Federaal Kenniscentrum voor de Gezondheidszorg
Centre Fédéral d'Expertise des Soins de Santé
Belgian Health Care Knowledge Centre

POLITIQUE DE DOTATION EN PERSONNEL DES ÉTABLISSEMENTS D'HÉBERGEMENT POUR PERSONNES ÂGÉES : UNE ENQUÊTE EXPLORATOIRE MENÉE PENDANT LA PANDÉMIE DE COVID-19

YANNAI DEJONGHE, CÉLINE RICOUR, CHRISTOPHE DE MEESTER, ALICE MALTER, CÉLIA PRIMUS-DE JONG, KOEN VAN DEN HEEDE, CARINE VAN DE VOORDE, MARIE-THÉRÈSE VAN DURME, HERLINDE WYNENDAELE, JEROEN TRYBOU

Ce document est basé sur une enquête exploratoire menée auprès du personnel et de la direction travaillant dans des maisons de retraite pendant la pandémie de COVID-19. Le contexte de la pandémie COVID-19 a rendu impossible l'obtention d'un échantillon représentatif. Ce travail doit donc être considéré comme exploratoire avec une validité externe limitée. Les conclusions doivent être lues en tenant compte de ces limites. Par ailleurs, le KCE n'a pas suivi, compte tenu du contexte spécifique, ses procédures méthodologiques habituelles.

TABLE DES MATIÈRES

TABLE DES MATIÈRES 1
SYNTHÈSE 4
1 INTRODUCTION 7
1.1 STUDY AIM 7
2 BACKGROUND 8
2.1 STAFFING LEVELS IN NURSING HOMES 8
2.1.1 Wellbeing of nursing and caring staff 8
2.1.2 Work environment 9
2.2 THE CHANGING CONTEXT OF ELDERLY CARE IN BELGIUM 9
2.2.1 Categories of staffing 10
2.2.3 Nursing home landscape 17
3 METHODS 18
3.1 SURVEY DEVELOPMENT 18
3.1.1 Existing instruments and scanning the literature 18
3.1.2 Interviews and face validity 20
3.1.3 Pilot testing 20
3.2 SETTING AND SAMPLE 21
3.3 DATA COLLECTION 22
3.4 DATA ANALYSIS 23
4 RESULTS 24
4.1 STUDY SAMPLE 24
4.2 ORGANISATIONAL LEVEL 24
4.2.1 Organisational characteristics 24
4.2.2 Resident care needs and staffing levels 25
4.2.3 Impact of COVID-19 26
4.3 STAFF LEVEL 27
4.3.1 Staffing characteristics 27
4.3.2 Work environment 28
4.3.3 Staffing levels 29
4.3.4 Staff wellbeing 30
4.3.5 Staff-perceived quality of the work environment 31
4.3.6 Staff-perceived quality of care 32
4.3.7 Care left undone 32
4.3.8 Person-centred care 33
4.3.9 Tasks below nurses' skill level 34
5 DISCUSSION AND CONCLUSION 35
5.1 LIMITATIONS OF THE STUDY 35
5.2 DISCUSSION AND CONCLUSION OF STUDY FINDINGS 36

5.2.1 Organisational level 36
5.2.2 Staff level 36
- REFERENCES 40
- APPENDICES 44

LISTE DES FIGURES

Figure 1 – Conceptual framework SHURP-study 18
Figure 2 – Sample subgroups 21

LISTE DES TABLEAUX

Table 1 – Staffing standards expressed in full-time equivalents for homes for the elderly, by qualification and by federated entity 13
Table 2 – Staffing standards expressed in full-time equivalents and per 30 residents for nursing homes, by qualification and by federated entity 14
Table 3 – Financing standards by qualification, expressed in full-time equivalents and per 30 residents in homes for the elderly 15
Table 4 – Financing standards by qualification, expressed in full-time equivalents and per 30 residents in nursing homes 15
Table 5 – Inclusion and exclusion criteria for staff members 22
Table 6 – Sample description participating nursing homes 24
Table 7 – Average number of residential units in nursing homes 25
Table 8 – Number of residents and percentage of care profiles in the nursing home, median (and interquartile range) 25
Table 9 – Change in occupancy rate (residents) in nursing home at the time of the survey and the same month in 2019 (%) 26
Table 10 – Change in workload in nursing home at the time of the survey and the same month in 2019 (%) 27
Table 11 – Sample description nursing home staff 27
Table 12 – Overall evaluation of the work environment in nursing homes (%) 28
Table 13 – Evaluation work environment in nursing homes measured by PES-NWI, percentage that (totally) agreed with items (%) 28
Table 14 – Resident-to-staff ratio in nursing homes (mean) 29
Table 15 – High risk of burnout, measured by MBI (%) 30
Table 16 – Evaluation of job satisfaction in nursing homes, percentage (very) dissatisfied (%) 30
Table 17 – Intending to leave current job, next job interest (%) 31
Table 18 – Staff-perceived quality of care in nursing home (%) 32
Table 19 – Rationing of care, measured by BERNCA-NH, % sometimes/often 33
Table 20 – Organised person-centred care, measured by P-CAT, % (totally) agree 33
Table 21 – Tasks below nurses' skill level performed by RNs during most recent shift, % sometimes/often 34

