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# Learning from Person-Centred Care Model in Belgian Elderly Care Homes during first wave of Covid-19

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**Abstract:** The Covid-19 pandemic revealed the crisis of the care sector for a global ageing population. Most of the countries across Europe were strongly impacted by the pandemics and one of the most vulnerable groups was the senior population, especially those who lived in care-homes. Since 2000, healthy ageing and the person-centred care model have become relevant concepts in the health sector. The application of the person-centred care model to the built environment requires the adaptation of building regulations and urban planning for providing a home-like environment. The current study was placed in Belgium for being a country where small-scale care facilities were widely implemented. The aim of this study was to analyse different domains of elderly care-homes in Belgium through a survey to question their relationship with the impact of the first wave of Covid-19. The results of the ten care-homes that responded to the survey showed a high implantation of the person-centred care model. Regarding Covid-19 infections, 5 out of 10 of the care homes had infected residents and only 2 of them had residents that passed away due to the infection. These two care homes were in the top three of the care homes with more residents. Moreover, several environmental and management aspects such as small-scaled units, individual bedrooms, outdoor access, and fixed staff for each unit were measures already implemented in the care homes and later recommended by authorities during the pandemic. Further research might investigate whether these aspects could influence the resilience of the care homes if compared with the number of infections in other care homes where those measures were still unimplemented.

**Keywords:** Person-Centred Care; Design; Care Management; Pandemics; Long-term care homes.

## 1. Introduction

Demographic ageing is a shared trend all over the world, where countries with higher incomes are already facing more than 20% share of their population aged 65 and older (UN, 2019). As the world's population is becoming more urbanised, societies are facing important challenges where ageing, environmental sustainability and health play a major role (Lehr, 2008; UN-Habitat, 2016). According to the World Health Organisation (Chan, 2017), health in the elderly is influenced by multiple factors where the living environment and the individual lifestyle play a significant role (Barton and Grant, 2006; EEA, 2019; WHO, 2019). Public policies need to understand the close relationship between population ageing and urban transformation, and the importance of creating supportive urban communities (Buffel and Phillipson, 2016; van Hoof et al., 2020).

Long-term care systems are unprepared to meet the needs of the ageing population, because urban environments and housing alternatives are not satisfying the needs of these citizens (WHO, 2007). Institutional care home models have historically been characterised by low privacy, rigidity of schedules for daily life activities, lack of residents' participation, and the promotion of dependency (Sancho Castiello, 2020). However, these kinds of institutional buildings were conceived for a minor share of the population which needed extra care services. This situation makes them seem obsolete in the current scenario.

Active and healthy ageing is a concept that focuses on improving quality of life and long-term autonomy for older adults (WHO, 2002). The improvement of healthcare, coordination and planning are important objectives of caring for the elderly, especially

those with multiple chronic conditions and/or functional limitations (Goodwin, 2016). Since 2000, healthy ageing and the person-centred care model have become relevant concepts in the health sector, including public health promotion and prevention, social and care services and patients' care (HIN, 2014). The person-centred care approach emerges as the model that can satisfy people's needs and desires (Brooker, 2013; Martínez Rodríguez, 2016; Rodríguez Rodríguez et al., 2017; Kitwood, 2019). This model applies on environmental and architectural design as well as on quality of services and care attention (such as flexibility of uses and paces, and a close relationship between residents and staff, many times referred to as a convivial or familiar unit). The application of the person-centred care model to the built environment requires the adaptation of building regulations and urban planning in order to provide a small-scaled and home-like environment. Several features become relevant in these small-scale care facilities such as the proximity to the person's community or neighbourhood, the building layout, the contact with nature and outdoors, the room configuration or the common spaces (Rijnaard et al., 2016; Joseph, Choi and Quan, 2016; Marquadt, Buetter and Motzek, 2014).

There are multiple solutions regarding residential and care services adapted to cultural backgrounds and social care systems. In Europe, these kinds of long-term care centres are usually reserved for high-dependent profiles, commonly associated with dementia or major disabilities. However, the situation varies tremendously between different countries and local contexts.

The Covid-19 emergency has revealed the crisis of the care sector (Hupkau and Petrongolo, 2020) and has emphasised the need for research on the built environment of elderly care homes and its relationship with infection control (Stall et al., 2020; Allen and Marr, 2020; Wang, 2020). During the first wave of Covid-19 (first semester 2020), elderly care homes reported more than 50% of deaths in Europe (Kluge, 2020) and factors that have influenced this drama need to be further studied. There are multiple factors that were related with the high mortality rates in care homes in Europe during the first wave of Covid-19 in the beginning of 2020. Some of them are the contagiousness of the new virus, the decisions made by directors and staff, health authorities' recommendations, hygienic and test protocols, group size of residents, design of the living environment and spatial organisation, movement restriction or the isolation protocols. However, there were some parameters in spatial design, provision and quality of services and care management that might improve the resilience of the care homes to cope with the pandemics' situation.

