"[tiab] OR "ages 85"[tiab] OR "aged 85"[tiab] OR "85 and over"[tiab] OR "ages 90"[tiab] OR "aged 90"[tiab] OR "90 and over"[tiab] OR "eldest"[tiab] OR "frail*"[tiab] OR "geriatri*"[tiab] OR "old age*"[tiab] OR "oldest old*"[tiab] OR "senium"[tiab] OR "very old*"[tiab] OR "septuagenarian*"[tiab] OR "octagenarian*"[tiab] OR "nonagenarian*"[tiab] OR "centarian*"[tiab] OR "centenarian*"[tiab] OR "supercentenarian*"[tiab] OR "older subject*"[tiab] OR "older patient*"[tiab] OR "older age*"[tiab] OR "older men"[tiab] OR "older male*"[tiab] OR "older woman"[tiab] OR "older women"[tiab] OR "older female*"[tiab] OR "older population*"[tiab] OR "older person*"[tiab])

AND

Section 2A:

("Group homes"[MeSH] OR "Group living"[tiab] OR "Group dwelling*"[tiab] OR "Collective living"[tiab] OR "Homelike"[tiab] OR "Home like"[tiab] OR "Small scale"[tiab] OR "Smallscale"[tiab] OR "Small unit*"[tiab] OR "Care farm*"[tiab] OR "Green care"[tiab] OR "Green dementia care"[tiab] OR "Social farm*"[tiab] OR "Green hous*" [tiab] OR "dementia friendly"[tiab] OR "homeshar*"[tiab] OR "Dementia villag*"[tiab] OR "Cohous*"[tiab] OR "shared hous*"[tiab] OR "communal liv*"[tiab])

OR

Section 2B:

("Housing for the Elderly"[Mesh] OR "Institutionalization"[MeSH] OR "Long-Term Care"[MeSH] OR "Geriatric Nursing"[MeSH] OR "Residential Facilities"[MeSH] OR "Environment Design"[MeSH] OR "Nursing homes"[MeSH] OR "24-hour care facilit*"[tiab] OR "care home*"[tiab] OR "care institution*"[tiab] OR "extended care facilit*"[tiab] OR "geriatric center*"[tiab] OR "geriatric centre*"[tiab] OR "geriatric facilit*"[tiab] OR "geriatric home*"[tiab] OR "geriatric institution*"[tiab] OR "geriatric unit*"[tiab] OR "group home*"[tiab] OR "home for the aged"[tiab] OR "institutionalized elderly"[tiab] OR "intermediate care facilit*"[tiab] OR "long term care"[tiab] OR "LTCF*"[tiab] OR "nursing center*"[tiab] OR "nursing centre*"[tiab] OR "nursing facilit*"[tiab] OR "nursing home*"[tiab] OR "nursing institution*"[tiab] OR "nursing unit*"[tiab] OR "old age home*"[tiab] OR "residential care"[tiab] OR "residential facilit*"[tiab] OR "skilled nursing facilit*"[tiab] OR "Homes for the elderly"[tiab] OR "Home for the elderly"[tiab] OR "Home for elderly"[tiab] OR "Homes for elderly"[tiab] OR "assisted living facilit*"[tiab] OR "continuing care retirement communit*"[tiab] OR "old folks

home*"[tiab] OR "old folks' home*"[tiab] OR "old people's home*"[tiab] OR "rest home*"[tiab] OR "retirement facilit*"[tiab] OR "retirement home*"[tiab] OR "age friendly communit*"[tiab] OR "Livable communit*"[tiab] OR "Intergenerational living"[tiab] OR "Intergenerational housing"[tiab] OR "Senior hous*"[tiab] OR "special care unit*"[tiab] OR "Special care facilit*"[tiab])
AND
("Organizational innovation"[MeSH] OR "Diffusion of Innovation"[MeSH] OR "Inventions"[MeSH] OR "Knowledge Management"[MeSH] OR "Health Care Reform"[MeSH] OR "innovat*"[ti] OR "Original"[ti] OR "visionar*"[ti] OR "chang*"[ti] or "alternative*"[ti] OR "modernization*"[ti] OR "modernisation*"[ti] OR "cutting edge"[ti] OR "leading edge"[ti] OR "inventi*"[ti] OR "Ingenious"[ti] OR "reform*"[ti])

Search string CINAHL

Section 1:

(MH "Aged+" OR MH "Dementia+" OR MH "Health Services for the Aged" OR MH "Geriatrics" OR MH "Geriatric Psychiatry" OR MH "Gerontologic Nursing+" OR TI "Old adult*" OR TI "Old people" OR TI "Older adult*" OR TI "Older people" OR TI "elder*" OR TI "Dementia" OR TI "Senior*" OR TI "Geriatric*" OR TI "ages 65" OR TI "aged 65" OR TI "65 and over" OR TI "ages 70" OR TI "aged 70" OR TI "70 and over" OR TI "ages 75" OR TI "aged 75" OR TI "75 and over" OR TI "ages 80" OR TI "aged 80" OR TI "80 and over" OR TI "ages 85" OR TI "aged 85" OR TI "85 and over" OR TI "ages 90" OR TI "aged 90" OR TI "90 and over" OR TI "eldest" OR TI "frail*" OR TI "geriatri*" OR TI "old age*" OR TI "oldest old*" OR TI "senium" OR TI "very old*" OR TI "septuagenarian*" OR TI "octagenarian*" OR TI "nonagenarian*" OR TI "centarian*" OR TI "centenarian*" OR TI "supercentenarian*" OR TI "older subject*" OR TI "older patient*" OR TI "older age*" OR TI "older men" OR TI "older male*" OR TI "older woman" OR TI "older women" OR TI "older female*" OR TI "older population*" OR TI "older person*" OR AB "Old adult*" OR AB "Old people" OR AB "Older adult*" OR AB "Older people" OR AB "elder*" OR AB "Dementia" OR AB "Senior*" OR AB "Geriatric*" OR AB "ages 65" OR AB "aged 65" OR AB "65 and over" OR AB "ages 70" OR AB "aged 70" OR AB "70 and over" OR AB "ages 75" OR AB "aged 75" OR AB "75 and over" OR AB "ages 80" OR AB "aged 80" OR AB "80 and over" OR AB "ages 85" OR AB "aged 85" OR AB "85 and over" OR AB "ages 90" OR AB "aged 90" OR AB "90 and over" OR AB "eldest" OR AB "frail*" OR AB "geriatri*" OR AB "old age*" OR AB "oldest old*" OR AB "senium" OR AB "very old*" OR AB "septuagenarian*" OR AB "octagenarian*" OR AB "nonagenarian*" OR AB "centarian*" OR AB "centenarian*" OR AB "supercentenarian*" OR AB "older subject*" OR AB "older patient*" OR AB "older age*" OR AB "older men" OR AB "older male*" OR AB "older woman" OR AB "older women" OR AB "older female*" OR AB "older population*" OR AB "older person*")

AND

Section 2A:

(TI "Group homes" OR TI "Group living" OR TI "Group dwelling*" OR TI "Collective living" OR TI "Homelike" OR TI "Home like" OR TI "Small scale" OR TI "Smallscale" OR TI "Small unit*" OR TI "Care farm*" OR TI "Green care" OR TI "Green dementia care" OR TI "Social farm*" OR TI "Green

hous*" OR TI "dementia friendly" OR TI "homeshar*" OR TI "Dementia villag*" OR TI "Cohous*" OR TI "shared hous*" OR TI "communal liv*" OR AB "Group homes" OR AB "Group living" OR AB "Group dwelling*" OR AB "Collective living" OR AB "Homelike" OR AB "Home like" OR AB "Small scale" OR AB "Smallscale" OR AB "Small unit*" OR AB "Care farm*" OR AB "Green care" OR AB "Green dementia care" OR AB "Social farm*" OR AB "Green hous*" OR AB "dementia friendly" OR AB "homeshar*" OR AB "Dementia villag*" OR AB "Cohous*" OR AB "shared hous*" OR AB "communal liv*")

OR

Section 2B:

(MH "Housing for the Elderly" OR MH "Institutionalization+" OR MH "Long Term Care" OR MH "Gerontologic Nursing+" OR MH "Residential Facilities+" OR MH "Nursing Home Design and Construction" OR TI "24-hour care facilit*" OR TI "care home*" OR TI "care institution*" OR TI "extended care facilit*" OR TI "geriatric center*" OR TI "geriatric centre*" OR TI "geriatric facilit*" OR TI "geriatric home*" OR TI "geriatric institution*" OR TI "geriatric unit*" OR TI "group home*" OR TI "home for the aged" OR TI "institutionalized elderly" OR TI "intermediate care facilit*" OR TI "long term care" OR TI "LTCF*" OR TI "nursing center*" OR TI "nursing centre*" OR TI "nursing facilit*" OR TI "nursing home*" OR TI "nursing institution*" OR TI "nursing unit*" OR TI "old age home*" OR TI "residential care" OR TI "residential facilit*" OR TI "skilled nursing facilit*" OR TI "Homes for the elderly" OR TI "Home for the elderly" OR TI "Home for elderly" OR TI "Homes for elderly" OR TI "assisted living facilit*" OR TI "continuing care retirement communit*" OR TI "old folks home*" OR TI "old folks' home*" OR TI "old people's home*" OR TI "rest home*" OR TI "retirement facilit*" OR TI "retirement home*" OR TI "age friendly communit*" OR TI "Livable communit*" OR TI "Intergenerational living" OR TI "Intergenerational housing" OR TI "Senior hous*" OR TI "special care unit*" OR TI "Special care facilit*" OR AB "24-hour care facilit*" OR AB "care home*" OR AB "care institution*" OR AB "extended care facilit*" OR AB "geriatric center*" OR AB "geriatric centre*" OR AB "geriatric facilit*" OR AB "geriatric home*" OR AB "geriatric institution*" OR AB "geriatric unit*" OR AB "group home*" OR AB "home for the aged" OR AB "institutionalized elderly" OR AB "intermediate care facilit*" OR AB "long term care" OR AB "LTCF*" OR AB "nursing center*" OR AB "nursing centre*" OR AB "nursing facilit*" OR AB "nursing home*" OR AB "nursing institution*" OR AB "nursing unit*" OR AB "old age home*" OR AB "residential care" OR AB "residential facilit*" OR AB "skilled nursing facilit*" OR AB "Homes for the elderly" OR AB "Home for the elderly" OR AB "Home for elderly" OR AB "Homes for elderly" OR AB "assisted living facilit*" OR AB "continuing care retirement communit*" OR AB "old folks home*" OR AB "old folks' home*" OR AB "old people's home*" OR AB "rest home*" OR AB "retirement facilit*" OR AB "retirement home*" OR AB "age friendly communit*" OR AB "Livable communit*" OR AB "Intergenerational living" OR AB "Intergenerational housing" OR AB "Senior hous*" OR AB "special care unit*" OR AB "Special care facilit*")
AND
(MH "Diffusion of Innovation+" OR MH "Knowledge Management+" OR MH "Health Care Reform+" OR TI "innovat*" OR TI "Original" OR TI "visionar*" OR TI "chang*" or TI "alternative*"

OR TI "modernization*" OR TI "modernisation*" OR TI "cutting edge" OR TI "leading edge" OR TI "inventi*" OR TI "Ingenious" OR TI "reform*")

Search string PsycInfo

Section 1:

(DE "Aging" OR DE "Cognitive Aging" OR DE "Physiological Aging" OR DE "Dementia" OR DE "Geriatrics" OR DE "Geriatric Psychiatry" OR DE "Gerontology" OR TI "Old adult*" OR TI "Old people" OR TI "Older adult*" OR TI "Older people" OR TI "elder*" OR TI "Dementia" OR TI "Senior*" OR TI "Geriatric*" OR TI "ages 65" OR TI "aged 65" OR TI "65 and over" OR TI "ages 70" OR TI "aged 70" OR TI "70 and over" OR TI "ages 75" OR TI "aged 75" OR TI "75 and over" OR TI "ages 80" OR TI "aged 80" OR TI "80 and over" OR TI "ages 85" OR TI "aged 85" OR TI "85 and over" OR TI "ages 90" OR TI "aged 90" OR TI "90 and over" OR TI "eldest" OR TI "frail*" OR TI "geriatri*" OR TI "old age*" OR TI "oldest old*" OR TI "senium" OR TI "very old*" OR TI "septuagenarian*" OR TI "octagenarian*" OR TI "nonagenarian*" OR TI "centarian*" OR TI "centenarian*" OR TI "supercentenarian*" OR TI "older subject*" OR TI "older patient*" OR TI "older age*" OR TI "older men" OR TI "older male*" OR TI "older woman" OR TI "older women" OR TI "older female*" OR TI "older population*" OR TI "older person*" OR AB "Old adult*" OR AB "Old people" OR AB "Older adult*" OR AB "Older people" OR AB "elder*" OR AB "Dementia" OR AB "Senior*" OR AB "Geriatric*" OR AB "ages 65" OR AB "aged 65" OR AB "65 and over" OR AB "ages 70" OR AB "aged 70" OR AB "70 and over" OR AB "ages 75" OR AB "aged 75" OR AB "75 and over" OR AB "ages 80" OR AB "aged 80" OR AB "80 and over" OR AB "ages 85" OR AB "aged 85" OR AB "85 and over" OR AB "ages 90" OR AB "aged 90" OR AB "90 and over" OR AB "eldest" OR AB "frail*" OR AB "geriatri*" OR AB "old age*" OR AB "oldest old*" OR AB "senium" OR AB "very old*" OR AB "septuagenarian*" OR AB "octagenarian*" OR AB "nonagenarian*" OR AB "centarian*" OR AB "centenarian*" OR AB "supercentenarian*" OR AB "older subject*" OR AB "older patient*" OR AB "older age*" OR AB "older men" OR AB "older male*" OR AB "older woman" OR AB "older women" OR AB "older female*" OR AB "older population*" OR AB "older person*")

AND

Section 2A:

(DE "Group Homes" OR TI "Group homes" OR TI "Group living" OR TI "Group dwelling*" OR TI "Collective living" OR TI "Homelike" OR TI "Home like" OR TI "Small scale" OR TI "Smallscale" OR TI "Small unit*" OR TI "Care farm*" OR TI "Green care" OR TI "Green dementia care" OR TI "Social farm*" OR TI "Green hous*" OR TI "dementia friendly" OR TI "homeshar*" OR TI "Dementia villag*" OR TI "Cohous*" OR TI "shared hous*" OR TI "communal liv*" OR AB "Group homes" OR AB "Group living" OR AB "Group dwelling*" OR AB "Collective living" OR AB "Homelike" OR AB "Home like" OR AB "Small scale" OR AB "Smallscale" OR AB "Small unit*" OR AB "Care farm*" OR AB "Green care" OR AB "Green dementia care" OR AB "Social farm*" OR AB "Green hous*" OR AB "dementia friendly" OR AB "homeshar*" OR AB "Dementia villag*" OR AB "Cohous*" OR AB "shared hous*" OR AB "communal liv*")

OR

Section 2B:

(DE "Institutionalization" OR DE "Long Term Care" OR DE "Residential Care Institutions" OR DE "Nursing Homes" OR TI "24-hour care facilit*" OR TI "care home*" OR TI "care institution*" OR TI "extended care facilit*" OR TI "geriatric center*" OR TI "geriatric centre*" OR TI "geriatric facilit*" OR TI "geriatric home*" OR TI "geriatric institution*" OR TI "geriatric unit*" OR TI "group home*" OR TI "home for the aged" OR TI "institutionalized elderly" OR TI "intermediate care facilit*" OR TI "long term care" OR TI "LTCF*" OR TI "nursing center*" OR TI "nursing centre*" OR TI "nursing facilit*" OR TI "nursing home*" OR TI "nursing institution*" OR TI "nursing unit*" OR TI "old age home*" OR TI "residential care" OR TI "residential facilit*" OR TI "skilled nursing facilit*" OR TI "Homes for the elderly" OR TI "Home for the elderly" OR TI "Home for elderly" OR TI "Homes for elderly" OR TI "assisted living facilit*" OR TI "continuing care retirement communit*" OR TI "old folks home*" OR TI "old folks' home*" OR TI "old people's home*" OR TI "rest home*" OR TI "retirement facilit*" OR TI "retirement home*" OR TI "age friendly communit*" OR TI "Livable communit*" OR TI "Intergenerational living" OR TI "Intergenerational housing" OR TI "Senior hous*" OR TI "special care unit*" OR TI "Special care facilit*" OR AB "24-hour care facilit*" OR AB "care home*" OR AB "care institution*" OR AB "extended care facilit*" OR AB "geriatric center*" OR AB "geriatric centre*" OR AB "geriatric facilit*" OR AB "geriatric home*" OR AB "geriatric institution*" OR AB "geriatric unit*" OR AB "group home*" OR AB "home for the aged" OR AB "institutionalized elderly" OR AB "intermediate care facilit*" OR AB "long term care" OR AB "LTCF*" OR AB "nursing center*" OR AB "nursing centre*" OR AB "nursing facilit*" OR AB "nursing home*" OR AB "nursing institution*" OR AB "nursing unit*" OR AB "old age home*" OR AB "residential care" OR AB "residential facilit*" OR AB "skilled nursing facilit*" OR AB "Homes for the elderly" OR AB "Home for the elderly" OR AB "Home for elderly" OR AB "Homes for elderly" OR AB "assisted living facilit*" OR AB "continuing care retirement communit*" OR AB "old folks home*" OR AB "old folks' home*" OR AB "old people's home*" OR AB "rest home*" OR AB "retirement facilit*" OR AB "retirement home*" OR AB "age friendly communit*" OR AB "Livable communit*" OR AB "Intergenerational living" OR AB "Intergenerational housing" OR AB "Senior hous*" OR AB "special care unit*" OR AB "Special care facilit*")
AND
(DE "Innovation" OR DE "Knowledge Management" OR DE "Health Care Reform" OR TI "innovat*" OR TI "Original" OR TI "visionar*" OR TI "chang*" or TI "alternative*" OR TI "modernization*" OR TI "modernisation*" OR TI "cutting edge" OR TI "leading edge" OR TI "inventi*" OR TI "Ingenious" OR TI "reform*")

Search string Web of Science

Section 1:

AB=("Aged" OR "Dementia" OR "Health services for the aged" OR "Geriatrics" OR "Geriatric Psychiatry" OR "Geriatric Nursing" OR "Old adult*" OR "Old people" OR "Older adult*" OR "Older people" OR "elder*" OR "Dementia" OR "Senior*" OR "Geriatric*" OR "ages 65" OR "aged 65" OR "65 and over" OR "ages 70" OR "aged 70" OR "70 and over" OR "ages 75" OR "aged 75"

OR "75 and over" OR "ages 80" OR "aged 80" OR "80 and over" OR "ages 85" OR "aged 85" OR "85 and over" OR "ages 90" OR "aged 90" OR "90 and over" OR "elde*" OR "frail*" OR "geriatri*" OR "old age*" OR "oldest old*" OR "senium" OR "very old*" OR "septuagenarian*" OR "octagenarian*" OR "nonagenarian*" OR "centarian*" OR "centenarian*" OR "supercentenarian*" OR "older subject*" OR "older patient*" OR "older age*" OR "older men" OR "older male*" OR "older woman" OR "older women" OR "older female*" OR "older population*" OR "older person*") OR TI=("Aged" OR "Dementia" OR "Health services for the aged" OR "Geriatrics" OR "Geriatric Psychiatry" OR "Geriatric Nursing" OR "Old adult*" OR "Old people" OR "Older adult*" OR "Older people" OR "elder*" OR "Dementia" OR "Senior*" OR "Geriatric*" OR "ages 65" OR "aged 65" OR "65 and over" OR "ages 70" OR "aged 70" OR "70 and over" OR "ages 75" OR "aged 75" OR "75 and over" OR "ages 80" OR "aged 80" OR "80 and over" OR "ages 85" OR "aged 85" OR "85 and over" OR "ages 90" OR "aged 90" OR "90 and over" OR "elde*" OR "frail*" OR "geriatri*" OR "old age*" OR "oldest old*" OR "senium" OR "very old*" OR "septuagenarian*" OR "octagenarian*" OR "nonagenarian*" OR "centarian*" OR "centenarian*" OR "supercentenarian*" OR "older subject*" OR "older patient*" OR "older age*" OR "older men" OR "older male*" OR "older woman" OR "older women" OR "older female*" OR "older population*" OR "older person*")

AND

Section 2A:

AB=("Group homes" OR "Group living" OR "Group dwelling*" OR "Collective living" OR "Homelike" OR "Home like" OR "Small scale" OR "Smallscale" OR "Small unit*" OR "Care farm*" OR "Green care" OR "Green dementia care" OR "Social farm*" OR "Green hous*" OR "dementia friendly" OR "homeshar*" OR "Dementia villag*" OR "Cohous*" OR "shared hous*" OR "communal liv*") OR TI=("Group homes" OR "Group living" OR "Group dwelling*" OR "Collective living" OR "Homelike" OR "Home like" OR "Small scale" OR "Smallscale" OR "Small unit*" OR "Care farm*" OR "Green care" OR "Green dementia care" OR "Social farm*" OR "Green hous*" OR "dementia friendly" OR "homeshar*" OR "Dementia villag*" OR "Cohous*" OR "shared hous*" OR "communal liv*")

OR

Section 2B:

AB=("Housing for the Elderly" OR "Institutionalization" OR "Long-Term Care" OR "Geriatric Nursing" OR "Residential Facilities" OR "Environment Design" OR "Nursing homes" OR "24-hour care facilit*" OR "care home*" OR "care institution*" OR "extended care facilit*" OR "geriatric center*" OR "geriatric centre*" OR "geriatric facilit*" OR "geriatric home*" OR "geriatric institution*" OR "geriatric unit*" OR "group home*" OR "home for the aged" OR "institutionalized elderly" OR "intermediate care facilit*" OR "long term care" OR "LTCF*" OR "nursing center*" OR "nursing centre*" OR "nursing facilit*" OR "nursing home*" OR "nursing institution*" OR "nursing unit*" OR "old age home*" OR "residential care" OR "residential facilit*" OR "skilled nursing facilit*" OR "Homes for the elderly" OR "Home for the elderly" OR "Home for elderly" OR "Homes for elderly" OR "assisted living facilit*" OR "continuing care retirement communit*" OR "old folks home*" OR "old folks' home*" OR "old people's home*" OR "rest home*" OR "retirement facilit*" OR "retirement home*" OR "age friendly communit*"

OR "Livable communit*" OR "Intergenerational living" OR "Intergenerational housing" OR "Senior hous*" OR "special care unit*" OR "Special care facilit*") OR TI=("Housing for the Elderly" OR "Institutionalization" OR "Long-Term Care" OR "Geriatric Nursing" OR "Residential Facilities" OR "Environment Design" OR "Nursing homes" OR "24-hour care facilit*" OR "care home*" OR "care institution*" OR "extended care facilit*" OR "geriatric center*" OR "geriatric centre*" OR "geriatric facilit*" OR "geriatric home*" OR "geriatric institution*" OR "geriatric unit*" OR "group home*" OR "home for the aged" OR "institutionalized elderly" OR "intermediate care facilit*" OR "long term care" OR "LTCF*" OR "nursing center*" OR "nursing centre*" OR "nursing facilit*" OR "nursing home*" OR "nursing institution*" OR "nursing unit*" OR "old age home*" OR "residential care" OR "residential facilit*" OR "skilled nursing facilit*" OR "Homes for the elderly" OR "Home for the elderly" OR "Home for elderly" OR "Homes for elderly" OR "assisted living facilit*" OR "continuing care retirement communit*" OR "old folks home*" OR "old folks' home*" OR "old people's home*" OR "rest home*" OR "retirement facilit*" OR "retirement home*" OR "age friendly communit*" OR "Livable communit*" OR "Intergenerational living" OR "Intergenerational housing" OR "Senior hous*" OR "special care unit*" OR "Special care facilit*")
AND
TI=("Organizational innovation" OR "Diffusion of Innovation" OR "Inventions" OR "Knowledge Management" OR "Health Care Reform" OR "innovat*" OR "Original" OR "visionar*" OR "chang*" or "alternative*" OR "modernization*" OR "modernisation*" OR "cutting edge" OR "leading edge" OR "inventi*" OR "Ingenious" OR "reform*"


3

Chapter 3

Depressive signs and daily life of residents when relocating from a regular to an innovative nursing home

This chapter was published as:

Brouwers, M., de Boer, B., Groen, W. G., Gabrio, A., Verbeek, H., on behalf of the RELOCARE consortium. Depressive signs and daily life of residents when relocating from a regular to an innovative nursing home. Journal of the American Medical Directors Association. 2024;25(12):105298

ABSTRACT

Objectives: In this study, we examine how residents are affected by moving from a regular nursing home into an innovative living arrangement. In the past decade, a culture change has taken place, leading to rapid developments of innovative living arrangements that aim to change the physical, social, and organizational environment to better suit the needs of older adults needing 24-hour care. This has inevitably led to more group relocations in long-term care. Insight into the change in residents when relocating is lacking.

Design: An observational longitudinal study.

Setting and Participants: Four Dutch care organizations in which 5 relocations took place from a regular to an innovative living arrangement. Residents (N = 97) requiring 24-hour care who were relocated from a regular nursing home to an innovative living arrangement were included.

Methods: Data were collected 1 month before, 2 weeks after, and 6 months after relocating. Depressive signs and symptoms, cognitive functioning, and dependence in activities of daily living were measured using questionnaires. Furthermore, the daily lives of the residents were assessed using ecological momentary assessments.

Results: Overall, no long-term change in depressive signs and symptoms, cognitive functioning, and dependence in activities of daily living was found when relocating. Furthermore, the daily life of residents was not different 6 months after moving. Relocating was accompanied by a significant short-term increase in depressive signs and symptoms in 2 out of 4 locations ($P < .001$).

Conclusions and Implications: This study shows that relocating to an innovative living arrangement does not lead to long-term changes in residents. There are indications that there might be a short-term change in depressive signs and symptoms that could be prevented by considering the approach and context. More research is needed into the changes in the physical, social, and organizational environment that are necessary for a positive impact on the daily lives of residents.

Keywords: *Relocations, innovative housing with care, nursing, dementia*

INTRODUCTION

In the past decade, a culture change has taken place, with a shift toward creating living environments that address the needs of residents and promote their autonomy. This culture change has led to innovative living arrangements in which drastic changes are made to the physical (eg, built environment, outdoor areas, and sensory elements), social (eg, interactions with others in the environment), and organizational (eg, how care and services are delivered) environment.[1-3] As residents living in nursing homes are dependent on others for their care, it is important to align their living environment with their needs in order to maximize their independence.[4-7] Furthermore, aspects of the physical environment, such as the number of residents, whether the nursing home has a homelike character, and access to outdoor spaces, can enhance the quality of life and the care of residents.[8,9] As a result, more innovative living arrangements are being developed, by rebuilding old nursing homes or building new facilities.

The increasing number of newly built innovative living arrangements inevitably leads to an increase in group relocations.[10] Previous studies suggest that relocations may have negative effects on both physical and mental health. Residents experience stress, uncertainty, loss of control, and negative health outcomes, including increased fall rates and depression.[11-14] However, despite the possible negative impact of relocating, changing the environment of a regular nursing home to an innovative living arrangement may lead to better health outcomes in the long run. Only a few studies have investigated the impact on residents who moved from a traditional nursing home environment into a small-scale, homelike arrangement. These studies suggest that, after the move, quality of life indicators improved,[15,16] there was less decline in cognition,[17] and there was more social engagement.[18,19] As innovative living arrangements are developing fast and relocations are becoming more common, it is important to gain more insight into the impact of relocating into an innovative living arrangement. Therefore, in this study we investigate the changes in depressive signs and symptoms, cognition, physical functioning, and daily life for residents who relocate from regular nursing homes to innovative living arrangements.

METHODS

Design

A longitudinal observational study was conducted, including 3 measurements: a baseline measurement 4 weeks before relocating (M1), and 2 follow-up measurements taken,

respectively, 2 weeks after (M2) and 6 months after relocating (M3). To ensure transparency and rigor, the STROBE checklist was used for reporting.[20]

Settings and Participants

Four long-term care locations that experienced a group relocation from a regular nursing home to an innovative living arrangement were included. See Table 1 for a detailed description of the locations (before and after). Regular nursing homes that were aiming to implement an innovative long-term care arrangement were selected. For a location to qualify as an innovative location, the study required there to have been an a priori deliberate intent to radically change the physical, social, and organizational environment by moving to the new location. All the locations provided 24-hour care for older adults with complex care needs. In total, 5 relocations took place, with 2 involving the same original location but taking place in separate phases. All residents who were relocating from the old to the new innovative location were eligible for participation. Residents relocating to another regular nursing home or who were terminally ill were excluded. No power analysis was performed due to the hypothesis-generating and explorative nature of our study.

Table 1. Description of locations

Location	Description of old location	Description of new location
Location 1	Residents lived on the second floor of a large building. The setting had a spacious corridor with rooms positioned side by side. The residents were placed together in smaller groups. Their possessions were packed prior to the move, and the relocation was portrayed as a holiday.	The goal was to establish an environment focusing on dementia-friendly living, guided by the principle of enhancing the quality of days rather than merely adding days to life. Situated within the village, this larger building features a lively 'living kitchen'. Following the relocation, several staff members remained at the new site for approximately one week, including overnight stays, to assist the residents in acclimatizing to their new surroundings.
Locations 2a and 2b	A large nursing home with multiple wards, with a large pool of staff members, accommodating approximately 30 residents. Residents were notified by both staff and family members and stayed in a	Small residences each accommodating seven residents, within a park-like setting. This setting has the objective of promoting freedom of movement for residents and delivering more person-centered care. Following the relocation, the staff tried to make the environment

Table 1 (continued)

Location	Description of old location	Description of new location
	spacious hall on the day of the relocation.	as familiar as possible to aid residents in adjusting.
Location 3	A building resembling an apartment building, with five floors and one kitchen/living room and accommodation for approximately seven residents per floor. Prior to the move, residents had the opportunity to visit the new premises and select the wall color for their rooms.	A care setting that incorporates aspects of green care farms in the countryside, complete with outdoor walking paths and animals. Emphasis is placed on fostering residents' strengths and independence, and engaging collaboratively with them in activities. Following the relocation, staff members underwent several training courses on supporting residents with dementia to maintain as much independence and active engagement as possible.
Location 4	A large care facility with multiple smaller units. The location has a large pool of staff members. Residents reside in smaller groups within the ward. The original building was undergoing renovation while residents were still residing there. On the day of the relocation, they were accommodated in the nursing home's dining area.	A small-scale, two-level, care facility in an urban location. It prioritizes fostering a homely atmosphere and actively involving family members in daily activities. Following the relocation, the staff made particular efforts to cultivate a calm and peaceful environment.

Measures

Depressive signs and symptoms were assessed with the Cornell scale for depression in dementia (CSDD). This consists of 19 items that are scored on a 4-point scale with 5 domains: mood-related signs, behavioral disturbance, physical signs, cyclic functioning, and ideational disturbance.[21] Scores range from 0 to 38, with higher scores indicating more depressive symptoms. A score of 8 (or higher) is accepted as indicative of having depressive symptoms.[21]

Cognitive functioning was assessed with the standardized minimental state examination (S-MMSE) and the cognitive performance scale (CPS).[22,23] The S-MMSE consists of 19 items; scores range from 0 to 30, with higher scores indicating better cognitive functioning.[22] The CPS

consists of 4 items; scores range from 0 to 6, with a higher score indicating lower cognitive functioning.[23]

Activities of daily living (ADLs) were assessed with the ADL questionnaire (ADL-Hierarchy, part of the RAI-MDS) and the Barthel Index.[23,24] The ADL-Hierarchy (ADL-H) questionnaire has 4 items, which relate to mobility, eating, toilet use, and personal hygiene. Scores range from 0 to 6 with higher scores indicating more dependence for ADLs.[23] The Barthel Index consists of 10 questions; scores range from 0 to 20, with higher scores indicating more independence in ADLs.[24]

The daily life of the residents was observed using the Maastricht Electronic Daily Life Observation Tool (MEDLO).[25] This is an electronic observation tool, based on ecological momentary assessments (EMA).[26] Four domains of daily life are measured: daily activities, physical environment, social interaction, and emotional well-being. Residents were observed on 2 mornings (07:00-11:30), 2 afternoons (11:30-16:00), and 2 evenings (16:00-20:30). Every 20 minutes, between 8 and 14 residents were observed for approximately 1 minute in a random sequence. After every observation minute, the observer scored (1) the activity in which the resident was involved (either active or non-active), (2) the location of the resident at that moment, (3) the resident's engagement with the activity, (4) how physically active the resident was at that moment, (5) the amount of social interaction (eg, was there interaction? with whom? what type of interaction?), and (6) the resident's emotional well-being (eg, mood, agitation).

Procedure

Data collection took place from May 17, 2021, to November 18, 2022. During M1 (4 weeks before relocating), M2 (2 weeks after relocating), and M3 (6 months after relocating), residents were observed using the MEDLO over a period of 2 to 4 weeks, depending on the group size. Staff members who were most familiar with the residents filled in the CPS, ADL-H, Barthel Index, and CSDD. The first author or a trained research assistant conducted the observations and S-MMSE.

Analyses

Descriptive statistics were computed for all measurements; the mean and standard deviation of cognitive functioning, ADL dependence, and depressive signs and symptoms were recorded. Percentages of event occurrence ("yes" responses) were calculated for daily life events. The

occurrence of an event indicated whether a resident participated in a certain activity, was present in a certain location, was involved, was socially active, was physically active, or experienced a certain mood or level of agitation. Preliminary analyses were conducted to assess the potential confounding effect of key variables on the Cornell Scale for depression in dementia, percentage of passive/ purposeless behavior, and percentage of social interaction. The variables location, cognitive performance, and activities of daily living were considered to be controlling variables. After formal assessment, it was evident that there was a clear general effect-modification between time and location, therefore the results of all analyses were stratified by location.

A linear regression model was used to estimate changes in depressive signs and symptoms from M1 to M2 or M3, after controlling for the potential confounders of changes from baseline in cognitive functioning (CPS) and in activities of daily living (ADL-H). The model was run by stratifying location in order to account for the potential effect-modification of this variable. Adjusted results were derived in terms of point estimates and uncertainty measures for linear combinations of the model parameters to derive estimated changes in depressive signs and symptoms from M1 to M2 and M3, adjusted for all predictor variables in the model and separately reported by location. The statistical significance of the results was assessed using p values and corresponding 100 (1-α) % confidence intervals. Correction for multiple testing was applied using a Bonferroni approach for a total of 8 tests and an initial significance level of $\alpha = 0.05$, resulting in a corrected significance level of $\alpha^* = 0.0063$.

In order to gain insights into the changes from the baseline in the percentage scores for “passive/purposeless behavior” and “social interaction” daily life events, secondary exploratory analyses were conducted. A linear regression model was used to estimate the change in, respectively, the percentage scores for “passive/purposeless behavior” or “social interaction” events from M1 to M2 or M3, after controlling for the same predictors as in the primary analysis. The results from the model were point estimates and uncertainty measures for linear combinations of the model parameters and were used to derive estimated changes in the percentage scores for “passive/ purposeless behavior” or “social interaction” events from M1 to M2 or M3, adjusted for all predictor variables in the model and separately reported by location. The statistical significance of the results was assessed using p values and corresponding 100 (1-α) % confidence intervals. No correction for multiple testing was performed because of the exploratory nature of these secondary analyses. Therefore, a significance level of $\alpha = 0.05$ was considered significant. The software IBM SPSS Statistics

(Version 27) was used for cleaning and preparing the data and R (version 4.2.2.) was used for performing all analyses.[27]

Ethics

The Medical Ethics Committee of Zuyderland confirmed that the regulations under the Medical Research involving Human Subjects Act do not apply to this study (registration number: METCZ20210065). All legal representatives of the residents received information concerning the study and provided written consent.

RESULTS

Ninety-seven of the 125 eligible residents (participation rate: 77.6%) were included. See Figure 1 for the flowchart of the participant rate per measurement occurrence.

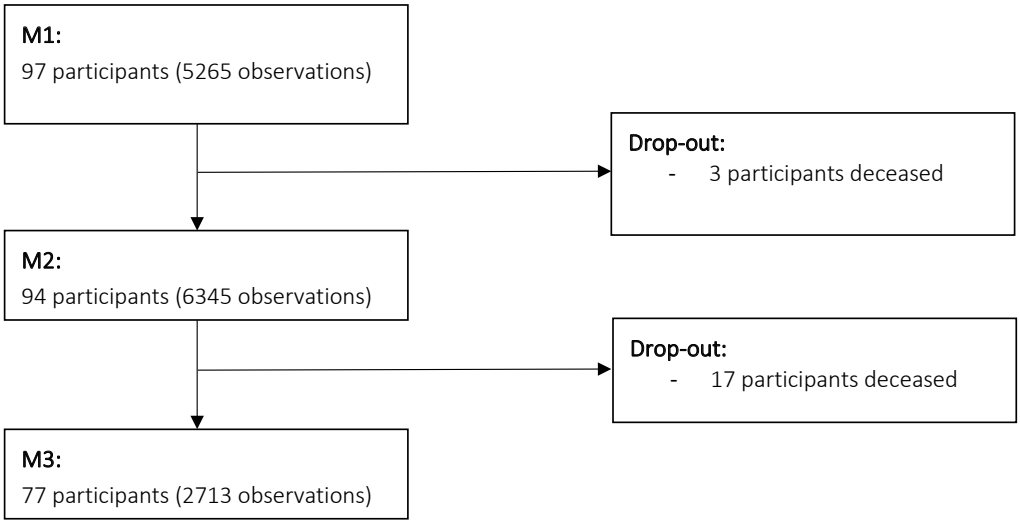

Figure 1.* Flowchart of participants throughout the study.**As a result of COVID and the consequent lockdowns, not all MEDLO observation sessions could be continued. During follow-up two, observations at two locations were cancelled. Furthermore, at the other locations some observation sessions also had to be cancelled for reasons related to lockdowns (mostly at the baseline), but all participants were still observed for a minimum of three day-sessions (one morning, one afternoon, and one evening). When looking at three versus six observation days, no large differences in scores were found.

Sample Characteristics

No large differences were found at the baseline between the characteristics of the residents at the different locations, except for the scores of the CSDD (see Table 2). Residents of location 2b already seemed to be having more signs and symptoms of depression than residents at the other locations at baseline (see Table 2). Based on the results of exploratory analyses and input

from experts, the location of the participants was identified as a variable of interest. Therefore, the decision was made to run all analyses per location instead of assuming a common relocation effect on participants across all locations.

Depressive Signs and Symptoms, Cognition, and ADLs

No differences in cognitive functioning or ADL dependence were observed over time. Immediately after the relocation, 52.9% of all residents had a CSDD score of 8 or higher. Before the relocation, and half a year after the relocation, the percentages were, respectively, 34.5% and 40.0%. The results of the primary analysis, looking at the individual locations, are presented in Table 3. None of the residents at any location seemed to experience a long-term change in their depressive symptoms from the relocation. However, the residents of locations 2a and 3 experienced significantly more depressive symptoms 2 weeks after the relocation when compared with the baseline measurement, indicating a short-term change (respectively CI (4.17, 10.56), $P < .001$ and CI (0.87, 6.73), $P < .001$). No significant short term difference was found for location 2b and 4.

Daily Lives of Residents

Table 4 presents the descriptive statistics. Overall, the residents were mostly engaged in passive/purposeless activities in all measurements (M1 = 40.1%, M2 = 43.9%, M3 = 47.6%), while being actively engaged with the activity/environment (M1 = 86.5%, M2 = 88.2%, M3 = 84.2%) and engaging in little to no physical activity (M1 = 89.5%, M2 = 89.2%, M3 = 93.2%). The residents were engaged in social interaction around 20% of the time (M1 = 23.5%, M2 = 20.2%, M3 = 21.4%); this interaction was mostly with staff members and was of a positive nature. The residents showed mostly neutral signs of mood and no agitation across all 3 assessment moments. When looking descriptively at the location of the residents, it appears that there was a decline in the amount of time spent alone at locations 1 and 2b, but this trend was not visible at locations 2a, 3, or 4. All locations except location 4 seemed to show a small increase in the amount of time spent outside at M2.

Overall, the residents did not experience a significant change in passive/purposeless behavior over the whole of the relocation process, except at location 3 (see Table 3). Location 3 showed a significant increase in the amount of passive/purposeless behavior from the baseline to immediately after the relocation (CI (0.03, 0.15), $P = .006$) and 6 months after the relocation (CI (0.00, 0.16), $P = .041$). The same trends are visible for social interaction, with residents at most locations experiencing no significant change in the amount of social interaction. However, at

location 3 there was a significant decline in the amount of social interaction (CI (-0.14, -0.06), *P* < .001), whereas at location 4 there was a significant increase in the amount of social interaction (CI (0.01,0.12), *P* = .014) when comparing the baseline to immediately after the relocation.

Table 2. Residents' sample characteristics, cognitive functioning, ADL and Mood scores

	Location 1 (N = 7)			Location 2a (N = 27)			Location 2b (N = 13)			Location 3 (N = 29)			Location 4 (N = 21)			Total (N = 97)		
	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3
Age, mean (SD)	90.3 (5.3)			83.6 (9.3)			87.3 (4.4)			86.8 (7.1)			88.2 (7.4)			86.6 (7.6)		
Gender, % woman	42.9			66.7			46.2			75.9			76.2			67.0		
S-MMSE, mean (SD)	-*	-*	-*	11.6 (5.6)	10.9 (5.6)	10.0 (5.0)	11.0 (7.0)	10.9 (7.3)	10.4 (6.4)	10.9 (6.0)	10.2 (4.5)	8.8 (5.8)	8.1 (8.6)	9.8 (7.9)	12.0 (8.3)	10.4 (6.7)	10.3 (6.2)	10.2 (6.4)
CPS, mean (SD)	3.3 (2.2)	2.6 (2.4)	3.9 (2.3)	2.9 (1.4)	3.6 (1.4)	3.2 (1.1)	3.0 (1.7)	2.9 (1.2)	3.4 (1.3)	2.0 (1.4)	2.8 (1.2)	2.2 (1.1)	3.5 (1.5)	2.7 (2.1)	2.0 (2.3)	2.8 (1.6)	3.0 (1.6)	2.7 (1.8)
Barthel's index, mean (SD)	-*	-*	-*	10.2 (6.1)	10.4 (6.1)	9.3 (6.0)	10.7 (2.6)	9.7 (4.2)	9.7 (5.4)	11.3 (7.3)	10.6 (6.6)	11.8 (5.2)	9.1 (5.8)	9.2 (6.9)	8.0 (6.6)	10.4 (6.1)	10.1 (6.2)	9.7 (5.91)
ADL, mean (SD)	3.7 (1.1)	4.1 (0.9)	4.4 (1.1)	2.6 (1.6)	2.5 (1.7)	3.3 (1.6)	2.1 (0.8)	2.5 (1.4)	2.4 (1.6)	2.0 (2.1)	2.2 (1.9)	2.3 (1.3)	2.8 (1.7)	3.0 (1.8)	3.4 (1.7)	2.5 (1.7)	2.6 (1.7)	3.0 (1.6)
Cornel's scale for depression in dementia, mean (SD)	-*	-*	-*	4.9 (4.7)	12.5 (5.2)	7.5 (5.7)	11.9 (5.9)	12.3 (8.7)	7.0 (5.8)	5.1 (3.9)	9.4 (5.1)	4.4 (4.3)	7.6 (4.9)	4.4 (5.3)	7.7 (5.2)	6.6 (5.2)	9.5 (6.5)	6.6 (5.5)

*Due to time constraints experienced by location 1, three questionnaires could not be filled in.