LISTE DES ABBRÉVIATIONS

ABBREVIATION	DEFINITION
ADL	Activities of daily living
AViQ	Agence pour une Vie de Qualité
BelRAI	Belgian Resident Assessment Instrument
BERNCA-NH	Basel Extent of Rationing of Nursing Care-Nursing homes
COCOM	Commission communautaire commune (Joint Community Commission)
EU	European Union
FTE	Full-time equivalent
ICU	Intensive care unit
MBI	Maslach Burnout Inventory
MD	Ministerial Decree
MRPA	Home for the elderly *(maisons de repos pour personnes âgées)*
MRS	Nursing home (*maison de repos et de soins*)
NWI	Nursing Work Index
P-CAT	Person-centred Care Assessment Tool
PES-NWI	Practice Environment Scale of the Nursing Work Index
RD	Royal Decree
RIZIV-INAMI	National Institute for Health and Disability Insurance (*Rijksinstituut voor Ziekte- en Invaliditeitsverzekering/ Institut National d'Assurance Maladie-Invalidité*)
RN	Registered nurse
SAQ	Safety Attitude Questionnaire
SHURP	Swiss Nursing Homes Human Resources Project
WHO	World Health Organization
WZC	Home for the elderly (*woonzorgcentrum*)

SYNTHÈSE

- En milieu hospitalier, il a déjà été largement démontré qu'il existe une relation entre, d'une part, les niveaux de dotation en personnel infirmier (nombre et mix de compétences) et la qualité de l'environnement de travail, et d'autre part le bien-être du personnel et la qualité des soins.
- La présente étude avait pour but d'explorer des caractéristiques similaires relatives au personnel (ratio résidents/soignants, environnement de travail, soins non réalisés, bien-être du personnel, qualité des soins perçue par le personnel, etc.) dans le cadre des établissements d'hébergement pour personnes âgées (MR et MRS). En effet, les données probantes relatives à ce contexte de soins spécifique sont assez limitées, même si des études internationales ont déjà décrit des problèmes et des relations similaires. Par ailleurs, en raison de la composition différente du personnel, il ne suffit pas d'interroger uniquement les infirmiers comme cela se fait traditionnellement en milieu hospitalier ; pour cette raison, les aides-soignants ainsi que d'autres professionnels de santé (p. ex. kinésithérapeutes, ergothérapeutes, psychologues) ont également été interrogés.

  Cette étude a été menée pendant la pandémie de COVID-19, ce qui a eu un impact majeur sur sa mise en œuvre telle qu'elle avait été prédéfinie ; elle doit par conséquent être considérée comme une étude exploratoire.
- La Belgique compte 1 555 MR et MRS (822 en Flandre, 595 en Wallonie et 138 à Bruxelles). On distingue deux types d'établissement : les « maisons de repos » (MR), qui ont un caractère principalement résidentiel, et les « maisons de repos et de soins » (MRS), qui ont également une composante de soins spécifique. Les normes de dotation en personnel diffèrent selon qu'il s'agit d'une MR ou d'une MRS.
- Depuis la 6e réforme de l'État, les entités fédérées sont entièrement responsables de l'agrément et du financement des établissements d'hébergement pour personnes âgées.

  Pour l'agrément, elles sont fort différentes entre entités fédérées pour les MR mais assez similaires pour les MRS.

  En ce qui concerne le financement, la plupart des normes reposent encore, dans toutes les entités fédérées (sauf en Communauté germanophone), sur l'ancien système fédéral, mais on observe néanmoins certaines différences (p. ex. les efforts financiers en faveur du personnel et les ajustements des normes de dotation suite à la pandémie de COVID-19 sont plus marqués en Flandre).
- Deux types d'outils ont été utilisés dans cette étude : un pour interroger le personnel (infirmiers, aides-soignants, paramédicaux) et un autre pour étudier les caractéristiques organisationnelles des établissements. Ces deux outils ont été développés sur la base d'instruments de mesure existants pour les hôpitaux (RN4CAST) et les maisons de repos (SHURP).
- Une stratégie d'échantillonnage aléatoire stratifiée (taille, secteur public/privé et région) a été appliquée afin d'obtenir un échantillon de 100 MR/MRS. Le recrutement (entre juin et décembre 2021) a cependant été très difficile car seules 56 MR/MRS sur les 367 échantillonnées (15 %) ont accepté de participer. Ce faible taux de participation est probablement dû à la pandémie de COVID-19 et à ses conséquences sur le personnel et les résidents, ou à une lassitude vis-à-vis des enquêtes.
- Le processus de collecte des données (en ligne ou sur papier) au sein des MR/MRS participantes a également été difficile car seules 46 d'entre elles ont fourni des informations sur les caractéristiques organisationnelles. Pour 6 établissements, les données étaient insuffisantes pour calculer avec précision les taux de réponse du personnel. Au total, 837 infirmiers et aides-soignants et 225 autres professionnels de santé ont répondu à l'enquête. Pour les établissements dont le taux de réponse a pu être calculé, celui-ci était de 40,2 % (785/1 954) pour les infirmiers et les aides-