Thus, the aim of this study is to analyse different domains of elderly care homes in Belgium to question their relationship with the impact of the first wave of Covid-19.

## 2. Methods

Survey research was proposed to learn about the relationship between the care facilities and the Covid-19 health emergency. The study was placed in Belgium for being a country where small-scale care facilities are widely implemented. The survey was delivered through the Flemish Network of Small-Scale Normalised Living (KGW) and the W13 group in South-West Flanders. Both networks group person-centred care model professionals and best-practice on health and social care across the Belgian Flemish region. The survey was launched on 18<sup>th</sup> May 2020 and closed on 10<sup>th</sup> June 2020. The respondents were either the directors of the care homes or the staff member appointed by them.

The design of the survey was structured on a yes/no questionnaire considering several domains applicable at a small-scale care facility. Those domains included general information regarding the care home, the care model, environmental features and management aspects. Impact of Covid-19 in these care homes was included to address the main question of the research.

The survey items, for the first four domains, were selected from literature on care homes that applied the person-centred care model (Day, Carreon and Stump, 2000; Blackman, van Schaik and Martyr, 2007; Fleming and Purandare, 2010; The King's Fund, 2014; Martínez Rodríguez, 2016; Ma et al., 2017) and complemented by consultancy of an expert on the topic. Several references were consulted to analyse the specificities of each care home, combining design of the building, management and integrated care model (Davis, Fleming and Marshall, 2016). With regards to the built environment, indicators that analyse the quality of life in residents such as contact with nature, arrangement of outdoor spaces, stimulating views and adequate indoor lighting, which have been exhaustively analysed in past research (Fleming and Purandare, 2010;

Milaneschi et al., 2015; DEEP, 2020; Zeisel et al., 2003; Barrett, Sharma and Zeisel, 2019) were thoroughly chose and partially included. Finally, several items collected specific data about Covid-19 incidence numbers, during the first wave of pandemics.

### 3. Results

The survey was sent to care homes from the KGW network and completed by care homes from the W13 group. A total of ten responses were received, six of them from the KGW network, which entailed a response rate of 35%. Figure 1 illustrates the exterior appearance of the elderly care homes as well as their geographical location.



Figure 1. External view and elderly care home's location. Care homes' identification was published with permission.

The survey gathered information from five domains: 1) general information, 2) care model, 3) environmental aspects, 4) management aspects and 5) rates of infections and epidemics). The main data is shown in Table 1.

Table 1. Survey results.

The organisation of the centre considers small-size units for the management.	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N
The management is general, with all the professionals/care workers for the whole centre.	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N
	A. Huis	B1. Regina	B2. Regina	C. WZC Ter	D. WZC De	E. WZC De	F. WZC	G.	H. St. Jozef	I. WZC H-	
Professionals and workers are steady, fixed in each unit or floor (in care homes).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Average ratio of care professionals and staff by resident. Please provide the number. (All the staff working in nursing homes/number of r.)	0,5	0,5	0,5	0,5 f	0,5	0,5 g	0,5	0,7	0,7	0,5	
There is a support and continuous training program for care professionals and staff.	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	
<b>5. Rates of infections and epidemics</b>											
N. of infections during first wave of Covid-19 (results date June 12 of 2020)	0	1	0	0	0 <sup>h</sup>	0 <sup>h</sup>	21	1	37	3	
N. of deceasesd due to Covid-19	0	0	0	0	0	0	4	0	7	0	
Are there any updated statistics about infections /people infected in the centres?	N	N	N	N	N	N	Y	Y	Y	N	
Could it be possible to access/identify the number of infections and deaths in the centres?	N	Y	Y	Y	N	N	Y	Y <sup>i</sup>	Y <sup>i</sup>	N	

Notes:

- a. There was also task integration.
- b. All professionals acted on all important domains of life. Specific competences were transmitted to colleagues.
- c. Currently shifting focus and working towards that.
- d. Plus 8 flats for couples.
- e. More rooms are individual except for rooms designated to couples.
- f. For 16 residents in the morning, 3 caregivers and 1 living assistant. In the evening 1 caregiver and 1 noun for 32 residents.
- g. More detail about this ratio per unit: From 6.30 h until 8.30 h: 1 caregiver. From 8.30 h until 17.30 h: 2-4 caregivers + nurse + living assistant. From 17.30 until 21 h: 1 nurse.
- h. They were anticipated to the protocols shared by the Belgian Government. The experience of the centre was that waiting for guidelines of the Government was a risk. Anticipation and acting proactively was the thing to do. An open and honest communication with stakeholders/families was very important.
- i. They followed the national guidelines plus additional measures. No visit for informal caregivers nor volunteers during the lockdown. Every caregiver and collaborator wore mouth masks long before it was obligatory. Collaborators who were ill from COVID-19 could not start working until they had a negative COVID test. They organised family visits in tents in the garden and in vans that had special equipment for it.