Table 3. Estimates (and standard error, se) of depressive symptoms, passive/purposeless behavior, and social interaction changes at all locations with associated adjusted 100(1-α)% confidence intervals, shown in terms of lower (lb) and upper (ub) bound, and p-values.

Time difference	location	estimate	SE	LB	UB	*P*value
Depressive signs and symptoms						
M1-M2	2a	7.37	1.14	4.17	10.56	<.001*
M1-M3	2a	2.42	1.16	-0.85	5.69	.04
M1-M2	2b	0.82	1.51	-3.41	5.05	.59
M1-M3	2b	-3.83	1.49	-8.05	0.40	.01
M1-M2	3	3.80	1.04	0.87	6.73	<.001*
M1-M3	3	-0.81	1.05	-3.78	2.16	.45
M1-M2	4	-2.04	1.21	-5.44	1.36	.10
M1-M3	4	0.73	1.15	-2.53	3.99	.53
Passive/purposeless behavior						
M1-M2	1	0.03	0.06	-0.09	0.14	.65
M1-M3	1	0.03	0.06	-0.10	0.16	.66
M1-M2	2a	-0.04	0.03	-0.11	0.03	.26
M1-M3	2a	-†	-†	-†	-†	-†
M1-M2	2b	0.07	0.05	-0.02	0.17	.14
M1-M3	2b	-†	-†	-†	-†	-†
M1-M2	3	0.09	0.03	0.03	0.15	.006†
M1-M3	3	0.08	0.04	0.00	0.16	.041†
M1-M2	4	0.04	0.04	-0.04	0.13	.29
M1-M3	4	0.04	0.05	-0.06	0.14	.40
Social interaction						
M1-M2	1	0.00	0.04	-0.08	0.07	.90
M1-M3	1	-0.07	0.04	-0.16	0.02	.12
M1-M2	2a	0.00	0.02	-0.05	0.04	.90
M1-M3	2a	-†	-†	-†	-†	-†
M1-M2	2b	0.01	0.03	-0.05	0.08	.65
M1-M3	2b	-†	-†	-†	-†	-†
M1-M2	3	-0.10	0.02	-0.14	-0.06	<.001‡
M1-M3	3	-0.03	0.03	-0.09	0.02	.20
M1-M2	4	0.07	0.03	0.01	0.12	.014‡
M1-M3	4	0.05	0.03	-0.02	0.12	.15

* A Bonferroni correction was applied resulting in an adjusted significance level $\alpha^{\star} = 0.00625$.

† Due to COVID and the consequences of lock-downs, not all MEDLO observation sessions could be continued. During follow-up two, observations at locations 2a and 2b were cancelled.

‡ Significant at the $\alpha = 0.05$ level

Table 4. Daily lives of residents

Aspect of daily life	Category	Total			Location 1			Location 2a*			Location 2b*			Location 3			Location 4		
		% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3
Activity	Passive/ purposeless	40.1	43.9	47.6	49.8	52.6	52.0	38.3	34.9	-	41.2	47.2	-	36.6	45.5	44.1	44.6	49.0	51.5
	Recreational	12.3	10.8	13.0	16.4	9.1	16.3	9.3	12.1	-	7.5	14.8	-	15.6	8.5	11.8	11.8	10.0	13.2
	Social	11.0	10.1	9.4	8.1	10.5	8.1	10.9	10.4	-	13.4	9.4	-	11.7	10.3	9.1	9.4	9.7	11.0
	Eating/ drinking	11.3	12.1	13.7	13.6	13.1	14.7	10.0	11.7	-	8.2	14.1	-	11.4	10.9	14.7	14.4	12.6	11.1
	Domestic	1.3	0.9	1.2	0.2	1.0	2.0	0.4	1.6	-	0.5	0.3	-	2.4	0.9	1.3	1.4	0.3	0.5
	Outdoor	1.6	1.9	1.0	0.5	0.0	0.4	0.6	0.6	-	1.6	1.6	-	2.3	3.7	1.3	2.1	2.6	0.9
	Care	5.3	3.2	3.8	7.1	6.7	5.8	5.1	4.4	-	5.0	4.9	-	6.1	1.3	3.6	3.6	1.5	3.0
	Other	0.2	0.9	0.3	0.0	0.4	0.0	0.5	2.8	-	0.0	0.2	-	0.2	0.1	0.1	0.0	0.1	0.8
	Not observable	5.1	5.2	2.9	3.1	6.5	0.6	6.4	5.9	-	2.7	2.1	-	7.7	7.1	4.4	0.7	3.5	1.6
	Alone in room	11.8	10.9	6.9	1.2	0.0	0.2	18.5	15.7	-	20.0	5.3	-	6.0	11.9	9.6	12.0	10.6	6.3
Engagement	Engaged in activity	86.5	88.2	84.2	76.6	86.2	77.6	88.4	86.3	-	79.1	83.7	-	87.8	91.6	86.5	89.9	90.7	84.8
Location	Private room	41.7	40.3	35.5	61.4	38.4	39.3	45.0	47.3	-	48.0	37.0	-	37.8	31.9	33.3	30.5	42.7	37.1
	Public space	55.8	55.9	61.9	38.6	48.4	59.7	51.8	46.7	-	51.9	61.7	-	59.9	65.1	62.1	65.1	57.2	62.8
	Outside	2.5	3.8	2.6	0.0	13.2	1.0	3.1	6.0	-	0.2	1.3	-	2.3	3.0	4.5	4.5	0.1	0.1

Table 4 (continued)

Aspect of daily life	Category	Total			Location 1			Location 2a*			Location 2b*			Location 3			Location 4		
		% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3	% M1	% M2	% M3
Level of social interaction	Social interaction	23.5	20.2	21.4	30.5	31.9	23.4	24.7	22.0	-	22.0	21.8	-	26.4	15.4	22.2	14.7	17.8	18.4
Social interaction with whom	Staff members	49.0	50.5	63.4	77.9	59.8	70.3	39.8	54.2	-	36.6	45.9	-	50.7	35.4	59.5	55.5	56.7	66.4
	Residents	28.6	30.7	16.8	1.0	22.0	9.0	33.8	22.2	-	49.6	35.9	-	27.5	49.2	18.2	21.0	28.9	20.5
	Family/others	22.4	18.8	19.8	21.2	18.1	20.7	26.4	23.6	-	13.8	18.2	-	21.8	15.3	22.3	23.5	14.4	13.1
Nature of social interaction	Positive	94.7	93.3	93.8	94.9	93.6	94.9	93.5	88.7	-	96.7	94.7	-	94.8	97.2	92.4	95.0	96.2	95.6
Physical activity	Physically active	10.5	10.8	6.8	7.3	12.5	3.9	13.7	11.3	-	14.7	9.7	-	8.8	11.0	8.5	8.6	10.2	5.7
Mood	Positive mood	79.5	80.9	74.3	61.7	72.3	55.2	80.8	72.5	-	78.6	79.3	-	79.5	89.1	81.9	86.0	87.7	74.5
Agitation	Agitation	2.4	2.7	3.1	12.2	5.7	7.0	2.4	4.3	-	0.6	1.9	-	1.5	1.5	1.9	0.9	1.3	2.6

*Due to COVID and the consequences of lock-downs, not all MEDLO observation sessions could be continued. During follow-up two, observations at two locations were cancelled. Furthermore, at the other locations some observation sessions had to be cancelled for lockdown related reasons as well (mostly at baseline), but all participants were still observed a minimum of three day-sessions (one morning, one afternoon, one evening). When looking at three versus six observation days, no large differences in scores have been found.

DISCUSSION

The results from this study indicate that relocating could lead to a short-term change in depressive signs and symptoms. Overall, no long-term change in depressive signs and symptoms was found. When looking at the influence of the changed environment, the study suggests that, in most of the locations studied, the intended positive influence was not, after 6 months, visible in the residents' daily lives. The residents of all but 1 location engaged in the same amount of passive/purposeless activities. In 1 location the amount of passive/purposeless activities even increased significantly over time. Furthermore, the residents engaged in similar amounts of social interaction before and after relocating. Only 1 location showed a temporary increase, 2 weeks after the relocation, in the amount of social interaction.

The increase in depressive signs and symptoms after relocating corroborates the findings of earlier studies on relocations that showed a short-term negative impact of relocations on the emotional outcomes of residents, which tends to normalize again over time.[13] Our results suggest that the context of the relocation process and the new location matters, as not every location showed the same trend in depressive symptoms. Most studies that look into the overall impact of relocations, however, include only 1 relocation, taking place in 1 nursing home.[28-33] Therefore, no comparison between cases can be made. Furthermore, the studies do not include an extensive description of the context of the environment and the relocation process, making it hard to determine which aspects might diminish the negative outcomes, or foster the positive ones. An example of the context, for example, is the preparation for the relocation. Poor preparation is associated with poor health outcomes.[11-14] It remains unclear, however, what preparatory aspects lead to more positive health outcomes.[12]

Despite the possibly negative impact of a relocation, long-term care organizations often aim to develop new locations with a better person environment-fit and therefore to improve the circumstances of their residents. This makes relocating inevitable and necessary in order to optimize long-term care. Organizations often choose not to involve their residents in order to minimize the potential negative impact. However, feelings of not having control over impactful events are related to depressive symptoms and anxiety.[34] Therefore, actively involving residents in the relocation process is important. Furthermore, it can be argued that it is normal to respond to relocating, which is a very stressful procedure, by experiencing negative emotions. Research shows that stress and impactful life events are related to depressive episodes, even in individuals who do not suffer from dementia.[35] Therefore, next to actively

involving residents and optimizing the relocation process, it is important to acknowledge and understand the emotions that are being experienced when relocating.

All the nursing homes in our study focused on changing the physical, social, and organizational environment with the intention of having a positive effect on the daily lives of their residents. Despite this intention, virtually no differences in activities, social interactions, or locations of the residents were found. This suggests that the intended culture change was not accomplished, at least not according to measures of daily functioning of the residents. A comparison of the scores of this study with previous studies using the MEDLO shows that they are more comparable to those for a regular nursing home, than for an innovative living arrangement.[36] It is known that culture change is difficult and that care organizations do not always succeed.[37,38] Besides the physical environment, the social and organizational environment have to change. The changing role of staff members is vital to accomplish this. Staff members need to have or to develop certain competencies, values, and norms.[1,2] Research shows that actively training staff members can lead to a more effective culture change.[39] However, research also shows that differences in active adoption of new roles can differ between sites, and even within sites.[40] This illustrates the challenges that staff face when relocating to an innovative living arrangement. Research shows that goal-directed behavior (eg, actively implementing a new culture) declines and habit-driven behavior increases, when stress is experienced.[41] As relocating is also a very stressful procedure for staff members,[42] they might relapse into old and familiar behaviors and ways of working, making the achievement of a successful culture change challenging.[43]

As the focus of the current study was on group relocations from regular to innovative living arrangements at the time they were occurring, we were not able to measure a relevant control group. Therefore, our results are exploratory and are of a hypothesis-generating nature, and should be interpreted with caution. Furthermore, the baseline measurements took place quite close to the actual moves. As preparations often started early, the residents might already have noticed changes in staff and the environment, affecting the baseline measurements. Having multiple baseline measurements would have given better insights into the a priori functioning. However, as we wanted to study the change in outcome measures when relocating and wanted to avoid measuring the natural decline of residents, the choice was made not to follow the residents too early in time. Furthermore, as our study shows that the change in outcome measures when relocating differs for different locations, a more elaborate description of the context would have been helpful in interpreting the results.

Because of the exploratory nature of this study, we have chosen to perform analyses that are appropriate for this design, taking the lack of control group and smaller sample size into account. However, it is noteworthy that more elaborate analyses should be considered for future controlled studies. Furthermore, as the MEDLO tool is based on ecological momentary assessments, it would be interesting to further explore the possibilities of using the raw EMA data in the analyses instead of aggregating the data.

Future research should focus on performing a larger-scale study, including multiple relocations to innovative living arrangements, with regular long-term relocations as a control group. Furthermore, future research should provide more context for all the relocation processes and gain more insight into the underlying mechanisms that lead either to an increase in depressive symptoms or to no increase. This study shows that culture change has not, yet, been successfully implemented in the locations studied. More insight into the culture change process and how this develops over time should be gained.

CONCLUSIONS AND IMPLICATIONS

The results from this study suggest that a relocation within long-term care can lead to a short-term change in depressive signs and symptoms in residents. Context may matter, as this change was not observed for all relocations. This study emphasizes the importance of taking into account the emotions of residents during the relocation process. Residents tend to experience more negative emotions in the period immediately after the relocation. A recent review, however, has indicated that previous interventions have focused mostly on the preparation phase before the actual relocation, with less attention being paid to the period after relocation.[44] Furthermore, although all locations intended to implement a culture change with the aim of having a positive impact on the daily lives of residents, this is not, yet, visible in the daily lives of residents.

This study shows it is important for involved stakeholders to not only focus on the period before relocating, but to also take the weeks after relocating into account, as this period seems to be particularly stressful for residents. Furthermore, this study shows that achieving a culture change might be a challenging process, emphasizing the need for more knowledge concerning successful implementation.

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4

Chapter 4

Experiences and needs of residents with dementia in relocating to an innovative living arrangement within long-term care: a qualitative study

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ABSTRACT

During the last decade, an increasing number of care organizations have chosen to rebuild or build a new care facility to provide better person-environments for residents with dementia. This has inevitably led to an increase in relocations. This study investigated how residents with dementia experienced a relocation from a regular nursing home to an innovative living arrangement. A qualitative study was performed, using semi-structured interviews and observations. Two nursing homes offering 24 h care to residents with psychogeriatric symptoms that planned a relocation to an innovative living arrangement were selected. Sixteen residents were included. Five themes from the data described what was of importance to residents when moving, including (1) the physical environment of the new location, (2) the belongings of residents, (3) feeling at home, (4) the importance of social contact when relocating, and (5) the need to be engaged in daily life. This study found that the residents were not actively involved in the relocation process, despite the clear desire they expressed to be involved and of importance. As the residents with dementia were able to express what was important to them in this study, relocation processes should focus more on involving such residents and incorporating them within relocation processes.

Keywords: *dementia, innovative housing with care, relocations, care environment, nursing*

BACKGROUND

Relocating within long-term care is often seen as an impactful life event for older adults with dementia.[1] Relocating can lead to an increase in morbidity and mortality and a decline in physical and psychological functioning.[2] Residents often regard a relocation as uncontrollable and involving feelings of uncertainty.[3] Furthermore, studies show that residents can experience a variety of negative emotions, like feelings of loss, deception, fear, frustration, and anger, when they have to relocate involuntarily to a new facility.[4,5] Although some studies have focused on the experiences of residents when relocating within long-term care, these are scarce. [6] Studies that have focused on the experiences of residents included residents without, or with minor, cognitive impairments.

Research suggests that both residents with dementia like those without dementia can experience the same amount of relocation stress, meaning that both groups are equally susceptible to, for example, an increase in depressive symptoms, or a decline in physical functioning.[7,8] It is noteworthy that the perspectives of residents with dementia have been under-researched, despite the fact that actively involving residents in relocation processes might reduce negative outcomes and possibly foster positive results.[5,6,9-11] Research shows that individuals with dementia have a strong desire to remain central in decision-making. Not involving them or asking for their opinion led to feelings of marginalization and exclusion.[12] It is therefore important to understand the precise experiences and needs of residents.

In recent years, a culture change has been taking place with the aim to de-institutionalize long-term care and improve quality of life and care.[13,14] As a result, more and more care organizations have chosen to reconstruct old facilities or build new facilities in order to create environments better suited to provide person-centred care to individuals with dementia. This includes a specifically and sometimes radically redesigned physical environment but may also encompass revamping social and psychological aspects, such as promoting autonomy, self-identity, control, choice, and a socially supportive environment[15,16] These new locations are often referred to as innovative living arrangements.[17] The development of these arrangements has inevitably led to an increase in relocations. How the new environment is shaped, however, affects the individual experiences of residents, which can, in turn, affect their well-being and adjustment following a relocation.[9,18,19] For example, the notion of 'feeling at home', which is often a central value of innovative living arrangements, is an important aspect in evaluating relocations, and can be seen as a marker of a successful relocation process.[15] In order to create

a place that enables at-homeness, knowing what matters to an individual is key.[20-22] Therefore, gaining insight into the subjective experiences of residents during relocations is crucial to help optimize relocation processes and maintain a sense of belonging, meaningfulness, security, and autonomy.

When relocating to innovative living arrangements, residents with dementia encounter several opportunities and challenges, ranging from the promise of enhanced person-centred care to the disruption of established routines and social networks. Yet, despite the growing prevalence of such settings, the experiences of residents with dementia navigating relocations in general, and in particular relocations to innovative living arrangements, remain an under-researched topic. Although including people with dementia as participants in an interview study poses several challenges (e.g., possible difficulties in recall, difficulties in understanding questions and interpreting verbal expressions), studies have shown that it is possible to actively involve this group in research.[23,24] Therefore, this study investigated how residents with dementia experience a relocation from a regular nursing home to an innovative living arrangement.

METHODS

Study design

This research was a qualitative study that used semi-structured interviews and observations based on an interpretative description approach; this approach aimed to capture the individual experiences of the residents and led to practical knowledge concerning relocating.[25,26] To ensure transparency and rigor, the COREQ checklist was used for reporting. Also, this study was preregistered at onderzoekmetmensen.nl.

Setting and participants

In this study, nursing homes were selected that offer 24-hour care to older people with dementia with residents about to relocate from a traditional, large-scale nursing home to an innovative living arrangement. When the new location aimed to substantially change the physical, social, and/or organizational environment and presented itself as an alternative to regular nursing home care, it was regarded as an innovative living arrangement. Based on these criteria, two Dutch nursing homes were selected. Residents of these nursing homes were included when they (1) lived at the specified locations and received 24 h care there and (2) relocated from the old to the new location. All residents interviewed had dementia, and they were all care-dependent and in need of support in daily life.

In this study, a maximum variation sampling method was used, meaning we aimed to include a group of residents with a variety of demographic characteristics, such as gender and age.[27] The sample size depended on data saturation, meaning that no new themes were observed in the data.[28]

Data collection

Our semi-structured interviews and observations occurred between June 2021 and May 2022. Interviews took place 2 weeks after the relocation in order to both prevent recall bias and increase the chance that residents had an active memory of the relocation process. A topic list was used as guidance, but interview questions were adjusted to the individual, meaning that when the participant struggled with answering questions, the questions were either rephrased or adjusted to enable participants to answer the question. The interviewers adapted the questions to the resident and how well they remembered the relocation. If the resident did not remember the relocation, the interviewers focused more on the new location and how this was experienced to gain insight in how the innovative environment was experienced.

The relocation consisted of three phases, including a pre-move phase, the actual relocation, and a post-move phase.[29] The topic list (see Additional File (1)) was based on the following phases: (1) weeks before the relocation (e.g., how did residents experience the weeks before the relocation?); (2) the relocation day (e.g., how did residents experience the relocation day?); (3) two weeks after the relocation (e.g., how did residents experience the first weeks after relocating to the innovative living arrangement?); and (4) the new location (e.g., how did residents experience the new location?).

In order to gain a deeper understanding of the experiences of residents, method triangulation was used by making observations. The researcher (MB) followed residents in the weeks prior to relocation, the relocation day, and the weeks after the relocation. Furthermore, the researcher attended preparatory meetings that focused on the relocation, such as family gatherings, vision meetings, project meetings, and other related meetings. Throughout all observations, informal conversations with residents, family members, and staff members took place and field notes were taken. These field notes described observations of the relocation process, the care environment, how the participants acted and reacted throughout the relocation process, and personal impressions concerning the atmosphere.

When care organizations agreed to participate, the legal representatives of the residents received information concerning the study and were asked to provide written informed consent for the resident's participation. Furthermore, the participants were also asked to provide oral consent for participating in the interview. Interviews took place at the included locations and at the convenience of the residents. Demographic data concerning age, gender, and the care provided were collected.

Data analysis

All interviews were transcribed verbatim and analysed with thematic analysis.[30] An inductive coding approach guided by the research questions was employed.[31,32] Initially, each interview was comprehensively read to get familiar with the content. Subsequently, summaries of the interviews were created to describe their core essence; the summaries were then validated by the participants through a member check. Next, the interviews were coded, in which all relevant text was assigned a corresponding 'code'. Throughout the coding process, the codes remained as close to the text as possible. The qualitative data analysis software MAXQDA was used to facilitate this process.[33] The codes were subsequently organized into distinct themes. Throughout this iterative process, interviews were continually compared, codes refined, and emerged themes crosschecked against existing data. Two researchers (MB, EL) coded the interviews, and 10% of the interviews were coded independently by both and compared in order to ensure analytical rigor. Findings were then discussed within the research team. Field notes were examined using a narrative approach[34], wherein the first author (MB) reviewed the field notes repeatedly to recognize overarching narratives, themes, characters, and events, aligning them with the interview data for further validation.