soignants et de 62,6 % pour les autres professionnels de santé (213/340). Pour certaines variables de l'enquête, il y avait en outre des réponses manquantes (principalement dans les questionnaires sur papier).

- Pour toutes ces raisons, les résultats de cette étude doivent être interprétés avec prudence, car ils peuvent donner une image déformée de la réalité. Ils ne peuvent en tous cas pas être généralisés à l'ensemble du secteur des MR/MRS ; c'est pourquoi nous les qualifions d'« exploratoires ». Il n'a pas été possible d'analyser les différences entre établissements en raison du petit nombre de participants par établissement. Il a également été difficile de comparer les régions entre elles en raison de problèmes d'échantillonnage (p. ex. seulement 3 MR/MRS ont participé à Bruxelles et la proportion de MR était plus importante en Wallonie par rapport à la Flandre.
- Les résultats, basés sur 46 enquêtes sur les aspects organisationnels et 1 062 questionnaires remplis par le personnel (283 infirmiers, 554 aides-soignants et 225 autres professionnels de santé), se présentent comme suit :
  - La majorité des MR/MRS ont déclaré que leur taux d'occupation (nombre de résidents par rapport aux places disponibles) était similaire (pour 30 % des établissements), voire en baisse (pour 65 % des établissements), par rapport à avant la pandémie de COVID-19. Cependant, 20 % des MR/MRS rapportent que la charge de travail du personnel est restée la même et, pour 30 %, qu'elle a augmenté.
  - La majorité des prestataires de soins (69 % des infirmiers et des aides-soignants et 73 % des autres professionnels de santé) ont jugé la qualité de leur environnement de travail bonne ou très bonne. Des scores élevés ont été observés pour 3 dimensions (« relations collégiales », « vision sur la qualité des soins », « leadership »), tandis que des scores faibles ont été observés pour « adéquation des ressources humaines » et « implication dans la politique de la MR/MRS ». La coopération et la communication ont été jugées bonnes ou très bonnes par le personnel : les scores varient de 75 % pour la collaboration avec la direction, à 95 % pour la collaboration avec le personnel infirmier.
  - En moyenne, le ratio résidents/soignants (infirmiers et aides-soignants) est égal à 11,3. Ce chiffre varie de 6,9 le matin à 40 la nuit.
  - Le risque de burn-out est important mais pas aussi élevé que celui observé pendant la pandémie de COVID-19 dans d'autres contextes (p. ex. les unités de soins intensifs). Ainsi par exemple, un risque élevé d'épuisement émotionnel a été relevé chez 23 % des infirmiers, 24 % des aides-soignants et 12,4 % des autres professionnels de santé.
  - 21 % des infirmiers, 18 % des aides-soignants et 12 % des autres professionnels de santé sont (très) insatisfaits de leur travail. Les éléments les plus insatisfaisants sont le salaire (pour 44 % des infirmiers, 43 % des aides-soignants et 28 % des autres professionnels de santé) et les possibilités d'évolution de carrière (pour 38 % des infirmiers, 28 % des aides-soignants et 43 % des autres professionnels de santé).
  - 23 % des infirmiers, 29 % des aides-soignants et 33 % des autres professionnels de santé signalent leur intention de quitter leur emploi actuel. Dans notre échantillon, 8 % des infirmiers, 10 % des aides-soignants et 9 % des autres professionnels de santé avaient l'intention de chercher un emploi en dehors des soins de santé.
  - La qualité des soins a été perçue comme bonne par le personnel (77 % des infirmiers, 74 % des aides-soignants et 78 % des autres professionnels de santé l'ont jugée bonne ou très bonne). Cependant, seuls 53 % des infirmiers, 58 % des aides-soignants et 55 % des autres professionnels de santé ont déclaré avoir confiance dans la direction pour résoudre les problèmes signalés par le personnel.