#### 4. Discussion

The results showed that the average age of the residents was 83,5 years and they usually shared a life expectancy of 3 years living in the care homes. The average number of persons living in a small care unit was normally 16 persons and below, except in 3 care homes (B1, G and H) which had between 22 and 40 people. Some of the care homes also offered services at lifetime homes, but this was not a common service.

All the care homes surveyed shared similar characteristics as they applied the principles of the person-centred care model. Thus, in most care homes (9 out of 10) members of the staff participated in task integration, which meant that caregivers could do all kinds of tasks – not only the specific ones related to their job description – by using the competencies related to their education or expertise. For instance, a nurse could also cook meals, but he/she involved the residents in the activity too. There was an organisational model based on teams in all care homes where there were reference professionals in charge of the well-being of one or more residents. Another important characteristic in almost all respondents (7 out of 10) was that residents and their relatives were actively engaged in the definition and development of their care and life plan.

Regarding environmental aspects, 8 out of 10 of the surveyed care homes had daily common spaces (with a capacity of up to 15 people) in combination with smaller domestic rooms (such as a kitchen or a dining room) in each home unit. All care homes provided accessibility to the kitchen; hence the residents could take part of the cooking process and benefit from the sensory stimuli that certain activities provide. All the care homes had individual rooms and in 2 out of 10 of them there were double bedrooms for couples. In all the study cases, residents were able to decorate and personalise their rooms. Additionally, all care homes had outdoor views from the bedrooms as well as from the common spaces.

Concerning the management, 8 out of 10 of the care homes were arranged according to small-size units for its coordination. In 9 out of 10 of the care homes, staff members remained fixed for each small-size unit. In terms of the average ratio, 8 out of 10 of the care homes had a ratio of 0,5 of staff members per resident, and 2 out of 10 had a ratio of 0,7 of staff members per resident. In 9 out of 10 of the care homes, staff members were offered continuous training programs to keep updated and to share knowledge on good quality of care.

Management aspects were restructured to minimise the effects of Covid-19 first wave. Hence, daily common spaces were closed and visits from relatives and volunteers were completely forbidden. In one case (care home H), while staff members were unable to perform their jobs due to their own infection, students and nurses were allowed to volunteer for providing company to infected residents. Furthermore, visits from relatives had strict measures, such as transparent barriers to separate the residents from the visitors, the security distance of 1,5 m and mask wearing. An online management tool for visit appointments was used in order to arrange time schedules (Costa, 2020). Outdoor spaces were accessible thus, residents could walk around respecting security measures.

In the first semester of the 2020, and due to Covid-19 first wave, 5 out of 10 of the care homes had infected residents. In 3 out of 10 of the care homes there were isolated cases (from 1 to 3 residents) and none of the residents passed away. However, the other 2 out of 10 corresponding to care homes F and H, which were 2 of the 3 most populated care homes surveyed, reported 21 and 37 infected residents from which 19 % of them passed away due to the infection.

#### 5. Conclusions

This survey study gathers information about the residents' profile, care home typology, care model, environmental aspects, management aspects and rates of infections due to Covid-19 during the first semester of 2020 in 10 Belgian elderly care homes. Its results show that as the only 2 care homes in which resident's deaths were registered belong to the 3 most populated care homes. There are no more relationships shown within the results of the different domains surveyed, and the sample is too small so the results cannot be extrapolated. However, it is a fact that several environmental and management aspects such as small-scaled units, individual bedrooms, outdoor access, and fixed staff for each unit were measures already implemented in the care homes and later recommended by authorities during the pandemic. These aspects could

influence the resilience of the care homes if compared to the number of infections in other care homes where those measures were still unimplemented.

Further studies should shed light on the impact of the pandemic in care homes and the need for new design solutions for apartments, collective housing, and care homes to increase the possibilities for social exchange, intergenerational inclusion, and quality of life until death. Providing quality of life in later stages of life is a global topic that each society and culture is aiming to achieve. The big strike for many relatives during Covid-19 first wave was to leave people dying alone and or even being unable to meet for funerals, as stated by one resident “I would rather see my children at risk of infection than not see them. Soon I will die alone” (The, 2020).

This study has several limitations. Firstly, data collection of the care homes during the pandemics period was challenging and this had an impact on the low number of answers (n=10). Secondly, the survey items could be further studied to improve the reliability of the survey. Thirdly, lack of funding for the project made it not feasible to replicate the survey several months later to analyse the impact through time. Including additional data collection techniques such as interviews, would benefit the data available for the results. Overcoming these limitations could lead to a richer set of data from which more precise conclusions may be generated and further recommendations can be made. This will lead to more resilient care home designs, which deal with uncertain future scenarios while providing the best environment for the end of life care.

### Contributor statement

Both authors have been equally involved in the writing of this paper. Elisa Pozo Menéndez has been the main coordinator of the study, preparing the questionnaires, collecting and analysing the presented data. Laura Cambra Rufino has structured this article and contributed to the arrangement of the information.

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