Ethics

The Medical Ethics Committee of Zuyderland confirmed that the regulations under the Medical Research involving Human Subjects Act do not apply to this study (registration number: METCZ20210065). All legal representatives of the residents received information concerning the study and provided written consent.

RESULTS

Sample characteristics

A total of 16 participants were included in this study. The interviews lasted an average of 19 min (range: 5–44 min). Residents were on average 86 years old (SD = 4.7; range: 77–93). Of the

participants, eight were male and eight were female. The old location of the first nursing home was a large facility that contained two wards. Each ward had about 30 rooms, three long hallways, and two dining rooms. The wards consisted of about 30 residents each and the staff member pool was large, meaning no fixed staff team was appointed to the ward. When relocating, the residents moved to smaller houses in a park-like setting in the same village with the aim to enhance freedom of movement and provide more person-centred care. The old location of the second nursing home selected for this study was a building that resembled an apartment building. It consisted of five floors with about seven residents per floor, with one kitchen/dining room per floor. The residents moved to a location in another village that was inspired by aspects of green care farms (i.e., a facility that combines care and agricultural activities[35]). The aim of the new location was to focus on the strength and independence of residents and instead of doing activities for them, doing activities together.

First, the emotions and experiences of residents when relocating were summarized. Then, five themes emerged from the data, describing what was important for residents when moving (see Table 1 for a summary of findings). The identified themes showed that residents experienced several needs that were of importance throughout the entire relocation process. The themes pertained to (1) physical environment of the new location, (2) belongings of residents, (3) feeling at home, (4) the importance of social interaction when relocating, and (5) the need to be engaged in daily life.

Table 1. Summary of findings

Theme	Residents' perspective	Family/facility support
The physical environment of the new location	Most residents seemed satisfied with the new location. However, some residents were less enthusiastic, placing emphasis on how the location was decorated and wayfinding	The physical environment was designed by an external party. Residents were not actively involved in development and decoration of the new location.
Belongings of residents	The belongings of residents were important. In the weeks before relocating, residents expressed fears of belongings getting lost or being stolen. The absence of belongings led to distress, but presence of their belongings led to increased calmness	Belongings were packed and unpacked by family, staff or the moving company. Residents did not pack belongings theirselves

Table 1 (continued)

Theme	Residents' perspective	Family/facility support
Feeling at home	Feeling at home was important for residents. Both at the old and new location, feeling at home differed between residents. Residents that did not feel at home, indicated not liking the decorations, that the new location felt strang, or wanting to leave.	-
The importance of social contact when relocating	Residents appreciated social contact of both family and staff. Staff were often mentioned in a care related context, except during the relocation day.	Family members joined during the relocation day and visited their relatives after the relocation. Staff mostly provided care related support, but their role changed in providing social support during the relocation day.
The need to be engaged in daily life	Residents wanted to be of use and involved. They wanted to spend their daily lives in a meaningful way, and as independent as possible.	Residents were not involved in decision making concerning the new environment and the relocation process. Furthermore, they received less information concerning the relocation than other stakeholders, such as their relatives.

The emotions and experiences of residents when relocating

The residents who recollected the actual relocation described this experience either as intense or as normal, or positive in hindsight. This corresponded with the observations of the researcher and was visible in the weeks before the relocation and the relocation day itself. Residents expressed mixed feelings, ranging from feelings of stress and agitation, to feeling calm throughout this process. During the relocation day, some residents remained seated in the area where they waited for their belongings to be moved. They played games, listened to music, or talked with one another. Overall, they expressed feelings of calmness and patience. Other residents, however, walked around looking for exits and expressed agitation:

> *(field note, relocation day) ["One resident shows signs of discomfort and agitation. When staff members approach her, she tells them that she does not like this one bit and wants to leave".]*

When first arriving at the new location, most residents seemed to be overwhelmed. They sat in the kitchen in chairs and seemed to withdraw, not being directly able to emotionally respond to the new location and all the stimuli they encountered. Staff members later stated that this withdrawing behaviour in most residents lasted 1 day.

The physical environment of the new location

For residents it seemed easiest to talk about the physical environment of the new location. It seemed to be tangible to them, as they could talk about something they could directly see and feel. Although residents were clearly able to talk about the physical environment and what they either liked or did not like, the physical environment was designed by an external party, meaning that external outside and inside architects were approached to design the building, but also the inside interior. Residents were therefore not actively involved in the development and decoration of the new location. Most residents seemed to be satisfied with the new location, however. Residents liked the new location, stating it was nice, larger, and beautiful. When asking the residents how they liked the new location, one of the residents responded:

> *(resident, 91, interview 03_03) ["Good. Yes, I have a room to myself here so, um. Everything is here to be able to sleep. (…) I like that there is enough space".]*

Most residents also responded positively when they first entered the new location, which they usually saw for the first time during the relocation day, stating that it was beautiful. Some residents were triggered to immediately explore the new location and look around. When talking about the facilities, residents mentioned several things. For example, they liked the restaurant, the food, the bathroom, or how clean the building was. Some residents, however, were less enthusiastic about the new location, placing particular emphasis on how the location was decorated. One resident emphasized that the location looked "too modern" and was missing decorations. The resident missed the old paintings and furniture in the common and private rooms that were always present in his previous homes:

> *(resident, 79, interview 03_02) ["I would hang more paintings. Fill it up a bit, as it is too empty now. Not three paintings, but six".]*

The way residents were able to find their way in the new building also differed. Some residents felt it was easy to find the way in the new building. Other residents, however, struggled with wayfinding, stating that the new hallways were confusing. One resident seemed to be very

confused and lost all orientation in the new building. He felt like the environment was highly repetitive, and all the corners, doors, and colours looked alike.

Belongings of residents

The belongings of residents were important to them. In the weeks before the relocation, residents often expressed the fear of belongings getting lost or being stolen. During the relocation day, multiple residents approached the researcher or staff members, stating that their belongings were stolen. Their belongings were either packed by family, staff members, or the moving company hired for the relocation day. Therefore, residents did not pack any belongings themselves. For some residents, certain items seemed to be essential, especially during stressful events (e.g., the relocation day), the weeks before relocating (e.g., when boxes were packed), or in the weeks after relocating (e.g., when everything was new, and routines were disrupted):

> *(field note, relocation day) ["I see one resident who is sitting between all the boxes that are already packed. She is waiting for staff members to take her to the restaurant for breakfast. She seems to be a bit agitated and actively clinches her purse to her chest. She keeps an eye on this purse throughout the entire day".]*

One resident owned a parrot, and she needed to have this parrot close to her in order to remain calm. When trying to separate her from her parrot to move the parrot during the relocation day, this resulted in a lot of agitation, leading to the decision to let her take the parrot with her. When arriving at the new location, the belongings were already in place, which comforted most residents. Some residents, however, seemed a bit displaced because the furniture was arranged differently, some belongings were still boxed, or they felt like some belongings were still missing.

Feeling at home

For most residents, feeling at home was considered important. At the old location, residents did express feelings of either feeling at home or not. One resident, for example, often asked the researcher (MB) whether she wanted to see her room, which she had decorated entirely to her taste. She displayed clear signs of being proud of her room and surroundings. Another resident showed opposite behaviour, constantly looking for an exit and asking the researcher whether she could help him get back to his own house.

During the relocation day, residents often had to wait in a larger hall so their belongings could be transferred from the old location to the new one. During this day, many residents expressed a desire to go back to their own room in the old location. They were confused when they were told that this was not possible due to the relocation. They referred to the old nursing home as "home" or "my room", indicating that they did associate the old location with home. One resident seemed to experience a sense of resignation from accepting that she was in a nursing home. When the interviewer asked how the resident felt about relocating to another house, the resident seemed to accept her situation, telling the interviewer that she had "come to terms" with her circumstances:

> *(resident, 85, interview 12_03) ["I have accepted the situation: I've been helped. It had to happen this way. That is what I think. (…) I've come to terms with it".]*

Residents who reported they felt at home indicated that it felt like home immediately after the relocation and that they did not even have to get used to their new environment. The residents who said they did not feel at home, however, indicated that they did not like the decoration of the location, the new location felt strange, or they wanted to go to their original homes where they still lived independently:

> *(resident, 79, interview 03_02) ["I like upholstered furniture, like the way it used to be, I'm used to that (…) and now I don't have that anymore. I've worked for this for years and then you get transferred to another ward, you cannot go back to your own home. (…) No, I do not feel at home here".]*

Some of the residents recognized the village the new building was situated in, as it was the village they had lived in for most of their lives. Residents who recognized the village from their past seemed enthusiastic about being back in their "hometown". Residents that recognized the village' name were calmer throughout the relocation process because they often felt happy going "back home", and because it felt known and familiar.

The importance of social contact when relocating

Most residents also mentioned the importance of having social contact throughout the relocation process. Residents described the importance of having social contact with staff members, family members, and/or fellow residents. When talking about the staff, most residents indicated they were satisfied with the way staff members were helping them with care-related tasks. They often referred to staff members as individuals who help and support

residents. They were almost never referred to in a social context, meaning that the interactions residents had with staff were mostly care-related. This was in line with what the researcher observed in the weeks before the relocation and the weeks after the relocation. Staff members did engage in social contact with residents, but mostly with a care-related reason (e.g., asking them if they wanted coffee, asking them to take medication). However, during the relocation day, the social contact that residents had with staff members seemed more of a comforting nature, paying attention to their needs during the relocation day. When residents felt upset, they searched for comfort by approaching staff members, and staff members actively comforted these residents. It was evident that residents needed this support throughout the day. The residents who did not display agitation were actively involved in small talk or entertained by playing games or listening to music together. Music appeared to be a strong binding factor between residents and staff. Throughout all observation moments, music was often used as topic of conversation, a way of comforting residents, or as an activity of singing together. When discussing family members, residents almost always referred to them in a social context, indicating they enjoyed having family over in general, like going out to a restaurant together, for example. Some residents mentioned that family members helped in the relocation process, either by physically relocating belongings, or emotionally, by helping the resident get accustomed to the new location:

> *(resident, 89, interview 04_03) ["Yes, I had to get used to it, of course. But there were people who wanted to visit me. I found that quite nice".]*

When talking about fellow residents, some indicated they could get along well with the fellow residents; others either indicated not having a lot of contact with fellow residents or not being able to talk properly to them. In the latter case, residents noticed that the fellow residents acted "differently". For example, residents who were in an earlier stage of dementia acknowledged that fellow residents had dementia or described them as hard to connect with:

> *(resident, 89, interview 05_03) ["That is what happens with dementia – suddenly you do not recognize people anymore. You have to understand that, and you cannot judge, either. You cannot judge the people who are there. You cannot; they have dementia. (…) You have to accept that and remain reasonable and think: 'Yes, glad that has not affected me yet'".]*

The need to be engaged in daily life

Residents showed signs of wanting to be of use and involved, but despite this fact, they were not actively involved throughout the relocation process. They did not have a say in how their new environment would look like; they were not involved in the packing or other preparatory aspects; and they received less information concerning the relocation than, for example, their relatives. Residents expressed a desire to remain engaged and relevant. When talking to the researcher, residents often talked about their jobs or households and how hard they had to work. It was important for them to emphasize that they were independent, able to earn enough money, keep their houses clean and proper, and raise their family. Multiple residents, for example, expressed this also by their behaviour, by actively helping staff members in household chores or by taking care of fellow residents:

> *(field note) ["One resident is helping her fellow resident. She slices the crust of the bread and asks the fellow resident whether she would like something to drink".]*

Administrators at both locations had the intention to provide a larger and more interactive outside area in order to create more opportunities to be outside and engage in outside activities. However, despite the clear desire residents expressed in being outside and active, no large differences in the amount of time spent outside was observed despite the fact that most residents stressed the importance of staying active and engaged during the day, being outside, and being able to do what one wants to do. Some residents liked music, others liked helping the staff with household tasks, but in general, when asked what residents liked to do during the day, "walking outside" was mentioned the most. There seemed to be a need to be outside and a need to maintain physical activity:

> *(resident, 85, interview 12_03) ["He (staff member) had to put on the jacket. 'Don't you have a jacket?' he asks. I say, 'Yes.' 'Come', he says, 'then let's go'. Then he takes a wheelchair, and he places me in it. And then he goes for a walk with me. (…) That's something I need to have".]*

DISCUSSION

In this study we aimed to investigate how residents with dementia experienced a relocation from a regular nursing home to an innovative living arrangement. Overall, we found that although residents showed clear needs concerning the relocation process, they were not actively involved. When residents described the emotions they experienced throughout the

relocation process, these ranged from negative to positive. Furthermore, certain themes appeared to be of importance to the residents, including the physical environment of the new location; their belongings; whether they felt at home at the new location; the social contact residents had with their environment when relocating; and the need to be engaged in daily life.

Innovative living arrangements are designed to prioritize values like autonomy, freedom of choice and independence by normalizing daily life (e.g., forming a household with residents and staff) and offering choice.[17] However, these values were not obviously reflected in this study's relocation process, as residents were not involved in decision-making throughout the relocation process. When considering the two cases included in this study, the building and interior were all designed by external parties and residents did not have a say in the creation of the physical environment or in how the relocation process (e.g., packing bags, the relocation day) was planned. Research shows that involving residents in the relocation process can lead to more positive outcomes.[5,6,9,11] Furthermore, autonomy has been considered important for residents and might have an influence on the experienced quality of life.[36,37] Relationships between staff and residents are very important and can either inhibit or promote autonomy in residents with dementia, however.[38] Thus, staff have a crucial role to play in promoting autonomy during relocations.

Involving residents, however, is not necessarily easy, as struggles between offering freedom and ensuring safety can arise. Thus, withholding information is a frequently used strategy within nursing home care for residents with dementia in order to reduce anxiety, stress, or other negative emotions.[39] Previous studies have shown that although residents with dementia value participation in decision-making, they often lack the opportunity.[40] In line with the literature, both included care organizations in this study chose the tactic of organizing the relocation without the active involvement of residents to minimize relocation stress. However, a relocation is stressful for staff as well, and some research showed that how staff acts and feels impacts the well-being of residents and possibly causes stress for residents either way.[41] Therefore, the strategy of withholding information and not involving residents might not be as effective as expected.

The residents stressed the importance of feeling at home. Research shows that the subjective experience of residents and the innovative properties of the new environment shape their overall well-being and adjustment following relocation[9,18], and especially the presence of a 'homey' feeling is important.[19] Some research has shown that social and psychological aspects

like autonomy, self-identity, control, choice, and a socially supportive environment are necessary to create feelings of home.[15,16] In order to be able to create a place that enables at-homeness, knowing what matters to an individual and helping residents feel like they still matter is key.[20-22] Within innovative living arrangements, fostering 'a sense of home' is often central to the care philosophy, emphasizing individualized approaches that prioritize residents' preferences, routines, and social interactions.[17] Past research on the impacts of or improvement of relocations within long-term care mainly focused on physical and mental health outcomes (e.g., depression) of residents, thereby neglecting the importance of feeling at home[6,42] despite the clear desire that residents generally show in needing to feel at home. More emphasis might be placed on how to create a home when relocating to a new location instead of only attempting to diminish the negative emotions of residents (and staff) throughout the relocation process.

Implications for research and practice

This study showed that residents with dementia can communicate their needs and wishes concerning relocation processes. They did not emphasize matters specifically related to the upcoming innovation and culture change, but instead focused on overall, more general needs. This implies that it is important to particularly emphasize these overall needs when relocating towards an innovative living arrangement. Healthcare professionals might optimize relocation processes by actively involving residents and adhering to the needs and wishes they express. First, healthcare professionals should place more emphasis on shared decision-making, by including residents throughout the relocation process. Furthermore, they could create a sense of home, for instance by packing boxes together and involving residents in the design and decoration of new locations. Third, gaining insight into the individual preferences and wishes of residents is important for optimizing the relocation process. As most of the related interventions have focused mostly on the preparatory phase, more emphasis should be placed on the phase after relocation, where the residents and staff might work together on creating a feeling of home.

Actively involving residents with dementia, however, can be seen as a challenge by staff. Therefore, future research should explore how to optimally involve residents and provide tools and aids for staff members and other stakeholders. Furthermore, we encourage future researchers to explore best practices concerning the planning of the relocation phase, and the needs and wishes of residents should ideally be represented in these best practices.

Methodological considerations

In order to capture the 'lived experiences' of the relocation process, we decided to interview the residents 2 weeks after the actual relocation day. Therefore, the interviews were planned as close as possible to the phenomenon of interest. However, planning the interviews later in time and observing the residents longitudinally might have led to additional useful insights, like additional insights into how residents were supported in getting used to their new environment and whether their needs and preferences changed over time. Although the participants who suffered from dementia often provided short answers (e.g., due to recall issues or difficulties with speech), we were able to capture the experiences of residents. Finally, due to our employment of the method of triangulation, more context was provided through observations and informal conversations.

CONCLUSION

With this study we showed that it is important to involve residents throughout the relocation process, as residents with dementia were able to express what was important to them. Both healthcare professionals and policy officers should actively involve residents with dementia throughout the relocation process. Instead of only diminishing negative emotions, the relocation process should focus also on increasing the involvement of residents in order to be able to increase the residents' autonomy and help the residents continue to feel at home.

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APPENDICES

Appendix 4A: Residents' experiences of relocation process

Ervaringen van bewoner rondom de verhuizing		
Inleiding interview: Ik wil het graag met u hebben over de verhuizing die heeft plaatsgevonden. Ik ben vooral geïnteresseerd in hoe u deze verhuizing heeft ervaren en wat u als positief en negatief hebt ervaren tijdens het verhuizen. Hier zullen de meeste vragen dan ook over gaan. Graag zou ik willen beginnen met een brede algemene vraag: Hoe bevalt uw nieuwe huis?		
Hoofdvraag	**Interviewvragen**	**Categorie**
Hoe heeft de bewoner het verhuizen van of naar een innovatief woonzorgconcept ervaren? **Welke aspecten heeft hij/zij als negatief ervaren en welke als positief?**	Hoe bevalt uw nieuwe huis?	Initiële vraag
	Hoe is de aanloop naar de verhuizing verlopen? • Wat vond u van de oude locatie? • Wat de reden van uw verhuizing? Is de verhuizing vrijwillig of niet? • Op welke wijze werd u voorbereid op de verhuizing? • Wanneer werd u geïnformeerd over de verhuizing? • Wat vond u van het nieuws dat u ging verhuizen? • Heeft u de nieuwe locatie voor de verhuizing gezien en/of bezocht? • Zo ja, hoe heeft u dit bezoek ervaren? • Hoe heeft u de weken voor het verhuizen ervaren?	Aanloop verhuizing
	Hoe is de verhuizing zelf verlopen? • Zou u me stap voor stap uit kunnen leggen hoe de verhuizing is verlopen? (Bijvoorbeeld, hoe zijn spullen verhuist, welke wijze van vervoer, samen met andere bewoners of alleen verhuist etcetera) • Vond u de verhuizing goed georganiseerd? Zo ja, waarom wel? Zo nee, waarom niet? • Hoe heeft u de verhuizing ervaren?	Verhuizing
	Hoe is het gewennen aan uw nieuwe huis verlopen? • Hoe heeft u de eerste week na de verhuizing ervaren? • Op welke wijze werd u geholpen aan de nieuwe omgeving te wennen?	Nasleep verhuizing

Appendix 4A (continued)

Ervaringen van bewoner rondom de verhuizing		
Hoofdvraag	**Interviewvragen**	**Categorie**
	Hoe bevalt de nieuwe omgeving? • Hoe bevalt de nieuwe indeling van de gebouwen? • Hoe bevalt de nieuwe werkwijze van het personeel? • Hoe bevallen de nieuwe faciliteiten?	Nieuwe locatie


5

Chapter 5

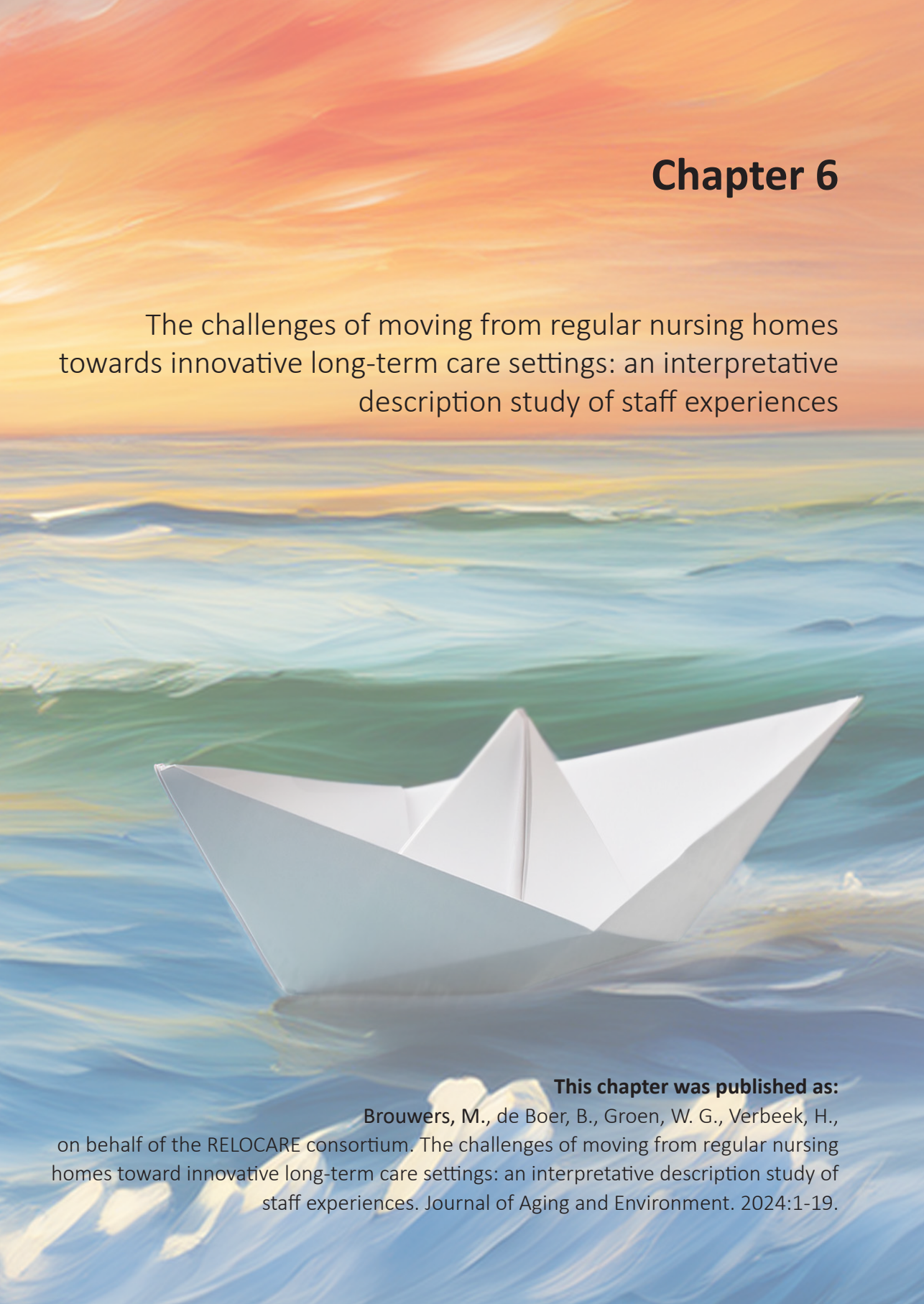
The experiences of family caregivers whose relative is relocating from a regular nursing home to an innovative living arrangement: a qualitative study

This chapter is submitted for publication


6

Chapter 6

The challenges of moving from regular nursing homes towards innovative long-term care settings: an interpretative description study of staff experiences



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ABSTRACT

This study examined how staff experiences a relocation from a regular to an innovative living arrangement and what procedures are followed. Semi-structured interviews and observations were conducted. Staff (N=41) were included if they worked at the selected locations (N = 3). Staff reported feeling lost physically and emotionally. They stressed the importance of constructive communication and collaboration and having a say in the physical environment. Staff acknowledged the opportunities of the new environment, but also experienced several challenges when relocating and working in an innovative environment. This study showed that relocating is a stressful undertaking for staff. The help they needed in adjusting to a new environment, and to a new way of working, was underestimated.