- Le personnel a déclaré ne pas être en mesure de réaliser une part importante des soins. Cette proportion est la plus faible pour les activités ADL (rapportées par 24 % des infirmiers, 26 % des aides-soignants et 27 % des autres professionnels de santé) et la plus élevée pour la tenue des dossiers et la documentation des soins (44 % des infirmiers, 35 % des aides-soignants et 42 % des autres professionnels de santé).
- Seulement 36 % des infirmiers, 35 % des aides-soignants et 23 % des autres professionnels de santé sont (entièrement) d'accord avec l'affirmation selon laquelle leur organisation soutient les soins centrés sur la personne.
- Une proportion importante d'infirmiers déclarent avoir effectué, lors de leur dernier service, des tâches qui auraient également pu être réalisées par des non-infirmiers (p. ex. 98 % ont répondu à des appels téléphoniques et effectué des tâches administratives, 89 % ont nettoyé des équipements et rangé des chambres, 85 % ont fait des lits, 84 % ont effectué des tâches de logistique générale).

- Plusieurs résultats de cette étude exploratoire sont similaires aux résultats observés avant la pandémie de COVID dans d'autres contextes (p. ex. hôpitaux généraux). C'est par exemple le cas pour le risque de burn-out et l'intention de quitter le travail. Il en va de même pour l'adéquation des ressources humaines et l'implication dans la politique de l'établissement. Les soins non réalisés (surtout en matière de documentation des soins) et la possibilité de différenciation des tâches présentent également des similitudes avec les études précédentes menées en milieu hospitalier. Cependant, certaines différences peuvent également être observées avec d'autres recherches similaires menées dans d'autres contextes (p. ex. unités de soins intensifs). Par exemple, les scores de bien-être du personnel pendant la pandémie de COVID-19 sont meilleurs dans cette étude que ceux rapportés dans la littérature. Il est toutefois nécessaire de répéter cette recherche sur un échantillon représentatif avant de pouvoir valablement extrapoler ces résultats.

1 INTRODUCTION

Following a large European study (i.e. 'RN4CAST') conducted in 2009, KCE published a follow-up report on safe nurse staffing levels in acute hospitals in 2020.[1] As part of that report a survey among ± 5 000 Registered Nurses (RNs) in 84 hospitals was conducted to get input on: the nursing work environment; nurse staffing (measured by the number of patients per RN); skill-mix; nursing care left undone and nurse-perceived quality of care and different measures of nurse wellbeing (including burnout, job satisfaction and intention to leave). A large between-hospital variation was observed across the different measured concepts. Moreover, it was found that several factors of the work environment (e.g. nurse participation in hospital affairs) as well as staffing (i.e. patient-to-nurse ratio) were associated with nurse wellbeing and the care process (e.g. missed care). A similar research focussing on (and adapted to) the context of nursing homes is the subject of the current study.

In 2013 and 2018, the Swiss Nursing Homes Human Resources Project (SHURP) was conducted.[2-4] This three-year multi-centre study explored the relationships among various nursing home characteristics including work environment, caregiver outcomes and resident outcomes in Swiss nursing homes. The aim of the SHURP-study was similar to this study, in which the current state of staffing related characteristics in Belgian nursing homes is explored.

1.1 Study aim

This study aims to explore the current state of staffing related characteristics (e.g. resident-to-caregiver ratio, work environment, missed care, staff well-being, staff-perceived quality of care) in Belgian nursing homes. This research mainly relies on a cross-sectional survey among caring (RNs, care assistants) and allied health professionals (e.g. physiotherapists, occupational therapists, speech therapists) in a sample of Belgian nursing homes. In addition, a survey at the organisational level is used to capture data about relevant organisational characteristics.

This study was conducted during the COVID-19 pandemic. As nursing homes were highly affected by the pandemic with a clear impact on the implementation of the study design, it has to be considered as an explorative study.

2 BACKGROUND

2.1 Staffing levels in nursing homes

Care needs of nursing home residents are becoming increasingly more complex, challenging staff in providing custom and quality care.[5] Caregivers indicate that they often go home with work left undone and perceive not to provide the care they intended to do, or in a manner they would prefer.[5, 6] Defining suitable staffing guidelines in terms of minimum standards, staff mix, along with personnel skills and expertise enables nursing personnel to provide care in a consistent and adjusted manner, thus establishing a standard quality of care and enhancing quality of life for residents of nursing homes.[7]

Although prior nursing home research does provide evidence on how quality of care cannot be guaranteed below a certain staffing standard, there is no clear evidence implying that simply increasing staffing levels will naturally result in better quality of care.[8] International experts suggest to not only study staffing levels, but to include nursing home case and staff mix, along with personnel skills, expertise and education level as impacting factors.[8-11] Including these staff characteristics as research variables enables insight on differentiation in competencies, nursing roles and corresponding tasks.

RNs have a crucial role to play in the oversight and provision of safe and quality care, yet they are often understaffed and challenged with heavy workloads. According to prior research, one in five RNs working in nursing homes is frequently unable to complete necessary nursing tasks due to inadequate time or resources.[6] This phenomenon is referred to as 'missed care' and often results in poorer quality of care.

In 2015, Zúñiga found that a high quality of care in nursing homes was profoundly determined by a positive working environment, established through factors such as a good safety climate and adequate staffing.[12] Nursing home research also shows that staffing standards have a positive effect on nurse recruitment and retention, the reduction of nurse workloads, and quality of care. Aiken et al. (2010) found that in hospitals a higher proportion of RNs was associated with a better nurse-reported perceived quality of care.[13] More specifically, RNs were less likely to 'miss' care, to report complaints from patients or families, verbal abuse of RNs by staff or patients and poor to fair quality of care.

Furthermore, findings show that quality of care is also related with nurse wellbeing. For example, missed care is more common amongst RNs showing signs of burnout or job dissatisfaction. More precisely, in nursing homes the likelihood to miss needed care is five times higher when comparing RNs with burnout to RNs without burnout, while RNs who were dissatisfied were estimated 2.6 times more likely to miss care compared to RNs who were satisfied.[6]

2.1.1 Wellbeing of nursing and caring staff

From hospital-based research we know that the amount of staff that report quality of care deficits, high nurse burnout, job dissatisfaction and intention to leave their current positions is substantial.[14] Similar research in the nursing home setting is increasingly published. Lower rates of resident injuries and an increased resident satisfaction with quality of care have been associated with higher employee satisfaction.[15] In addition, research also shows that intention to leave is driven by numerous intrinsic and extrinsic job factors. Factors that drive the intrinsic job satisfaction include opportunities for personal growth, recognition for the work and participation in care decisions. Extrinsic job factors include pay satisfaction, workload factors (e.g. enough time for care, available resources or equipment) and positive supervisor behaviour. A combination of extrinsic job factors and personal characteristics (e.g. age, education level, experience) determine the intrinsic job satisfaction, which influences the overall job satisfaction and subsequently, the intention to leave.[16]

Aiken et al. (2010) illustrated that in a hospital setting a lower workload was associated with a lower prevalence of burnout, job dissatisfaction, poor to fair evaluation of the work environment and intention to leave among RNs in nursing homes.[13] In addition, it has been established that experienced workload and time pressure are strong predictors for the development of burnout.[17] According to the Maslach Burnout Inventory, which is an

instrument with both high reliability and validity as a measure of risk of burnout, there are three dimensions to burnout: emotional exhaustion, depersonalization and personal accomplishment.[18] In a study conducted by Montgomery et al. (2019), a strategy to reduce the risk of burnout in a healthcare setting is suggested.[19] This strategy entails the six areas of work life, namely (1) workload, (2) control, (3) reward, (4) community, (5) fairness and (6) values.[20] Prevention strategies should focus on building staff engagement and find an answer to the question "*What working conditions would need to change to make people want to work here and be fully engaged with their job?"*.

Job satisfaction, risk of burnout and a high turnover in nursing staff are increasingly being recognised as threats to resident safety and quality of care. Findings show that job satisfaction, risk of burnout and intention to leave are impacted by the nurse working environment. This leaves nursing homes tasked to provide adequate staff and resources in order for nursing staff to perform needed and quality care.[21]

2.1.2 Work environment

In 2002, research was conducted in order to develop a Practice Environment Scale (PES) from the Nursing Work Index (NWI), which comprised organisational characteristics of 'magnet hospitals'.[22] These are facilities that were able to attract and retain well-qualified RNs, resulting in a consistent manner of providing high-quality care.[23] This research was conducted by the American Academy of Nursing to identify characteristics that distinguished these specific work environments. As a result, the Magnet Recognition Program was developed, which aims to create a positive practice environment that empowers and engages its staff. The programme creates a pathway to this collaborate culture and establishes five components to do so: (1) transformational leadership, (2) structural empowerment, (3) exemplary professional practice, (4) new knowledge, innovation and improvement and (5) empirical quality results.[24] These components correspond with Lake's (2002) findings, as she identified a common set of organisational characteristics in magnet hospitals, being decentralisation of decision making to the level of the nursing unit; strong, effective and visible nursing leadership; recognition of professional nurse autonomy, accountability and responsibility for quality patient care; and adequate staffing and flexible scheduling.[22]

White et al. (2020) suggest that having work environment elements – other than adequate staffing and resources – are essential when supporting nursing staff to provide high quality care in nursing homes.[21] They describe a positive nurse working environment as a facility where RNs are less likely to show signs of job dissatisfaction or burnout and found that positive work environments are also associated with high quality of care. In conclusion, associations have been found between positive nurse work environments and improved patient safety, as well as reduced burnout and job satisfaction for RNs and other staff in nursing homes.