Keywords: *innovative housing with care, nursing, relocations, older adults, care environment*

BACKGROUND

Within long-term care, a culture change has been taking place for many years that involves a shift in both philosophical and practical viewpoints.[1] This change in viewpoints has led to a more psychosocial approach with a primary focus on quality of life.[2,3] As a result, innovative living arrangements are being developed to accommodate this culture change, which are purpose-built to meet the needs of residents. These innovative living arrangements are aimed at not only changing the physical environment, but also the social and/or organizational aspects. When a relocation in long-term care is taking place, not only residents but also staff are relocating to this new location, a so-called 'mass interinstitutional relocation'.[4,5]

Relocating in general within long-term care is an extensive and intensive undertaking, and is stressful for residents and staff.[4,6] On the other hand, one study showed that relocating to an innovative living arrangement might lead to a reduction in anxiety.[7] Research concerning this topic is, however, scarce. Besides having to physically move residents, staff, and equipment, care has to be continued as well. Furthermore, the relocation is an ongoing process, from the preparation phase to the actual relocation process and ending with the post-relocation phase lasting for months after the actual move.[8] Research shows that a relocation can be very stressful for staff. A relocation can have an impact on the social relationships among staff and may lead to an increased sense of isolation and uncertainty.[9] Furthermore, the experienced stress can in turn lead to more absenteeism,[4] which can be detrimental for care organizations in the face of existing staff shortages.

The focus of innovative living arrangements is not only on altering the physical environment but also on implementing changes in the social and organizational environment, a so-called culture change. Regarding the culture change, the aim is to transition nursing homes from institutions to homes for residents, to improve quality of care and quality of life[11] and to achieve a better person-environment fit.[11] A good person-environment fit occurs when the person's needs and abilities match with the resources of the environment.[12] This can be achieved for example by training staff to consider the location as the house of the resident, respecting privacy and mutual consent, or by creating shared values that are facilitated by the managers.[11] Within the social environment, staff are key in helping residents to remain as independent as possible through social support, such as by getting to know the residents and empowering them.[13] Within the organizational environment, culture is important in obtaining a higher quality of care. When staff are empowered and involved in the work culture, this may lead to a

higher quality of care.[14] Implementing this culture change, however, is hard and only a small percentage of nursing homes actually succeed in implementing a new work culture.[15]

Studies have focused on the experiences of staff when relocating within long-term care. However, as there is a trend within long-term care where innovative living arrangements are developed, this inevitably increases the amount of relocations from a regular to an innovative living arrangement. The combination of relocating and concurrently achieving a successful culture change may be a daunting task for staff. It is yet unknown how staff experience relocating from a regular nursing home to an innovative living arrangement. Hence, the research question of this study is: 'How do staff experience a relocation from a regular to an innovative living arrangement?' To answer this question, two subquestions are posed: 1) what procedures were followed throughout the relocation process? 2) How did staff experience the relocation process?

METHODS

Study design

A qualitative study using semi-structured interviews and observations was conducted based on an interpretative description approach.[16] This approach was chosen, as interpretative description captures the subjective experience of individuals and leads to extended practical knowledge of relocating.[17] To ensure transparency and rigour, the COREQ checklist was used for reporting[18] (see additional file 1). This study has been preregistered at "onderzoekmetmensen.nl".

Setting and participants

Nursing homes that have experienced a relocation to an innovative living arrangement were selected. A location was regarded as an innovative living arrangement when it aimed to substantially change the physical, social, and/or organizational environment and presented itself as an alternative to regular nursing home care. Furthermore, the location had to offer 24-hour care to older people above the age of 60 with psychogeriatric and/or somatic symptoms. In total, three Dutch locations were selected (for a description of the locations, see Table 1).

Table 1. Description of all relocation locations.

Location	Description old location	Description new location
Location A (N = 3)	A large building where residents live on the second floor. The environment has one large hallway where all rooms are adjacent. The residents live together in smaller groups. One small group (about ten residents) was followed.	Aims to create an environment that focuses on dementia-friendly living, with the motto of adding life to days instead of days to life. The relocation has led to an increase in staff members that were recruited while emphasizing the importance of the new vision. It is a larger building within the village with a vibrant 'living kitchen', centered at the front of the building. No formal courses were provided.
Location B (N = 15)	A large nursing home with wards. It has a large staff member pool and about 30 residents.	Small houses for seven residents in a park-like environment with an aim of creating more freedom of movement for residents and more person-centered care. The houses aim to resemble an archetypal house, with a combined living room and kitchen, a hallway with seven bedrooms and shared toilets and showers. Domotics, such as sensors and GPS, are implemented with the aim to increase the amount of freedom for residents. Staff members were prepared for the new location by visiting other locations with a similar vision and discussing the vision within work groups.
Location C (N = 21)	A building resembling an apartment building, consisting of five floors with one kitchen/living room and about seven residents on each floor.	A care environment with elements of green care farms in the countryside, including outside walking routes and animals. They focus on the strength and independence of residents and doing everything together with them. The new building is large, with multiple hallways where bedrooms are located. There are three combined living rooms and kitchens. All staff members followed several courses, both practical courses in using technology and cooking, as well as courses in vision implementation. These courses started just before the relocation and continued after.

Staff of identified locations were included if they: 1) worked at the included locations or 2) were involved either internally (e.g. care staff, management, or policy officers) or externally (e.g. architect, or project leader of the relocation process) in designing/developing the innovative living arrangement.

In this study, maximum variation sampling was used, meaning we aimed for a group of participants with a variety of demographic characteristics representing the target group per location regarding gender, age, educational level, work function, and amount of years staff worked at the location.[19] The sample size depended on data saturation, meaning that no new themes were observed within the data.[20] It became evident that a larger group of participants was necessary to understand the lived experience of the entire relocation process. This because some stakeholders were more involved in the preparatory phase, while other were more involved in the weeks after relocating. Furthermore, every included relocation case was unique in its own, and we wanted to include the voices of staff members of all locations. The Medical Ethics Committee of Zuyderland approved this study (registration number: METCZ20210065).

Data collection

Semi-structured interviews and observations were conducted between June 2021 and May 2022. Interviews took place two weeks after the relocation. The topic list (See additional file 2) was based on the relocation phases[21,22]: 1) weeks before the relocation (e.g. how did staff experience the weeks before the relocation?); 2) the relocation day (e.g. how did staff experience the relocation day?); 3) Weeks after the relocation (e.g. how did staff experience the first weeks after relocating to the innovative living arrangement?); and 4) the new location (e.g. how do staff experience the new location and new way of working?). When care organizations agreed to participate, staff members received information concerning the study and were asked to participate. All approached staff members agreed to participate. Interviews took place at the included locations during working hours, or right after their shift. The interviews were recorded and a summary was sent afterwards for a member check. Furthermore, demographic data were collected: age, gender, educational level, years of employment within the location, current work position, and number of working hours per week.

To gain a deeper understanding of the entire relocation process, method triangulation was used, by additionally performing observations.[23] The researcher (MB) attended preparatory meetings about the relocation, such as project meetings, discussions concerning the vision,

family gatherings, and other related meetings. The researcher also observed the weeks before the relocation, the relocation day itself and the weeks after the relocation, taking field notes.

Data analysis

The demographic variables were analysed using descriptive statistics. The interviews were transcribed verbatim and then analysed using a thematic analysis.[24] An inductive coding method was used, with the research question in mind.[25,26] First, all interviews were read thoroughly to become familiar with the data. Second, all interviews were summarized to capture the essence of the interview. These summaries were shared with interviewees for a member check. Third, a list of statements was developed, with each one being assigned a 'code' (e.g. the relocation process was exhausting/tense for staff). All statements were associated with or related to the research question and the codes were intended to remain as close to the statements as possible. Qualitative data analysis software MAXQDA was used.[27] The codes were then clustered into several themes. Throughout the entire process, the interviews were compared, the codes were improved, and new emerging themes were checked with the already-coded interviews. MB coded all the interviews. To ensure the quality of the analysis, a second researcher independently analysed 10% of the data as well, and the findings were discussed with the research team. Field notes were analysed, using a narrative approach. The first author (MB) reviewed the field notes multiple times to look for a generic narrative. Themes, characters, and events were identified and compared with the interview data.

RESULTS

Sample characteristics

A total of 39 interviews with 41 participants were conducted, each lasting an average of 48 minutes (range 16 – 85 minutes). Two interviews were conducted with two staff simultaneously. See Table 2 for participant characteristics.

Table 2. Participant characteristics

Demographic variables (mean, SD, number, percentage)	
Age, mean (SD, range)	45.7 (10.9, 24 – 60)
Gender, number (%)	
Male	9 (22.0%)
Female	32 (78.0%)
Work position, number (%)	
Manager	3 (7.3%)
Baccalaureate-educated registered nurse	4 (9.8%)

Table 2 (continued)

Demographic variables (mean, SD, number, percentage)	
Vocationally trained registered nurse	5 (12.2%)
Certified nurse assistant	6 (14.6%)
Nurse aid	6 (14.6%)
Client attendant	3 (7.3%)
Activities supervisor	3 (7.3%)
Social worker	2 (4.9%)
Occupational therapist	1 (2.4%)
Psychologist	1 (2.4%)
Architect	1 (2.4%)
External advisor	2 (4.9%)
Policy officer (focusing on relocation)	2 (4.9%)
Project manager (focusing on relocation)	2 (4.9%)
Educational level, number (%)	
Preparatory secondary vocational education school	4 (9.8%)
Senior secondary vocational education and training	19 (46.3%)
Senior general secondary education and university preparatory education	13 (31.7%)
Bachelor or Master level	5 (12.2%)
Years of employment, mean (SD, range)	10.8 (11.2, 0.4 – 41.0)
Number of working hours, mean (SD, range)	30.3 (5.1, 20 – 36)

Relocation procedures

All locations established project and/or working groups that were responsible for either the entire relocation process or a part of it. These groups consisted of managers, nursing staff, and client council members. All groups started preparations more than a year before the actual relocation.

Weeks before relocation

In the weeks before the relocation, the process of providing information concerning the relocation was considered very important. Care organizations mostly informed either staff or family by organizing informational meetings, letting them visit the location pre-relocation, and either informing them through a face-to-face meeting or a mail, folder, or letter. For residents, staff emphasized that they tailored their way of informing based on how the resident would respond and what their needs were. This meant that a large number of residents was informed in a very informal way (e.g. mentioning it during care moments) or were not informed at all. In the weeks before the relocation, the procedure differed among locations. Furthermore, a project manager, architect, and other external parties were actively involved in the preparation phase, creating the physical environment, the vision, and also the procedures of the relocation.

Workgroup members created a script for the relocation day with clear information on what the relocation day would look like and what everyone's task was.

Nursing staff not directly involved in project or work groups criticized the information process. They felt that they were not involved properly in the preparation phase of the relocation, either due to not receiving important information, receiving information too late, or not being involved in the decision-making process. The field notes showed that most preparatory workgroups mainly consisted of policy officers, management, and a few staff members. So even though some staff were involved in the preparatory phase, the transfer of information to the rest of that care team was experienced as unsatisfactory and the need for clear communication and involvement in the relocation process was mentioned in several interviews.

> *(Nurse, 32, interview p02_03) ['I have to say that there was some commotion the last weeks before the relocation, because the communication had not gone well. You could tell that the "top layers" were properly informed and were in possession of a script, but the care staff was not yet informed and you could hear the commotion (...) Staff wanted to be involved, they really could have been and should have been involved better.']*

The relocation day

The relocations differed in how the relocation day was organized. Some staff emphasized the importance of a short and stimulus-free relocation, while others emphasized the importance of celebrating and creating a festive environment. Three aspects were the same throughout all relocations: first, most relocations arranged for a place (e.g. hall or restaurant) where the residents could gather, so they would not experience the actual relocation of boxes with belongings; second, all relocation days were focused around eating moments, for example by having an elaborate breakfast or lunch and ending the day with a nice dinner; lastly, family were invited to enter the new location together with the residents.

Most staff were very satisfied with the relocation day. They felt that the relocation was organized properly (e.g. no unexpected setbacks, clear planning). Furthermore, the relocation day was experienced as a very festive day as there were decorations, a red carpet, and champagne.

Weeks after relocation

The emphasis during the weeks after the relocation was mainly orientation on the new location. Staff focused on routines to help residents with wayfinding and getting used to the new environment. Furthermore, every location or team arranged diverse activities and procedures to help residents get used to their new surroundings, ranging from arranging numerous recreational activities to distracting the residents to sticking to routines that the residents were familiar with. However, staff felt that they did not have enough time to help the residents get used to the new environment. They experienced the weeks after the relocation as a stressful and chaotic period. A lack of time and practical issues with the new location (e.g. missing equipment or having problems with the available facilities) were mentioned the most. The members of the project team (e.g. project manager, architect, manager) were not that actively involved in the weeks after the relocation and thus struggled with commenting on how these weeks were experienced. However, they did emphasize that the environment was still under development and that it was not operational as intended.

> *(Certified nurse assistant, 43, interview p06_03) ['I have to say, this is important to mention, that they painted a beautiful picture how the location would look like, and the building itself is beautiful, but the loose elements have to 'make' the location. So, for example, the animals, and that is not up and running yet.']*

Experiences of staff

Overall, staff experienced the relocation from a regular nursing home to an innovative living arrangement as an impactful event. Four main themes emerged from the data: 1) feeling lost both physically and emotionally; 2) the importance of having a say in the physical environment; 3) the opportunities and challenges of a new way of working; and 4) the importance of constructive communication and collaboration. These themes are described subsequently in more detail.

Feeling lost both physically and emotionally

The emotions that nursing staff experienced were largely negative, with an emphasis on the stress they experienced throughout the relocation process. They described the process as a 'hectic', 'intense', and 'busy' undertaking, often emphasizing that they felt lost, both in a literal sense (e.g. not knowing where to find materials, and not knowing the direction) and in an emotional sense (e.g. not knowing what to expect and how to respond/act). Another evident emotion was frustration. This frustration originated from the new way of working and the barriers staff experienced when trying to implement this new working culture.

(Nurse aid, 41, interview p01_04) ['For us it is new as well, a new way of working, where can we find everything, where do we place everything? (…) All we are doing is searching, searching, searching. How are we going to do this? How are we going to do that? How can we solve this? All small things that reveal themselves in the weeks after the relocation and that we have to get used to.']

On the other hand, nursing staff also described the new way of working as exciting, as they felt that it had a positive impact on the residents and that it offered more possibilities. Other positive emotions were related to being excited about going to the new location and being satisfied with the relocation day and how this was organized. Staff responsible for the relocation process (e.g. architect, project manager) were mostly positive, stating that they had the feeling nursing staff were excited to move to the new location.

Staff also reflected on the emotions of residents. For staff, it was very important to organize the relocation process in a way that would minimize the stress for residents. Despite their efforts, staff felt that residents did experience stress. Most staff described the residents as looking lost and being restless. Some staff even mentioned that they believed that the relocation, sometimes indirectly, led to the decline of cognitive or physical functioning or even the passing of vulnerable residents. Multiple staff were sometimes surprised about which residents remained calm and which became agitated. Their expectations did not always match the residents' actual behaviour. Furthermore, staff acknowledged that their own emotions had an impact on the emotions of the residents. When the staff felt tense and stressed, this reflected on residents, leading them to become agitated as well. They described this as an 'interplay' between the residents and staff.

(Psychologist, 30, interview p03_02) ['The ward was dripping with tension (…) So staff were already working on everything they needed to arrange. This made residents tense and staff did not react to this tension, because they were too busy. This meant that residents continued to be tense and would build up more tension, leading to a situation where staff were confronted with very agitated residents.']

Importance of having a say in the physical environment

Staff mostly emphasized that the location was beautiful, with nice facilities and delightful surroundings. The old location was often outdated, while the new building was very modern

and unique. Furthermore, staff had the feeling that the new location offered more possibilities in terms of facilities and space, creating a calm environment and outside surroundings.

Staff were also critical of the new environment. Three aspects were mentioned most: first, the location was furnished in a modern and minimalistic manner (e.g. furniture followed latest trends, walls were white), making it less recognizable for residents; second, staff sometimes struggled with the size or layout of the building (e.g. too little showers and toilets, the building as a whole was too large, or the living room too small); and third, they felt that some facilities were not thought through properly, despite the effort that all locations displayed concerning the design of the building. An architect, project manager, and multiple workgroups discussed the design together extensively. Although this group was also largely positive concerning the physical environment, they did acknowledge that rebuilding an already existing building poses challenges and limits the possibilities. Furthermore, they felt that some social elements were still missing, such as optimal usage of the available spaces. Staff not included in these workgroups mentioned feeling like they did not really have a say in how the environment would look and what it currently looked like. They were not involved in the process of developing ideas for the new location, or were bound to strict regulations when wanting to decorate the new building.

> *(Certified nurse assistant, 26, interview p03_04) ['The walls are all white, the door is white, the lights are too bright. It needs to be more homelike. Hanging something nice on the wall, stuff like that. You are actually not allowed to just do that, especially in the hallway. You are definitely not allowed to drill a hole, you have to be careful with everything, you know.']*

The opportunities and challenges of a new way of working

Most staff were enthusiastic about the cultural change focusing on person-centred care and the self-reliance (i.e. being able to rely on own powers and resources) of residents. They felt like the new way of working would be advantageous for the residents in terms of personal attention and flexibility. Nursing staff were largely positive about the new vision and its possibilities. They experienced more freedom to work at their own pace and that of the residents, which led to more flexibility in care and eating moments and more opportunities to follow the preferences of the residents themselves. As a result, staff were better able to deliver person-centred care and felt there was more opportunity to focus on the well-being of residents. However, nursing staff often stated that the way of working was different from what

they expected, or that the care organization did not think through the way of working, which led to discrepancies between the plans and the actual execution.

When wanting to implement a new way of working, nursing staff experienced several barriers. First, staff experienced a tension between the residents' freedom and safety. Most locations aimed to create an open living arrangement, meaning that residents could walk outside freely. In all locations, this was not yet functioning, as they felt that it was not yet responsible and safe enough. This and other situations led to the question as to whether freedom or safety should be the top priority.

> *(Project manager, 38, interview p19_03) ['More freedom also means more risk and less freedom means less risk (…) One family said: well, even if our family member "escapes" and however it may end, we hope he can keep a certain amount of freedom. Because if we "lock him up" he will pass away as well. (…) But not every family member feels this way, so that makes the situation very complex (...) because staff wants to guarantee the safety of the residents, so where is the balance? How can you act properly, knowing that you can never please everyone?']*

Second, the mindset of the staff did not yet match the new way of working. Staff often still focused on nursing home routines and determining the daily routines of the residents, meaning that, for example, they felt residents had to get up at a certain time and be washed and ready. This led to a decline in person-centred care and self-reliance in residents.