2.2 The changing context of elderly care in Belgium

In 2021, there were 2 229 121 Belgian inhabitants aged 65 years or older, which represents 19.4% of the total population.[25] According to the Federal Planning Office and Statistics Belgium, the ratio of people at working age (18 – 66 years old) per population aged 67 or over will decline steadily until 2040.[26] As stated in the report 'Demographic prospects, 2020-2070', the number of Belgian citizens who have reached the age of 67 or over is expected to be higher than the number of citizens aged under 18. As a result of the aging Belgian population, it is expected that the need for long-term care for the elderly will also continue to increase.

Admission trends show that Belgian senior citizens tend to postpone their stay in a nursing home, due to factors such as more developed ambulatory care services and the support of their family and caregivers at home, among other reasons. Postponing the admission to residential elderly care implies a decrease in the average length of stay in these facilities and an increase in the complexity of resident care needs.[27] The increasing complexity of elderly care is the multifactorial result of seniors being older, having greater multimorbidity and limitations of physical and cognitive functioning.[28] As resident care needs are growing, providing custom and quality care becomes a more complex and elaborate task for nursing home staff.[5] Several tools were developed in an attempt to capture this complexity of care

and classify residents accordingly. In Belgium there is a long tradition with measuring the KATZ-scores based on the KATZ-scale (e.g. used to link staffing standards to residential care profiles). It consists of a questionnaire evaluating the resident's abilities within the framework of activities of daily living (ADL) and is used to measure the degree of dependency of residents in nursing homes. These questions are then evaluated by a doctor who assigns a score to each resident for each of the six domains of ADL, ranging from 1 (no need for any help) to 4 (need for full help). As a result, care profiles can be defined (see Box 1).[29] Yet, with the BelRAI (the Belgian Resident Assessment Instrument) an alternative instrument aiming to better capture the complexity of residential care is gradually implemented.

2.2.1 Categories of staffing

Nursing and caring staff

In Belgium there are two educational routes that allow the practice of the nursing profession. First, there is a four-year programme on Bachelor-level that is organised by university colleges. This level of education fits the European requirements for nursing education.[30] After completing the Bachelor programme, an additional training can be followed that results in the obtaining of a Master's degree. Second, there is a programme[a] following secondary level education in which a diploma degree is obtained. In the nurse working environment, there is no restriction in the practice and function of these two different diplomas.[31] Both diplomas lead to the same position, role and tasks in nursing practice.

Next to RNs, care assistants are an important part of the workforce in nursing homes. Care assistants completed a year specialising in this area following a secondary level education. They are tasked to provide assistance, support and direct personal care to patients in a variety of institutional settings such as hospitals, clinics, nursing homes and aged care facilities.[32] A care assistant is trained to perform supporting tasks which are often delegated by a RN. Since 2019, there are 23 nursing tasks that can be executed by a care assistant in Belgium, such as applying measures to prevent physical injury, infections or pressure ulcers in accordance with the care plan, measurement of parameters belonging to the various biological function systems (the results of these measurements must be reported to the RN in a timely and accurate manner) and administration of medication, excluding narcotic drugs, prepared by the RN.[33]

Allied health professionals and other staff involved in direct care activities

In order to establish a multidisciplinary expertise, an adequate staff mix is required. Therefore, staffing standards also include allied health professionals (e.g. physiotherapists, occupational therapists, speech therapists), reactivation staff (e.g. holders of a qualification in orthopedagogy, psychology, social work, dietician) and animation staff. Furthermore, a coordinating and advisory physician (*coördinerend en raadgevend arts* – CRA in Dutch; *médecin coordinateur et conseiller* – MCC in French) is appointed by the nursing home administrator, who is a general practitioner and has completed a specific training as nursing home physician.[34]

2.2.2 Staffing standards in Belgian residential care facilities for the elderly

'Nursing homes' is used in English as a generic term for residential care facilities for the elderly and will be used as such throughout the report. However, in the current section on Belgian legislation, a distinction is made between homes for the elderly and nursing homes to reflect the difference in 'licensing standards'.

'Homes for the elderly' (*woonzorgcentra* – WZC in Dutch; *maisons de repos pour personnes âgées* – MRPA in French) will be used to refer to residential facilities for older people. 'Nursing homes' will be used to refer to facilities with an additional license, targeting the care for older persons who are strongly care dependent but who do not need permanent hospital

[a] The duration of this programme is three years in Flanders, three and a half years in Wallonia and Brussels.

treatment. These facilities are called *woonzorgcentra met bijkomende erkenning* in Dutch, *maison de repos et de soins* (MRS) in French.[35] The distinction does not exist anymore in the German-speaking Community where all residential care facilities for the elderly are named '*wohn- und pflegezentren für senioren*' [b].

In the next sections we make a distinction between licensing standards (section 2.2.2.1) and financing standards (section 2.2.2.2).

2.2.2.1 Licensing standards for staffing of homes for the elderly and nursing homes

Shift of competence from the federal state to the federated authorities

The 2nd State reform in 1980 transferred the competence for defining licensing standards for residential care facilities for the elderly from the federal level to the communities.[36] In 1993, this competence was transferred from the French Community to the Walloon and Brussels-Capital Regions.

Hence, since that date the competence for licensing standards for homes for the elderly and nursing homes is separate for the Flemish Community,[37] the Walloon Region,[38] the Brussels-Capital Region[39] and the German-speaking Community[40]. Details on legislation as well as on public authorities in charge of staffing standards in each of the entities can be found in Table A1 in Appendix 1.

Especially for homes for the elderly large differences exist in staffing standards between federated authorities

Staffing standards are usually expressed in full-time equivalents (FTE) per number of residents for different professional categories. Table 1 shows the staffing standards for homes for the elderly, Table 2 for nursing homes. In the Brussels-Capital Region, the number of FTE varies according to the dependency category of the residents : O, A, B, C, Cd (score measured via KATZ-scale) (see Box 1 for details).

In homes for the elderly, staffing standards are quite straightforward in the Flemish Community and Walloon Region (2.5 FTE for 15 residents and 1.5 FTE for 10 residents, respectively). In the German-speaking Community, the staffing standards are the same for homes for the elderly and for nursing homes and are similar to the standards of Flanders and Wallonia for nursing homes. In the Brussels-Capital Region, however, the standards are more complex as they depend on the residents' dependency profile, as it is also the case for the financing standards (see section 2.2.2.2).

In nursing homes, staffing standards are related to the professional qualification in all regions and communities. Again, in the Brussels-Capital Region, the staffing standards also depend on the dependency profile of the residents. Only dependency categories B, C and Cd are taken into account as residents in categories O and A are not allowed in nursing homes.

To ensure continuity of care, there is a minimum staffing required 24/7 per residential care facility for the elderly. One FTE nursing or caring staff is required for about 60 places except in the Brussels-Capital Region where 1 FTE of nursing, caring or reactivation staff is required for 10 residents with dependency profile B or C and 40% of residents with these profiles in the facility.

We can conclude from Table 1 and Table 2 that licensing standards for staffing in homes for the elderly differ substantially between federated entities, while standards for nursing homes are similar. The main difference is found in the number of care assistants which is larger in the Brussels-Capital Region for residents with a higher dependency profile (C or Cd). For the same group of residents, also the number of reactivation staff specialised in palliative care is higher in the Brussels-Capital Region.

---

[b] Isabelle Maystadt, Referentin für Senioren, Ministerium der Deutschsprachigen Gemeinschaft, personal communication.

Box 1 – KATZ care profiles as defined in the Royal Decree of 3 July 1996

Care profile O

- physically independent and not diagnosed with dementia

Care profile A

- physically dependent for bathing and/or dressing
- physically independent but mentally dependent because disorientation in time and space

Care profile B

- physically dependent for
  - bathing and dressing, and
  - transferring and/or toilet visits
- mentally dependent, because disorientation in time and space and dependent for bathing and/or dressing

Care profile C

- physically dependent for
  - bathing and dressing, and
  - transferring and toilet visits, and
  - feeding and/or because of incontinence

Care profile Cd

- mentally dependent:
  - disorientation in time and space, or diagnosis of dementia is established or confirmed following a specialised diagnostic assessment of dementia, carried out by a medical specialist, and
- dependent for bathing and dressing, and
- dependent because of incontinence, and
- dependent for transferring and/or toilet visits, and/or feeding

Care profile D

- diagnosis of dementia is established or confirmed following a specialised diagnostic assessment of dementia, with a written report, carried out by a medical specialist in neurology, geriatrics or psychiatry

Source: Royal Decree of 3 July 1996[41]

Table 1 – Staffing standards expressed in full-time equivalents for homes for the elderly, by qualification and by federated entity

	Flemish Community	Walloon Region	Brussels-Capital Region (according to Katz profile)	German-speaking Community
Nursing and caring staff	5 FTE/30 residents (at least 2 nurses)	1.5 FTE (nursing, caring or reactivation staff)/10 places	O: 0.25 FTE nursing staff/30 residents A: 1.20 FTE nursing staff + 0.80 FTE caring staff/30 residents B: 2.10 FTE nursing staff + 4 FTE caring staff + 0.35 reactivation staff/30 residents C: 4.10 FTE nursing staff + 5.06 FTE caring staff + 0.385 reactivation staff /30 residents Cd: 4.10 FTE nursing staff + 6.06 FTE caring staff + 0.385 reactivation staff/30 residents	5 FTE nurse/30 residents At least one nurse on duty 24/7 1 FTE nurse may be replaced, in proportion to a maximum of 1 FTE/30 residents, and provided that the 24/7 nurse on duty is respected, by a reactivation staff member 5 FTE care assistant/30 residents 1 FTE head nurse/30 residents An additional FTE head nurse when the resident count exceeds half of 30 residents 1 FTE physiotherapist and/or occupational therapist and/or speech therapist/30 residents
Animation staff (Staff called '*begeleiders wonen en leven*' in Dutch)	0.5 FTE/30 – 120 places 0.25 FTE/ additional 30 places above 120 units	/	/	/