Third, staff were searching for new ways of working correctly and lacked the practical tools and guidelines that would help them.

> *(Nurse aid, 52, interview p09_02) ['The organization should have been more active, you know, to communicate what the possibilities are, how to involve residents during daily activities in between the meals. And you can tell we are trying to implement this, but I think it would have been nicer if we could have been coached, or someone could have joined us for a few days to give pointers on how to approach the residents.']*

Fourth, the new environment was still under development, especially when looking at domotics. Most new locations make use of domotics, often new and advanced, and this might not function optimally yet. Furthermore, staff had to get used to these new information- and communication-technology systems and domotics, which takes time.

The importance of constructive communication and collaboration

The interviews showed that relocating was a massive undertaking, especially when moving to an innovative living arrangement with a change of culture. Most staff acknowledged that the team climate (i.e. the ambiance and circumstances in which staff work) was very important throughout this relocation and implementation process. Collaboration and clear communication were key for success. Some initiatives were set up to stimulate this collaboration and communication, for example by planning meetings, such as 'vision-meetings', or 'catch-up meetings' to discuss how staff are feeling and what issues they encounter during their shift. The nature and number of meetings differed not only among the locations, but also even among teams. Some teams planned regular meetings to catch up, while others did not plan such meetings regularly.

Staff were critical about the collaboration and communication and acknowledged that this was not always a smooth process. This was especially clear in one location. They stressed the importance of having a good relationship with your colleagues to be able to communicate and collaborate in a constructive way. They felt that the communication could be better, as staff sometimes acted without discussing. Furthermore, other points for improvement were mentioned, ranging from needing more meetings and wanting a culture that involves less gossiping, to needing a clear point of contact.

> *(Social worker, 29, p12_03) ['What you often see is, with good intentions of course, that the manager is very involved and wants to help the people and colleagues, but as a result functions on a micro-level, which leads to overlap with tasks and responsibilities that we have. And that in turn leads to confusion for colleagues. For example, the manager says A and we say B and then the colleagues get confused and do not know what to do next.']*

In other locations, however, they felt that the new location had led to more opportunities to collaborate in a constructive manner.

Relocating often leads to some of your old colleagues leaving, and having new colleagues on the work floor, which is very challenging. All locations had to recruit new colleagues, as some were not interested in relocating or implementing a new way of working. Furthermore, two locations switched to a new manager and unit manager just before or just after the relocation day. As these new employees did not go through the same preparation stage as their already employed colleagues, this led to discrepancies between the expectations and values of the 'old'

colleagues and the 'new' ones. New colleagues were not yet familiar with their role and the new way of working and they did not know the residents, their family, and their fellow colleagues yet. This could lead to confusion and even some hostility, as they had to settle in and get familiar with the way of working and existing norms and values.

DISCUSSION

This study showed that relocating from a regular nursing home to an innovative living arrangement had a large impact on the involved staff. They experienced feelings of being lost, both physically and emotionally. Although the new location was often seen as beautiful, staff mentioned the importance of involving them in the development of the new location, as in their opinion the physical environment was not always optimally designed for the residents. Staff noticed a lot of potential in the new way of working that they wanted to implement in the new locations. However, they did experience barriers related to finding balance between freedom and safety of residents, the unmatched mindset of colleagues with the new way of working, and the lack of practical guidelines as the new way of working was still developing. This is in line with previous research, showing that implementing a new way of working is challenging.[15]

Our study shows that shared decision-making is important throughout the relocation process. Staff emphasized that it was not only important for them to be informed properly and in a timely manner, but also to be able to contribute to decision-making in the relocation process. Staff experienced stress and uncertainty when not informed properly, which could be associated with greater emotional exhaustion.[28] When staff, on the other hand, felt they had autonomy, self-determination and were actively involved in the relocation process, this may increase job satisfaction.[29] Furthermore, being included by the entire team (e.g. supervisors, co-workers, clinicians) led to an increase in staff empowerment.[30] When staff felt stressed and emotionally exhausted, this affected the residents as well. The participants described this as an 'interplay' between residents and staff. So when staff experienced stress and felt unsure, this reflected on the residents as well, and their stress levels and agitation increased as well. This is supported by research, showing that the way staff interact with residents is associated with the residents' mood.[31]

Relocating to an innovative living arrangement is more than just moving belongings from A to B. Innovative living arrangements attempt to alter the physical, social and organizational environment. This study shows that staff experience additional insecurities when relocating to

an innovative living arrangement, compared to relocating to a regular nursing home. There is quite some literature available concerning the role of the environment in long-term care. For example adding homelike features (e.g. furnishings, wall coverings and pictures, house-like layout) might lead to an increase in overall well-being of residents.[32] Furthermore, the way a nursing home's environment is designed is associated with a sense of home and belonging.[33] Staff plays an important role in using the environment creating a sense of purpose and belonging in residents.[34] Nevertheless, for staff, it is complicated to adequately use these new environments. They miss practical guidelines and feel lost, which leads to a relapse into old and familiar behaviours that do not match the intended new way of working, hindering culture change. It is not easy to implement a new way of working, as previous research has also shown.[15,35] Research concerning innovative living arrangements show different results, ranging from a positive effect on residents (e.g. more social engagement, more physical activity) to no effect.[36-40]

A recent scoping review showed that in the literature, most relocation support initiatives (i.e. that aimed to optimize the relocation process) focused on residents.[41] Only two initiatives also focused on staff with staff preparation as a key aspect. Our results show that working at a new location causes stress and problems for staff, which highlights the need for staff support programs. One example is the tension between freedom and safety. The new locations often aimed to increase the amount of freedom of residents. However, staff struggled with finding the right balance between providing freedom and maintaining safety, and previous studies show that safety is often chosen over freedom.[42] Furthermore, research shows that relocating hinders the ability to maintain the ideals of person-centered care, such as resident choice, rights, and autonomy.[43] Research has already shown that job resources, such as developing coping skills and self-efficacy,[44,45] and having social support[46,47] could help with fostering resilience in nursing staff. Institutional strategies could help nurses to become and remain more resilient within their health-care environment, helping them to endure stressful events, such as a relocation.[48]

Implications for research and practice

Future research should focus on gaining more insight into how to optimize the process of relocating to an innovative living arrangement, with a specific focus on adjusting to the new way of working. Based on the current study it is evident that care organizations need to increase their focus on the social and organizational changes with which staff have to deal after a

relocation, instead of mainly focusing on the changes in the physical environment. Relocating is an event that requires certain skills and competencies of both staff and management. Future research and practice should focus on how to develop the skills and competencies among staff to successfully relocate and implement and adapt to a culture change.

Methodological considerations

By approaching both care staff as organizational staff, we were able to capture a diverse group of staff members, leading to insight in all perspectives and a broadened understanding of overarching themes that are of importance. However, the interviews took place shortly after the relocation. We did not perform a second interview after the entire relocation period. It is possible that staff reflects differently on the experienced relocation afterwards. Performing interviews later in time might have led to additional insights.

Furthermore, the study sample consisted of several organizations relocating to an innovative living arrangement. Although a diverse selection of innovative living arrangements was approached in this study, the findings might not be generalizable to all settings. As innovative living arrangements are diverse, for future research it is important to gain more insight into the setting and context of these arrangements and how they interrelate.

During the relocating period and when we were conducting interviews, we were dealing with the consequences of COVID in the form of not being able to meet in person and lockdowns. Consequently, not all preparations could proceed as planned, such as visiting the new location pre-move, or meeting in person with the entire team to discuss the relocation. This might have affected staff experiences, as highlighted in previous research.[49,50]

CONCLUSION

This study shows that, rather than the primary emphasis on physical environment changes, there is a need to place more emphasis on the emotions of staff during the relocation to a new environment. The help they need in adjusting to a new environment, as well as a new way of working, was underestimated.

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APPENDICES

Appendix 6A: experiences concerning the relocation process: staff and management

Het verloop en de inhoud van het verhuisproces		
Inleiding interview: Ik wil het graag met u hebben over de verhuizing en hoe die bij jullie verlopen. Ik ben vooral geïnteresseerd in de procedures die jullie doorlopen om een verhuizing goed te laten verlopen en uw ervaringen hierbij. Hier zullen dan ook de meeste vragen over gaan. Ik wil graag beginnen met een brede algemene vraag: Bevalt de nieuwe locatie?		
Hoofdvraag	**Interviewvragen**	**Categorie**
Hoe heeft het personeel/het management de verhuizing van of naar een innovatief woonzorgconcept ervaren? **Hoe denkt het personeel/het management dat de bewoners en de naasten het verhuisproces hebben ervaren?** **Welke procedures doorloopt het concept tijdens de verhuizing van of naar een innovatief woonzorgconcept?**	Bevalt de nieuwe locatie?	Initiële vraag
	Hoe is de aanloop naar de verhuizing verlopen? • Wanneer heeft u de bewoners en de naasten geïnformeerd over de aankomende verhuizing? • Op welke wijze heeft u de bewoners en naasten geïnformeerd? • Welke activiteiten/informatiesessies et cetera zijn er in de weken voorafgaand de verhuizing georganiseerd? • Heeft u het gevoel dat de bewoners en naasten voldoende voorbereid waren voor de verhuizing? Waarom wel/niet? • Hoe heeft u de weken voor de verhuizing ervaren? • Hoe was de gemoedstoestand van de bewoners in de weken voor de verhuizing?	Aanloop verhuizing
	Hoe is de verhuizing zelf verlopen? • Zou u me stap voor stap uit kunnen leggen hoe de verhuizing is verlopen? (Bijvoorbeeld, werden bewoners apart of tegelijkertijd verhuisd, hoe werd het personeel ingezet) • Welke aspecten van de verhuizing vond u goed gaan? • Welke aspecten van de verhuizing vond u minder goed gaan/ hadden nog mogelijkheid tot verbetering? • Vond u de verhuizing goed georganiseerd? Zo ja, waarom wel? Zo nee, waarom niet? • Hoe was de gemoedstoestand van de bewoners tijdens de verhuizing? • Hoe heeft u de verhuizing persoonlijk ervaren?	Verhuizing

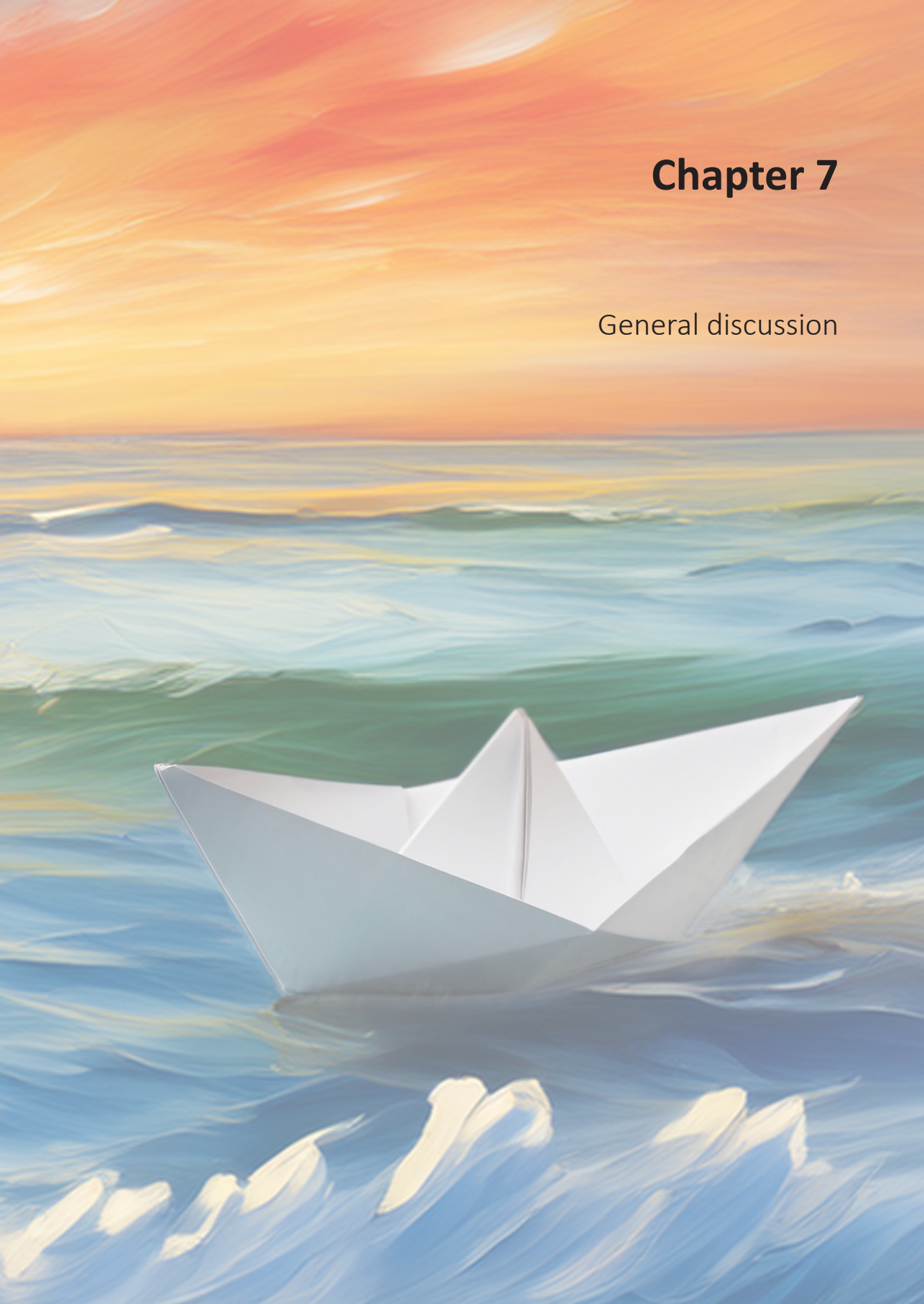
Appendix 6A. (continued)

Het verloop en de inhoud van het verhuisproces		
Hoofdvraag	**Interviewvragen**	**Categorie**
	Hoe is het gewennen van de bewoners aan het nieuwe gebouw verlopen? • Hoe was de gemoedstoestand van de bewoners gedurende de eerste week? • Op welke wijze werden de bewoners geholpen met het gewennen aan de nieuwe omgeving? • Werden er procedures/activiteiten opgezet om deze gewenning te ondersteunen? • Hoe heeft u de eerste weken na de verhuizing ervaren? • Bevalt de nieuwe omgeving u? Zo ja/nee, wat bevalt er wel/niet?	Na verhuizing
	Hoe bevalt de nieuwe omgeving? • Hoe bevalt de nieuwe indeling van de gebouwen? • Hoe bevalt uw nieuwe werkwijze? • Hoe bevallen de nieuwe faciliteiten?	Nieuwe locatie


7

Chapter 7

General discussion



This thesis aimed to gain more insight into relocations from regular nursing homes to innovative living arrangements. Its aims were: 1) to develop an overview of innovative living arrangements described in the literature; 2) to gain insight into the impact on residents when relocating from a regular nursing home to an innovative living arrangement; 3) to gain insight into the experiences of residents, their family caregivers and staff members with relocating from a regular nursing home to an innovative living arrangement.

This chapter discusses the main findings of the studies, followed by methodological and theoretical considerations. It ends with suggested future directions and implications for practice and research.

Main findings

First, we developed an overview of innovative living arrangements (*Chapter 2*). A scoping review of the literature identified seven distinct innovative living arrangements: i.e. small-scale living; the Green House model; shared housing arrangements; green care farms; dementia villages; group homes; intergenerational living and an 'other' category. Furthermore, six themes were emphasized in these arrangements. Most arrangements emphasized the importance of autonomy (e.g. normalizing daily life and offering choice), small-scale and/or a homelike environment (e.g. smaller group homes and creating an archetypal house), and integration of work tasks (e.g. staff members perform care-related, domestic, social, and recreational tasks). Additionally, a subset of the living arrangements emphasized the importance of the involvement of the community (e.g. creating a sense of community inside or outside the living arrangement), the focus on nature (e.g. revolving daily life around agricultural activities and nature in general), and the involvement of family members (e.g. involving them in daily life and decision-making).

An observational longitudinal study (*Chapter 3*), examined the impact of relocating from a regular nursing home to an innovative living arrangement on residents' daily life, including depressive signs and symptoms, cognitive functioning and activities of daily living. This study showed that, after six months, no longer-term changes in residents were found when relocating. However, relocating was accompanied by a significant and clinically relevant short-term increase in depressive signs and symptoms two weeks after the relocation in two out of four included locations. This indicates that the context and environment might have an influence on how the relocation process is experienced. Furthermore, after six months, the

intended positive impact of the newly implemented innovative environment was not evident in the daily life of the residents.

To gain insight into the experiences of residents (*Chapter 4*), their family caregivers (*Chapter 5*) and staff members (*Chapter 6*), interviews were conducted with all three groups. Furthermore, the relocation process was followed by performing observations before, during and after the relocation day, and visiting relevant meetings, such as project- and family meetings. Residents expressed the following as being important to them: 1) what the physical environment of the new location would look like; 2) to know where their belongings were throughout the relocation process; 3) to feel at home; 4) to have social contact when relocating; and 5) to be engaged in daily life (*Chapter 4*). Our results emphasized the need to actively involve residents throughout the relocation process. Family caregivers (*Chapter 5*) usually helped their relative move by engaging in practical matters, such as packing their belongings. The emotions of the family caregivers and their relatives were closely related, meaning that how residents experienced the relocation influenced the emotions of the family caregivers. The latter had to communicate with their relative and staff members, which they experienced as challenging. They encountered several difficulties, such as deciding when to inform their relative about the upcoming relocation, and which staff members to approach after it had taken place. Lastly, family caregivers assessed the new environment and culture change. Although they showed enthusiasm regarding the physical environment, families were critical about the intended culture change. They either did not agree with it or doubted whether the implementation was successful. Results showed (*Chapter 6*) that all locations started establishing project- and work groups more than a year before the relocation was to take place. Organizations prepared staff by, for example, organizing a pre-move visit and 'vision-meetings' as well as several courses. Staff members indicated that the relocation process also had a large impact on them. They felt lost both physically and emotionally. They stressed the importance of having a say in the physical environment of the new location as they felt that this was not always optimally designed. Furthermore, although staff members regarded the culture change (i.e. new way of working) as advantageous, they also experienced several challenges or barriers when implementing this new approach, such as tension between freedom and safety, a mismatch between the staff's mindset and way of working, a lack of practical tools and guidelines and the new environment still being under development. They therefore stressed the importance of constructive communication and collaboration among staff members.

Methodological considerations

Whereas every chapter addresses the specific methodological considerations of each study separately, this section focuses on the general considerations concerning all the studies performed. It describes the sampling, the time frame of the data collection, and the impact of COVID-19.

Sampling

In all studies, we included participants from sites that experienced group relocations from regular nursing homes to innovative living arrangements, all belonging to a larger care organization. The organizations all had multiple regular and older locations and aimed to provide an alternative by setting up innovative living arrangements. All locations remained part of the same care organization. We selected group relocations, so-called 'mass inter-institutional relocations', where both staff and residents together move from one long-term care facility to a new facility.[1] When looking at the prevalence of relocations, individual relocations are three times as likely to occur compared to group relocations.[2] It can be argued that a group relocation is experienced differently compared to an individual one, as large groups need more coordination to move and the new location is not yet fully established. Therefore, the results of this dissertation cannot be applied directly to individual relocations. Following both individual as group relocations could have led to different outcomes. Especially since these individual relocations do not only take place within the same care organization (which was the case in the group relocations followed in this dissertation), but also include relocations to innovative living arrangements that operate outside larger scale and traditional care organizations.

In this thesis we regarded a nursing home as being 'regular', when it resembled an archetypal large building, including large wards, differentiated tasks for staff members and distinct routines and regulations. A living arrangement was regarded as 'innovative' when there was an a priori intent in the vision and mission to redesign the physical, social and organizational environment. Although the locations changed significantly in their physical environment, in all cases the social and organizational environment still showed a lot of patterns resembling those of regular nursing homes. This is reflected in the results, which show that the daily lives of residents were similar to those of residents living in traditional nursing homes. This indicates that adopting a new culture is a challenging process. When innovative living arrangements are newly founded, they can create a new culture, rather than changing an existing one.

Furthermore, the organizational structures are different, with less bureaucracy and a flattened structure.[2,3] Research shows that established, newly founded innovative living arrangements, such as green care farms, do seem to lead to changes in the daily life of residents.[4] This suggests that relocating outside a large care organization towards an established innovative living arrangement might lead to different outcomes compared to relocations within the same organization that were followed in this dissertation.

The time frame of data-collection

This thesis focused primarily on the relocation process, and we therefore chose a study period of one month before relocating to half a year after the relocation in order to gain a thorough understanding of the preparatory phase, relocation day and post-relocation phase. The interviews were only performed two weeks to a month after the relocation day. We consciously chose to perform interviews immediately after the relocation day, as we wanted to avoid recall bias as much as possible. However, performing interviews before the actual relocation day would perhaps provide us with additional information concerning the expectations and preparation phase. Furthermore, the results of the longitudinal observational study (*Chapter 3*) show that there is an increase in depressive symptoms in some of the included cases immediately after the relocation, which normalizes again over time. This indicates that the interviews took place during the period that was probably the most hectic and impactful for residents. Interviews later in time would have enabled us to gain a better understanding of the experiences of residents, family caregivers, and staff after they have had the opportunity to settle and get used to the new location. However, this would also increase the risk of recall bias.

The impact of COVID-19 on the relocation process

The COVID pandemic played a clear role in the research presented in this dissertation, as the studies were performed exactly during the pandemic. Due to several lockdowns in nursing homes, data collection was sometimes challenging and it led to the need to utilize creative solutions, such as performing interviews through video calls and engaging in close communication with involved staff. Despite these challenges, data collection could mostly be performed as planned. However, COVID may have had an impact on the residents as well as the relocation process. Activities to prepare the entire relocation could not all be implemented as planned in some of the locations, depending on the lockdown regulations. In some cases, when preparing the relocation process, information sessions were cancelled, new locations

could not be visited beforehand, and the ability of family members to visit was restricted, which meant that residents, family and staff were affected as a result of the new restrictions and regulations. All the locations we followed experienced at least one lockdown throughout the data collection process and were subject to restrictions.

In two out of the five relocations, families were not allowed to visit on the actual day due to a lockdown, or governmental and organizational restrictions. In the other three, family visits were permitted and they were able to help their relative in the move. After the actual relocation, family visits were again restricted, and residents together with family were not allowed to sit in the communal areas. Allowing family visits during the pandemic was associated with positive experiences for residents, family and staff.[5] Therefore, the presence or absence of family could affect the experiences throughout the relocation process. Furthermore, larger-scale activities were not allowed, as wards and teams were separated to limit outside contact. It can be argued that due to these restrictions the relocation process and intended culture change were prepared and performed differently. This could in turn affect the experiences of all stakeholders, e.g. they could feel less informed or less involved. The lockdowns and restricted visiting could also have led to an increase in the isolation of residents. Social isolation is a major predictor for diminished well-being in older adults.[6,7] Research shows that the limited possibility of face-to-face contact and the fear of becoming ill led to emotional distress for both family and residents and thus to feelings of reduced well-being.[8] This might have led to additional stressors throughout the relocation process and might have had an impact on the well-being of all stakeholders involved in our studies.

Theoretical considerations

This section focuses on the overall theoretical considerations. It describes the phenomenon of creating a home and provides perspectives on culture change.

Creating a home

Innovative living arrangements, including those described in this thesis, focus on the importance of feeling at home.[9] They aim to create a homelike environment and stress the importance of, for example, the self-determination and ownership of residents in order to establish and maintain this feeling of home.[10] Although all living arrangements a priori aimed to create an environment that stimulated feelings of at-homeness, no specific goals seemed to be set in order to enable this process. It is notable that there was little emphasis on creating a

home during the relocation process in the cases we followed. Our results showed that although the residents, in particular, emphasized the importance of feeling at home, both they and the staff expressed feelings of being lost, not only physically, but also mentally. Furthermore, family members sometimes expressed feelings of being worried or wanting to take their relative home after the relocation. These results indicate that achieving a sense of home is not easily established after relocating. Creating a sense of home is important in order to increase the well-being of residents.[11] When relocating, their old homes are disrupted and they have to move to a new, unknown place. Particularly when a move is involuntary, which was the case in the relocations followed in this thesis, it is even more challenging to make a new living environment feel like home again.[12]

Residents emphasize the importance of taking their belongings with them and personalizing their physical environment. All cases included in this thesis deliberately added elements to increase the home likeness of the physical environment. For example, by building an archetypal house or providing an accessible outside area. However, this thesis shows that during the organization of the relocation the preferences of residents were not taken into account. Residents did not have a say concerning the physical environment and the moving of their belongings, despite their clear desire to be involved. One important aspect of feeling at home is creating a meaningful attachment to place.[13] This happens by, for example, personalizing the environment with the addition of personal belongings and objects that lead to recognition.[14] Furthermore, the design and facilities are also important for increasing feelings of at-homeness, such as having a building that looks like a typical house, having private rooms and bathrooms and having an environment that enables staff to meet changing individual and collective needs or create places that attract the residents.[11,15,16]

Another important aspect of creating a home is creating an attachment to space.[13] This entails taking part in activities with others, being able to express your personality, and making friends.[13,17] An important part of feeling at home is the development of meaningful relationships and the involvement of family.[18,19] Indeed, residents emphasized the importance of engaging in social contact, especially throughout a stressful event such as relocating. They appreciated family visits and families were closely involved with residents throughout the process. The way staff interact with residents is also important. Staff considered certain components important in order to enable at-homeness, such as knowing the residents at a personal level, showing respect, creating a family-like relationship, helping residents adjust to their changed life situation, and ensuring continuity to create a feeling of security.[20] On the

contrary, staff behaviour such as being disrespectful or controlling the social contact of residents can lead to a decline in feeling at home.[21] The way the organizational environment is shaped can also affect the feeling of home for residents. Existing routines and regulations can hinder at-homeness, while making sure that residents can maintain their past lifestyle enables it.[13,22] Furthermore, as a resident, being able to determine how to spend your day-to-day life is important.[12,13,18]

Shared decision making is an important part of creating a partnership where there is a trusting and good relationship between staff, family caregivers and residents.[23] This in turn can increase the sense of feeling at home. Especially for individuals with dementia, having meaningful relationships is important, as they are partly dependent on others to ensure autonomy and dignity, which are a central part of feeling at home. Living in a nursing home can lead to a decrease in autonomy, as residents become part of the existing routines.[22] Another important aspect for residents is to be equal to, and respected by, nursing staff.[13] Being part of an equal partnership means you engage in shared decision-making and involve all stakeholders, not only in daily life but also during impactful events, such as relocating. The results of this dissertation show that this equal partnership is not always present throughout the relocation process and this is particularly due to a lack of clear communication and collaboration. This misaligns with the prerequisites of a successful shared decision-making process. Oral communication and resident decision-making autonomy are vital in order to create a sense of shared decision-making.[24] Shared decision-making models show that creating choice awareness, taking resident preferences into account and tailoring all information in order to make everything understandable is important.[25,26] However, this thesis shows that oral communication becomes even more challenging after the relocation, as family caregivers described how they no longer know who their point of contact is. Furthermore, residents were not involved in the relocation process at all.

Perspectives on culture change

This thesis shows that relocating to innovative living arrangements entails more than preparing the relocation process, as a culture change also has to be implemented. There was a large focus on shaping the physical environment – for example, by creating a nature-based outside area or creating a homelike building. This led to many positive responses from residents, family and staff. However, they were more critical when talking about intended changes in the social and organizational environment (e.g. the intention to have an open-door policy). Half a year post-

move and post-implementation, there were no large differences in the daily lives of residents. This indicates that the social and organizational environment might not have been effectively changed yet. Studies indicate that established innovative living arrangements have a positive impact on residents and differ from regular nursing homes,[4,27-31] meaning we would expect a positive change in resident outcomes, such as daily life and mood. A possible explanation for the fact that we do not find a positive change (yet) might be because all pre-move locations were part of large and older organizations. These organizations often standardize their work processes, skills and outputs, making it hard to change an established culture.[2] All locations were part of the existing rules and regulations of the overall care organization. Research shows that this can lead to a rigid system where there are few opportunities to experiment and change, making it challenging to change an existing culture.[2] Bending or even ignoring certain rules is necessary in order to create a successful innovative living arrangement.[32] Furthermore, implementing a culture change is a time-consuming and dynamic process.[33-36]

In the studied cases there was a misalignment of the physical environment, social environment and organizational environment. For example, in one case a large outside area was built, with a lot of possibilities to engage in meaningful activities or stimulate the senses (e.g. there were animals, fruit trees, a chapel). However, during the observations we noticed that residents hardly made use of this area, despite the fact that they do have a strong desire to be outside and to go walking. Although the physical environment is present, staff play a crucial role in utilizing this environment properly in order to successfully implement a vision.[3,37] An environment can come to life when staff trigger the appropriate underlying mechanisms, but they must learn how to do this. Although the physical environment can have a supportive role in, for example, stimulating meaningful activities and physical activities, how staff engage in the process of reaching these goals is important.[37] This can be challenging, because when the vision of a location changes so too do the job demands and the amount of job control.[38] This will lead to a change in the required competencies of staff.[39] How staff fill in their new role can impact the development and implementation of a culture change.[40]

How the organization functions is also crucial in order to support staff throughout a culture change. There must be an innovative organizational culture, meaning everyone is ready for innovation.[41] In order to have a functional organizational culture, all groups within an organization must have shared values, attitudes and beliefs.[42] Quality of care increases when an organizational culture consists of shared values and goals, strong cohesion, participation, and a sense of 'we-ness'.[43] However, staff mentioned that their mindset did not always match

that of other staff members and the intended way of working. Furthermore, they were unsure how to develop the necessary competencies to match the intended vision. How prepared staff are to change their culture is partly determined by their belief in the appropriateness of the current course of action. This means that a different mindset can hinder the effectiveness of culture change. Furthermore, trust in management is very important. Staff needs to believe that management is capable of providing support and capable of successfully implementing a change.[44] Staff need to experience room for learning in order to be able to reflect and develop the knowledge and skills necessary for a culture change or innovation.[41]

The vision accompanying the culture change did not seem to be carried throughout all layers of the organization. Not all staff felt ownership of the innovation but rather gave the responsibility back to 'the organization' or the management, which suggests the vision has become a top-down process. This hinders important processes, such as integrating the vision in day-to-day life and adjusting that vision to match practice.[37] In order to create an innovation-oriented culture, all members of an organization should participate and share responsibility. Therefore, the development of a culture change should also be a bottom-up process.[45,46] In order to successfully engage in innovative practices, a sense of collective ownership should be established. This entails individuals having a shared mindset and feeling a sense of shared ownership over a certain target. This in turn leads to feelings of shared responsibility and relieves individual burden and stress.[47]

Future directions

Practice

This thesis emphasizes the complexity of relocating and the emotional toll it places on all stakeholders involved. In order to enhance future practices, it is essential to actively involve the entire care triad, which consists of the resident, family caregivers and staff.

The findings of this thesis underscore the need to use a resident-centred approach during relocation processes. Future practices should prioritize actively involving residents in every stage of the relocation process, ensuring their needs, preferences and emotions. Informing residents about the upcoming relocation, safeguarding personal belongings, and fostering social connections can help residents in feeling more at home. Additionally, mitigating the short-term emotional impact of relocating should be considered, using possible strategies, such as psychological support and personalized transition plans tailored to reduce stress and

depressive signs and symptoms during the early weeks. By prioritizing autonomy and a sense of belonging, nursing homes can create smoother transitions that improve residents' overall well-being.

Equally important is the role of family caregivers, who often feel emotionally involved throughout the relocation process. Supporting them by facilitating them in their roles, providing open communication, and providing emotional support is important to ensure a smooth relocation. Family members should be acknowledged as key partners in the process and should be involved and informed as such. Additionally, fostering stronger collaboration between staff and family caregivers can ensure a more seamless and aligned relocation, benefiting all stakeholders.

Supporting staff throughout the relocation and culture change process is important. It is important to involve staff in the development of the new location and the preparations of the relocation process as staff emphasized the importance of being properly informed and allowed to contribute to decision-making. Clear communication between all stakeholders (e.g. residents, family and staff) and an alignment in vision can optimize the relocation process and culture change development. Furthermore, it is important to support a learning environment where culture change can take place.

Research

To further explore the actual impact on all stakeholders, follow-up research focusing on high-quality experimental designs should be conducted in order to increase our knowledge concerning the impact of relocating on all stakeholders. Furthermore, more emphasis should be placed on the development and evaluation of supportive interventions (e.g. an intervention to increase the involvement of all stakeholders) in order to optimize the relocation process. Although some interventions are available in the literature, they are scarce and often focus on one specific aspect, thereby overlooking the complexity of the entire relocation process. Furthermore, this dissertation emphasizes the importance of involving all stakeholders, an aspect that is underexposed in current literature.[48] Within the RELOCARE consortium, one of the aims is to gain insight into how to optimize a relocation process. As more innovative living arrangements are being developed, greater understanding of how to optimize moving to such locations should be gained. Research into how to optimally involve all stakeholders should be performed, as this could add to the existing knowledge that will be acquired within the RELOCARE consortium.

Future research should also focus on performing longitudinal studies to gain a deeper understanding of the development and sustainability of culture change in innovative living arrangements. Such studies could track the gradual adaptation of staff, residents and family caregivers over extended periods, exploring how initial challenges – such as balancing freedom and safety or aligning staff mindsets with new practices – evolve over time. Longitudinal research could also examine how culture change influences organizational outcomes, such as staff satisfaction, retention and collaboration, alongside resident outcomes like autonomy, well-being and quality of life. Additionally, tracking the process and identifying the facilitators and/or barriers of culture change could offer critical insights into the conditions necessary for success.

Time alone, however, might not be enough to establish a sustainable culture change. There are certain contextual elements that have to be taken into account as well. If stakeholders are not, or not equally, involved, this hinders culture change. Furthermore, pre-existing values and beliefs and the amount of readiness to engage can either stimulate or impede culture change.[33,49] Therefore, a follow-up measurement later in time might not be sufficient to understand how to successfully implement a culture change. Action-based research that actively follows the elements and working mechanisms of a culture change and how to successfully create a new environment that is sustainable might be more appropriate to gain a full understanding of this process. Research shows, for example, that changing the role identity of staff required much work by a variety of individuals and happened through co-creation.[50] It would have been interesting to not only follow the culture change process but also focus on the elements that increase the chances of a successful culture change.

I would like to end with the well-known saying: 'Home is where the heart is.' The concept of creating a home extends beyond physical walls and spaces. It encompasses feelings of belonging, dignity and connection. Actively involving residents in a relocation process transforms an 'institution' to a place that one can call home. By listening to and empowering residents, we respect their individuality and acknowledge that the essence of home is and remains a fundamental human need.

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Addenda

Summary

This thesis aimed to gain more insight into the impact on residents, family caregivers and staff members when relocating from a regular nursing home to an innovative living arrangement. Due to an ongoing culture change within long-term care, innovative living arrangements are being developed that aim to meet the needs of residents and promote person-centred care. The development of these arrangements leads to an increase in relocations, which can have a negative impact on all stakeholders involved. More insight into the impact of and experiences with these relocations is highly warranted. This knowledge will enable care organizations and policymakers to adjust relocation strategies and optimize the relocation process.

Chapter 1 provides a general introduction to the topic of this thesis. Information concerning the following topics is provided: the development of nursing homes in the Netherlands; the care environment and innovative living arrangements; and relocations within long-term care. Furthermore, the aims and outline of this thesis are specified.

Chapter 2 presents a scoping review that provides an overview of innovative living arrangements and their defining characteristics. Overall, 56 articles were identified that described seven distinct innovative living arrangements. These include: 1) small-scale living, where a small group of older adults form a household together in an environment that is homelike. The normalization of daily life is important and is established by supporting the residents' capabilities and focusing on meaningful activities; 2) the Green House Model, which aims to create a homelike environment and to transform the roles of care staff; 3) shared housing arrangements, where a small group of older adults live together in a small-scale homelike facility and family is actively involved in daily life; 4) green care farms, where agricultural activities are combined with care services; 5) dementia villages, which aim to create a village-type accommodation that is not institutional-like; 6) group homes, which are a group-living-based facility for residents with dementia; 7) intergenerational living, where students and older adults live together. This living arrangement is based on social reciprocity and community. Furthermore, several overarching themes were identified throughout all or most living arrangements: supporting autonomy; creating a small-scale and/or homelike environment; involvement of the community; focus on nature; integration of work tasks; and involvement of family members. Twenty-eight articles studied the effect of innovative living arrangements on stakeholders, focusing mainly on quality of life and aspects of the daily life of residents. This review shows that it is important to gain more knowledge concerning the potential key elements of innovative living arrangements.

An observational longitudinal study, described in **Chapter 3**, examined how residents are affected by a relocation from a regular nursing home to an innovative living arrangement. The study followed five group relocations, taking place at four locations, from a regular nursing home toward an innovative living arrangement. The relocations included 97 residents in need of 24-hour care. Depressive signs and symptoms, cognitive functioning, and dependence in activities of daily living were measured using questionnaires. Furthermore, ecological momentary assessments were used to assess the daily lives of residents. Data were collected one month before, two weeks after, and six months after the relocation day. When looking at the long-term (half a year post-relocation) change, no significant change was found in depressive signs and symptoms, cognitive functioning, and dependence in activities of daily living. However, relocating was accompanied by a significant short-term increase in depressive signs and symptoms in two out of four locations. Furthermore, although all the included locations intended to positively influence the daily lives of residents, no changes were found throughout the relocation process. Residents of all but one locations engaged in the same amount of passive/purposeless activities. Residents in one location even experienced a significant increase in passive/purposeless activities. Furthermore, residents engaged in similar amounts of social interaction before and after the relocation, with one exception, as one location showed a temporary increase in the amount of social interaction two weeks post-relocation. This study shows that relocating to an innovative living arrangement does not lead to a long-term change in residents. However, there are indications that relocating might lead to a short-term change in depressive signs and symptoms. Considering the approach and context of the entire relocation process might lead to the prevention of this short-term effect. Furthermore, more insight into how to positively change the daily lives of residents is needed.

Chapter 4 explores how residents with dementia experienced a relocation from a regular nursing home to an innovative living arrangement. A qualitative study was performed using semi-structured interviews and observations. In this study, two nursing homes were included that offered 24-hour care to residents with dementia and planned a relocation from a regular nursing home to an innovative living arrangement. From these two nursing homes, sixteen residents were included. Throughout the relocation process, the emotions of residents ranged from feelings of stress and agitation to feeling calm. Furthermore, residents described five themes that were important to them when moving. First, they emphasized the importance of the design of the physical environment of the new location. They either liked their new surroundings, or not as they missed certain decorations or struggled with wayfinding. Second,

the belongings of residents were important as they experienced a lot of stress when these belongings were packed without them, and they feared that their belongings would get lost or stolen. Third, residents considered feeling at home as important. Fourth, the residents emphasized the importance of having social contact when relocating, showing that staff usually take on a care-related role, but switched to a 'social role' during the relocation day. Furthermore, the support of family after the relocation was appreciated. Fifth, for residents it is important to be engaged in daily life, such as being involved in daily decisions, and being able to have autonomy concerning daily life. This study showed that residents are not actively involved throughout the relocation process. This despite their clear desire to be so. This study emphasizes the need to involve residents with dementia throughout their relocation process and to take their wishes and needs into account.

A qualitative study is presented in Chapter 5, using semi-structured interviews, studying the perspective of family caregivers regarding the relocation of their relatives from a regular nursing home to an innovative living arrangement. Three nursing homes were included that offered 24-hour care and were planning a relocation from a regular nursing home to an innovative living arrangement. In total, 22 family caregivers were included, each of whom had a relative who was relocating. Family caregivers helped their relative with the move, with their role being mostly practical, as they packed belongings and decided on their relative's room. Furthermore, family caregivers experienced an interplay between the emotions of their relative and their own emotions, meaning that how the residents experienced the relocation influenced the experiences of family caregivers. Family caregivers had to communicate with their relative and staff members, which they found to be a challenge. They experienced several difficulties, such as deciding when to inform their relative about the upcoming relocation and which staff members to approach after it had taken place. Last, family caregivers were very positive with regard to the physical environment and felt that it was a significant improvement compared to the old location. Although they assessed the physical environment as positive, they were more critical concerning the intended culture change. This chapter shows that relocating residents also has a major impact on their family caregivers. Care organizations should take the roles and responsibilities that family caregivers experience into account and facilitate them if necessary. Information provision and optimal communication are key elements to achieve this. Furthermore, as family caregivers were critical concerning the intended culture change, more emphasis should be placed on preparing and involving them.

Chapter 6 examines how staff experienced a relocation from a regular nursing home to an innovative living arrangement. A qualitative study was conducted, using semi-structured interviews and observations. Three locations that provided 24-hour care and planned a relocation from a regular nursing home to an innovative living arrangement were selected. Forty-one staff members who worked at the selected locations were included. Staff felt lost, both physically and emotionally. Although staff were often very positive about the physical environment, they stressed the importance of involving them in the development of the new location, as they felt the physical environment was not always optimally designed for the residents. While staff members acknowledged the potential of the culture change and new way of working, they also experienced several barriers. Staff stressed the importance of constructive communication and collaboration. This study showed that relocating is a stressful undertaking for staff. The help they needed in adjusting to a new environment, and to a new way of working, was underestimated.

Chapter 7 summarizes the main findings of this thesis. Furthermore, methodological and theoretical considerations and future directions are discussed.

Samenvatting

Deze thesis had als doel meer inzicht te verkrijgen in de impact op bewoners, mantelzorgers en medewerkers bij een verhuizing van een regulier verpleeghuis naar een innovatieve woonvorm. Door een voortdurende cultuurverandering binnen de langdurige zorg worden innovatieve woonvormen ontwikkeld die als doel hebben tegemoet te komen aan de behoeften van bewoners en persoonsgerichte zorg te bevorderen. De ontwikkeling van deze woonvormen leidt tot een toename in verhuizingen, wat een negatieve impact kan hebben op alle betrokkenen. Het is daarom belangrijk meer inzicht te verkrijgen in de impact van en ervaringen met deze verhuizingen. Deze kennis stelt zorgorganisaties en beleidsmakers in staat om verhuisstrategieën aan te passen en het verhuisproces te optimaliseren.

Hoofdstuk 1 geeft een algemene introductie van het onderwerp van deze thesis. Er wordt informatie verstrekt over de volgende onderwerpen: verpleeghuizen in Nederland, innovatieve woonvormen en verhuizingen binnen de langdurige zorg. Daarnaast worden de doelstellingen en de opzet van deze thesis gespecificeerd.

Hoofdstuk 2 presenteert een scoping review die een overzicht biedt van innovatieve woonvormen en hun kenmerken. In totaal werden 56 artikelen geïdentificeerd waarin zeven verschillende innovatieve woonvormen worden beschreven. Deze omvatten: 1) kleinschalig wonen, waarbij een kleine groep ouderen samen een huishouden vormt in een huiselijke omgeving. Normalisering van het dagelijks leven staat hierin centraal en wordt gestimuleerd door het bevorderen van zelfstandigheid en zich te richten op betekenisvolle activiteiten; 2) het Green House Model, dat als doel heeft een huiselijke omgeving te creëren en de rol van zorgpersoneel te transformeren; 3) shared housing arrangements, waar een kleine groep ouderen samenleeft in een kleinschalige huiselijke omgeving en familie actief betrokken is bij het dagelijks leven; 4) zorgboerderijen, waar agrarische activiteiten worden gecombineerd met zorgdiensten; 5) dementia villages, die een dorpsachtige omgeving creëren dat niet op een instituut lijkt; 6) group homes, een groepsgerichte woonvorm voor bewoners met dementie; 7) intergenerationeel wonen, waar studenten en ouderen samenleven, gebaseerd op sociale wederkerigheid en gemeenschapsvorming. Daarnaast werden verschillende overkoepelende thema's geïdentificeerd: het ondersteunen van autonomie, het creëren van een kleinschalige en/of huiselijke omgeving, betrokkenheid van de gemeenschap, focus op natuur, integratie van werktaken en betrokkenheid van familieleden. Achtentwintig artikelen onderzochten de effecten van innovatieve woonvormen op stakeholders, voornamelijk gericht op kwaliteit van leven en aspecten van het dagelijks leven van bewoners. Deze review toont aan dat het belangrijk is om meer kennis te vergaren over de kernelementen van innovatieve woonvormen.

Een observationele longitudinale studie, beschreven in hoofdstuk 3, onderzocht wat voor invloed een verhuizing van een regulier verpleeghuis naar een innovatieve woonvorm op bewoners had. De studie volgde vijf groepsverhuizingen op vier locaties, waarbij 97 bewoners met 24-uurszorgbehoefte betrokken waren. Depressieve symptomen, cognitief functioneren en afhankelijkheid in dagelijkse activiteiten werden gemeten met behulp van vragenlijsten. Daarnaast werden observaties gebruikt om het dagelijks leven van bewoners te evalueren. Data werden verzameld een maand voor, twee weken na en zes maanden na de verhuisdag. Op de lange termijn (zes maanden na verhuizing) werden geen significante veranderingen gevonden in depressieve symptomen, cognitief functioneren en afhankelijkheid in dagelijkse activiteiten. Echter, op twee van de vier locaties was er op de korte termijn een significante toename in depressieve symptomen. Hoewel alle locaties de intentie hadden om het dagelijks leven van bewoners positief te beïnvloeden, werden er geen significante veranderingen waargenomen gedurende het verhuisproces. Bewoners ervaarden dezelfde hoeveelheid aan passieve/doelloze activiteiten, en in één locatie nam dit zelfs significant toe. Ook het sociale contact bleef grotendeels onveranderd, met uitzondering van één locatie waar twee weken na verhuizing tijdelijk een toename in sociale interactie werd waargenomen. Deze studie toont aan dat verhuizen naar een innovatieve woonvorm geen langdurige impact heeft op bewoners, maar dat er mogelijk wel een kortdurende toename in depressieve symptomen optreedt. Meer aandacht voor de aanpak en context van het gehele verhuisproces kan helpen om deze korte termijn effecten te voorkomen. Daarnaast is er behoefte aan meer inzicht in hoe het dagelijks leven van bewoners positief kan worden veranderd.

Hoofdstuk 4 exploreert hoe bewoners met dementie een verhuizing naar een innovatieve woonvorm ervaren. Een kwalitatieve studie werd uitgevoerd met semigestructureerde interviews en observaties in twee verpleeghuizen. Zestien bewoners werden geïncludeerd. De emoties van bewoners varieerden tijdens het verhuisproces van gevoelens van stress en onrust tot gevoelens van rust. Bewoners beschreven vijf thema's die belangrijk voor hen waren tijdens het verhuisproces: 1) ze benadrukten het belang van het ontwerp van de fysieke omgeving van de nieuwe locatie. Ze vonden hun nieuwe omgeving of mooi, of niet mooi omdat het bepaalde decoraties miste/ze moeite hadden met het vinden van de weg. 2) ze vonden het behoud van hun persoonlijke bezittingen belangrijk en ze ervaarden veel stress als deze bezittingen zonder hen ingepakt werden. Ze waren bang dat hun bezittingen kwijt zouden raken of gestolen zouden worden. 3) ze vonden een thuisgevoel belangrijk. 4) ze benadrukten het belang van het hebben van sociaal contact tijdens het verhuisproces. Hoewel personeel gewoonlijk een

zorggerelateerde rol inneemt, wisselden ze tijdens de verhuisdag naar een meer 'sociale rol'. Verder werd steun van familie na de verhuizing gewaardeerd. 5) ze vonden het belangrijk om betrokken te worden in het dagelijks leven. Denk hierbij aan betrokken zijn bij dagelijkse beslissingen en zeggenschap te hebben over hun dagelijks leven. Deze studie liet zien dat bewoners niet actief betrokken werden gedurende het verhuisproces. Dit ondanks hun duidelijk behoefte om betrokken te worden. Dit onderzoek benadrukt de noodzaak om bewoners met dementie te betrekken bij hun verhuizing en rekening te houden met hun behoeften en wensen.

Een kwalitatieve studie, gepresenteerd in hoofdstuk 5, bestudeerde het perspectief van mantelzorgers gedurende het verhuisproces van hun naaste van een regulier verpleeghuis naar een innovatieve woonvorm. Drie verpleeghuizen, die 24-uurszorg leverden en een verhuizing op de planning hadden staan, werden geïncludeerd. In totaal werden er semigestructureerde interviews afgenomen bij 22 mantelzorgers, waarvan de naaste een verhuizing doormaakte. Mantelzorgers hielpen hun naaste met de verhuizen, waarbij ze een voornamelijk praktische rol innamen, zoals het inpakken van bezittingen en het kiezen van de nieuwe kamer. Verder ervaarde mantelzorgers een wisselwerking tussen de emoties van hun naaste en henzelf, wat inhoudt dat hoe de bewoners de verhuizing ervaren hadden invloed had op de ervaringen van mantelzorgers. Ze moesten gedurende het verhuisproces communiceren met hun naaste en personeelsleden, wat ze als een uitdaging zagen. Ze ervoeren verschillende moeilijkheden, zoals onzekerheid over wanneer ze hun naaste moesten informeren over de verhuizing en welke personeelsleden ze konden benaderen voor informatie na de verhuizing. Als laatst waren mantelzorgers erg positief over de fysieke omgeving, waarbij ze het gevoel hadden dat het een verbetering was ten opzichte van de oude locatie. Ze waren echter kritischer over de beoogde cultuurverandering. Dit hoofdstuk laat zien dat het verhuizen van bewoners ook een grote impact heeft op mantelzorgers. Zorgorganisaties zouden de rollen en verantwoordelijkheden die mantelzorgers ervaren mee moeten nemen in het verhuisproces en deze zo nodig faciliteren. Informatieverstrekking en optimale communicatie zijn belangrijke elementen om dit te kunnen bereiken. Verder zou er meer nadruk gelegd moeten worden op het voorbereiden en betrekken van mantelzorgers ten opzichte van de beoogde cultuurverandering, gezien ze daar kritisch over waren.

Hoofdstuk 6 onderzoekt hoe medewerkers een verhuizing van een regulier verpleeghuis naar een innovatieve woonvorm ervaren. Een kwalitatieve studie vond plaats, waarbij semigestructureerde interviews en observaties afgenomen werden. Drie locaties die 24-

uurszorg leverden en een verhuizing op de planning hadden staan werden geselecteerd. 41 personeelsleden die op deze locaties werkten werden geïncludeerd. Personeel voelde zich verloren, zowel fysiek als emotioneel. Hoewel personeel vaak erg positief waren over de fysieke omgeving, benadrukten ze dat het belangrijk was hen te betrekken bij het ontwikkelen van een nieuwe locatie. Dit omdat ze het gevoel hadden dat de fysieke omgeving niet optimaal ontwikkeld was voor de bewoners. Hoewel personeel de potentie van de beoogde cultuurverandering zagen, ervaarden ze ook verschillende barrières. Personeel benadrukte het belang van constructieve communicatie en samenwerking. Deze studie laat zien dat verhuizen een stressvolle onderneming of voor personeel. De hulp die personeel nodig heeft bij het wennen aan de nieuwe situatie en nieuwe manier van werken werd onderschat.

Hoofdstuk 7 vat de belangrijkste bevindingen samen van dit proefschrift. Verder worden methodologische en theoretische overwegingen en mogelijkheden voor de toekomst besproken.

Impact

This thesis was part of the RELOCARE consortium, a collaboration between the universities of Groningen, Amsterdam, Tilburg, Nijmegen, Leiden, and Maastricht. This nationwide consortium focuses on 1) the prevalence and characteristics of relocations, 2) the optimalization of the relocation process, and 3) gaining insight into the impact of relocations towards innovative living arrangements. Every topic was part of a PhD trajectory led by two universities. Each university is part of one of the six networks focusing on long-term care for older adults. These six networks together form the SANO network (Samenwerkende Academische Netwerken Ouderenzorg, collaborating academic networks of long-term care for older adults). The studies that are presented in this thesis provide valuable insights concerning relocations from regular nursing homes to innovative living arrangements. This chapter reflects on the societal and scientific impact of these findings. Furthermore, it describes how the findings have been disseminated to a broader audience.

Societal impact

Practice

Optimizing the relocation process is a crucial part of providing optimal quality of care and this thesis shows that this is not sufficiently taken into account. Care organizations often express the need to gain more insight into their relocation process, as they experience planning a relocation as a time-intensive and complicated process. Currently, the main focus of a relocation process is on the physical environment and practical matters (such as coordinating the actual move) and less on the impact of the relocation on residents, family and staff. In order to provide person-centred care, taking these aspects into account is important. Care organizations express a need to learn from this experience and develop dos and don'ts for future relocations. Therefore, we have chosen to discuss the results of every relocation with the individual care organizations included in our studies. Results were shared and discussed with managers, policy officers and other interested groups, such as care staff, psychologists and specialists in geriatric medicine. This did not only enable care organizations to learn from the relocation process, but also to gain insight into the intended culture change and how this developed over time. Furthermore, the results of this thesis contributed to the development of a toolkit that will provide support in optimizing a relocation process, by focusing on improving autonomy, shared decision-making and active involvement of all stakeholders.

Besides informing the participating care organizations, it is also important to inform the broader audience about the results. As this project is part of the RELOCARE consortium, this

collaboration automatically leads to a nationwide possibility to disseminate the findings, using the SANO network. SANO organizes a yearly symposium, giving the opportunity to present current research that is performed throughout all universities and providing a platform for relevant research. Furthermore, all partners from the SANO network have implementation employees that collaborate in order to disseminate the findings to a broader audience. Results from this thesis were presented at symposia and workshops targeting care staff and other involved stakeholders, such as the *'Zoek het uit!'*-conference organized by Vilans, the AWO-L symposium organized by the Living Lab in Ageing and Long-term Care, the Gerontology Congress, organized by NVG-knows, and multiple expert panels. Furthermore, this research project is part of the Living Lab in Ageing and Long-Term Care.[1,2] This is a structural collaboration between Maastricht university, Zuyd University of Applied Science, two vocational training institutes and nine care organizations. Both the university and practice have linking pins that connect research to practice and vice versa. This leads to an engaging platform for disseminating the findings of this thesis to practice and inform interested parties concerning this research topic.

Policy

As this research project is funded by the Ministry of Health, Welfare and Sports (VWS), the link between research and policy is important and evident. The RELOCARE consortium has already shared intermediate results, by organizing a symposium inviting a delegation of the ministry and stakeholders (organizations and client representatives). There I presented the results of this thesis and discussed its impact on policy. Furthermore, the final results will be shared by organizing a symposium (expected for June 2025), providing a policy document and a practical toolbox. The findings and practical implications can then be redirected to policy in order to gain maximal impact on this topic.

Improving the quality of care and living is an important pillar in our society and integrated in current Dutch policy (generiek Kompas and programma Wonen, Ondersteuning en Zorg voor Ouderen, WOZO).[3,4] An important building block is knowing and understanding the wishes and needs of residents. It is important for residents to maintain autonomy over their lives. Our research adds to the understanding of the wishes and needs that residents have when relocating, thereby providing insight into how to improve quality of care and life during such an impactful process.[5] Furthermore, building networks, organizing work and learning and developing are other important building blocks. Our research exposes several challenges that

residents, families and staff experience in communicating and collaborating. Furthermore, this dissertation provides insight into the needs that staff experience in order to improve their quality of work and develop the needed competencies in order to provide person-centred care and successfully engage in culture change.[6] As this dissertation followed multiple relocation processes, it provided insight into the impact on residents, and how relocating could possibly affect quality of care and life.[7] Policy increasingly focuses on the environment older adults live in and this thesis adds to the existing body of knowledge by providing insight into the change in environment throughout a relocation process. Furthermore, this thesis provides international examples of innovative living arrangements that aim to improve quality of care and life.[8]

Scientific impact

This dissertation and the RELOCARE consortium as a whole have provided more insight into the characteristics of relocations, how to optimize a relocation process and the impact of relocating to an innovative living arrangement. The findings presented in this thesis contribute to the underexposed topic of relocating to an innovative living arrangement. It sheds light on the diversity of innovative living arrangements that are described within literature (*Chapter 2*). Furthermore, it provides valuable insights into the impact of relocating on residents (*Chapter 3*), Last, it examines the experiences of residents, family caregivers and staff members (*Chapter 4, 5 and 6*). This thesis provides a basis for follow-up research to further explore the impact of and experiences with these relocations. Additionally, the RELOCARE consortium as a whole examined relocations in general, leading to a base of knowledge concerning this topic.

This project has led to several publications in peer-reviewed, international journals. Furthermore, multiple national and international conferences were attended. Nationally, through workshops and presentations, the results were shared at the above-mentioned national conferences. Internationally, results were presented at the International Psychogeriatric Association in 2023 in Lisbon, Portugal; the Gerontological Society of America in 2023 in Tampa, America; and the Nordic Congress of Gerontology in 2024 in Stockholm, Sweden. The International Psychogeriatric Association has published an article in the IPA bulletin[9] focusing on this research project and several care organizations have published information about this project on their forums. Furthermore, all information regarding the RELOCARE consortium and its studies can be found on the official website: www.relocare-sano.nl.

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D

Dankwoord

Ik kan mijn dankwoord maar op een manier openen en dat is met een goede Harry Potter quote: *"There are some things you can't share without ending up liking each other, and knocking out a twelve-foot mountain troll is one of them"*. Mijn proefschrift voelde soms wel een beetje als het knock-out moeten slaan van een bergtrol, maar met trots kijk ik nu naar het eindresultaat. Graag wil ik iedereen die me in dat proces mee heeft geholpen bedanken.

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PhD'ers en wat ben ik daar blij mee! Als mede 'innovatieve woonvorm'-onderzoekster, hebben we samen gespard, data-verzameld, en zijn we samen op congressen geweest. Maar we hebben voornamelijk veel lol en gezelligheid beleefd. Al kan ik me voorstellen dat een panische Mara in het vliegtuig krijgen niet hoog op je 'bucketlist' stond. Als een echte champ heb je mijn hand toen vastgehouden en daarom zou ik ook niemand anders willen als paranimf om mijn hand vast te houden tijdens de verdediging. Ik wens je het allerbeste met de toekomst en de zorgboerderij en ik kom zeker kijken!

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hebben die ook Harry Potter quotes in haar proefschrift probeert te stoppen. Na die maanden is het dan toch eindelijk zover: allebei kunnen we onszelf (bijna of helemaal) doctor noemen.

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A

About the author

Mara Brouwers was born on February 5, 1997 in Lottum, The Netherlands. In 2018, she obtained her Bachelor's degree in Psychology at the Radboud University in Nijmegen. Subsequently, Mara followed the research master Behavioral Science also at the Radboud University in Nijmegen. During her bachelor's and master's, Mara performed research focusing on the full body illusion and its relationship with fantasy proneness, and on creativity and music. She finished her Master's degree in 2020.

In October 2020, Mara started her PhD research within the RELOCARE consortium, a collaboration between six universities (the SANO network). The project was funded by the Ministry of Welfare, Health and Sports. Her project was also embedded within the Living Lab in Ageing and Long-Term Care. Mara's research focuses on relocations from regular nursing homes towards innovative living arrangements. The main aims of this project were 1) to develop an overview of innovative living arrangements described in literature, 2) to gain insight into the impact on residents when relocating, and 3) to gain insight into the experiences of residents, their family caregivers and staff members with these relocations. During her PhD, Mara attended several national and international conferences, gave small group teacher trainings, supervised bachelor's and master's students, was part of expert panel meetings, and organized several information sessions with locations included in her studies. Since February 2025, Mara has started as postdoc researcher at the department of organisational design and development of the Radboud University Nijmegen.

Mara currently lives in Neerkant with her partner. In her free time, she enjoys spending time with her family, dog, and two horses. Her hobbies are horseback riding, reading, running, singing, playing trumpet and baking/cooking.


P

List of publications

ARTICLES

Brouwers, M., de Boer, B., Groen, W.G., Gabrio, A., & Verbeek, H., on behalf of the RELOCARE consortium. Depressive signs and daily life of residents when relocating from a regular to an innovative nursing home. *Journal of the American Medical Directors Association*. 2024;25(12): 105298.

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Brouwers, M., de Boer, B., Groen, W. G., & Verbeek, H., on behalf of the RELOCARE consortium. An overview of innovative living arrangements within long-term care and their characteristics: a scoping review. IPA conference symposium, 29 June - 2 July 2023, Lisbon, Portugal.

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Brouwers, M., de Boer, B., Groen, W. G., & Verbeek, H. on behalf of the RELOCARE consortium. Een overzicht van innovatieve zorgomgevingen voor ouderen als alternatief voor het reguliere verpleeghuis: een scoping review. Congress of Gerontology NVG knows, 14 October 2022, 's Hertogenbosch, The Netherlands.

ARTICLES OF THE RELOCARE CONSORTIUM

Schreuder, M. C., Landeweer, E. G. M., Perry, M., Zuidema, S. U., on behalf of the RELOCARE consortium. The Impact of Relocations Within Nursing Home Care on Long-Term Care Residents According to Stakeholders: a Qualitative Study. *Scandinavian Journal of Caring Sciences*. 2025;39(1):e13317

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Broekharst, D. S. E., Stoop, A., Caljouw, M. A. A., Achterberg, W. P., on behalf of the RELOCARE consortium. Relocating within and between nursing homes during infectious disease outbreaks: a focus group study. *Health science reports*. 2024;7:e1907.

Broekharst, D. S. E., Stoop, A., Achterberg, W. P., Caljouw, M. A. A., on behalf of the RELOCARE consortium. An exploration of relocation initiatives deployed within and between nursing homes: a qualitative study. *BMC Health services research*. 2024;24:22.

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Living Lab in Ageing and Long-Term Care

LIVING LAB IN AGEING AND LONG-TERM CARE

This thesis is part of the Living Lab in Ageing and Long-Term Care, a formal and structural multidisciplinary network consisting of Maastricht University, nine long-term care organizations (MeanderGroep Zuid-Limburg, Sevagram, Envida, Cicero Zorggroep, Zuyderland, Vivantes, De Zorggroep, Land van Horne & Proteion), Intermediate Vocational Training Institutes Gilde and VISTA college and Zuyd University of Applied Sciences, all located in the southern part of the Netherlands. In the Living Lab we aim to improve quality of care and life for older people and quality of work for staff employed in long-term care via a structural multidisciplinary collaboration between research, policy, education and practice. Practitioners (such as nurses, physicians, psychologists, physio- and occupational therapists), work together with managers, researchers, students, teachers and older people themselves to develop and test innovations in long-term care.

ACADEMISCHE WERKPLAATS OUDERENZORG LIMBURG

Dit proefschrift is onderdeel van de Academische Werkplaats Ouderenzorg Limburg, een structureel, multidisciplinair samenwerkingsverband tussen de Universiteit Maastricht, negen zorgorganisaties (MeanderGroep Zuid-Limburg, Sevagram, Envida, Cicero Zorggroep, Zuyderland, Vivantes, De Zorggroep, Land van Horne & Proteion), Gilde Zorgcollege, VISTA college en Zuyd Hogeschool. In de werkplaats draait het om het verbeteren van de kwaliteit van leven en zorg voor ouderen en de kwaliteit van werk voor iedereen die in de ouderenzorg werkt. Zorgverleners (zoals verpleegkundigen, verzorgenden, artsen, psychologen, fysio- en ergotherapeuten), beleidsmakers, onderzoekers, studenten en ouderen zelf wisselen kennis en ervaring uit. Daarnaast evalueren we vernieuwingen in de dagelijkse zorg. Praktijk, beleid, onderzoek en onderwijs gaan hierbij hand in hand.

PHD-THESES LIVING LAB IN AGEING AND LONG-TERM CARE/ PROEFSCHRIFTEN ACADEMISCHE WERKPLAATS OUDERENZORG LIMBURG

Mara Brouwers. Moving towards culture change. Insights into relocating nursing home residents with dementia to innovative living arrangements. 2025

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