Table 2 – Staffing standards expressed in full-time equivalents and per 30 residents for nursing homes, by qualification and by federated entity

	Flemish Community	Walloon Region	Brussels-Capital Region	German-speaking Community
Nurses	5 FTE/30 residents At least one nurse on duty 24/7	5 FTE/30 residents At least one nurse on duty 24/7 1 FTE nurse may be replaced, in proportion to a maximum of 1 FTE/30 residents, and provided that the 24/7 nurse on duty is respected, by a reactivation staff member	B, C and Cd: 5 FTE/30 residents	5 FTE/30 residents At least one nurse on duty 24/7 1 FTE nurse may be replaced, in proportion to a maximum of 1 FTE/30 residents, and provided that the 24/7 nurse on duty is respected, by a reactivation staff member
Team manager (in Dutch referred to as '*teamverantwoordelijke')*	1 FTE/30 residents An additional FTE when the resident count exceeds half of 30 residents	1 FTE/30 residents An additional FTE when the resident count exceeds half of 30 residents		1 FTE/30 residents An additional FTE when the resident count exceeds half of 30 residents
Caring staff	5 FTE/30 residents (at least 95% care assistants)	5 FTE/30 residents	B: 5 FTE/30 residents C: 6 FTE/30 residents Cd: 6.5 FTE/30 residents	5 FTE/30 residents
Physiotherapist and/or occupational therapist and/or speech therapist	1 FTE/30 residents	1 FTE/30 residents	B, C and Cd: 1 FTE/30 residents	1 FTE/30 residents
Reactivation staff with a qualification in palliative care for support of residents in terminal phase	0.1 FTE/30 residents	0.1 FTE/30 residents	B: / C: 0.5/30 residents Cd: 0.5/30 residents	
Coordinating and advisory physician	1/residential care centre	1/residential care centre		1/residential care centre
Coordinating head nurse		When the nursing home has more than 75 places, one of the head nurses is designated as the coordinating head nurse		

2.2.2.2 *Financing standards for staffing of homes for the elderly and nursing homes*

Case-mix of homes for the elderly and nursing homes determined lump-sum payment before 6th State reform

Before the 6th State reform, the National Institute for Health and Disability Insurance (RIZIV – INAMI) financed the care of residents of homes for the elderly and nursing homes via a global lump-sum payment on a daily basis. The lump-sum payment was calculated for each residential care facility separately on the basis of the number of licensed places, the case-mix of the facility (based on the level of dependency of the residents) and the numbers (and seniority) of qualified staff.[35] The calculation method was defined in the Ministerial Decree of 6 November 2003 and the lump-sum payment method came into force on 1 January 2004.[42]

Table 3 – Financing standards by qualification, expressed in full-time equivalents and per 30 residents in homes for the elderly[c]

For 30 residents in category O	For 30 residents in category A	For 30 residents in category B	For 30 residents in category C	For 30 residents in category Cd	For 30 residents in category D
0.25 nurses	1.2 nurses	2.1 nurses	4.1 nurses	4.1 nurses	1.2 nurses
/	1.05 care assistants	4 care assistants	5.06 care assistants	6.06 care assistants	4 care assistants[d]
/	/	0.35 reactivation staff	0.385 reactivation staff	0.385 reactivation staff	1.25 reactivation staff[e]
1.4 reactivation staff for short stay places*	1.4 reactivation staff for short stay places	1.4 reactivation staff for short stay places	1.4 reactivation staff for short stay places	1.4 reactivation staff for short stay places	1.4 reactivation staff for short stay places[f]

**Places for a short stay of maximum 60 consecutive days and maximum 90 days per year*

Table 4 – Financing standards by qualification, expressed in full-time equivalents and per 30 residents in nursing homes

For 30 residents in category B	For 30 residents in category C	For 30 residents in category Cd
5 nurses	5 nurses	5 nurses
5.2 care assistants	6.2 care assistants	6.7 care assistants
1 physiotherapist or 1 occupational therapist or 1 speech therapist	1 physiotherapist or 1 occupational therapist or 1 speech therapist	1 physiotherapist or 1 occupational therapist or 1 speech therapist
/	0.5 reactivation staff	0.5 reactivation staff
0.1 reactivation staff qualified in palliative care	0.1 reactivation staff qualified in palliative care	0.1 reactivation staff qualified in palliative care

The lump-sum payments of RIZIV – INAMI covered the following care: assistance with daily activities, care and nursing activities, reactivation, functional rehabilitation and social

---

[c] In Flanders and since July 2021, as a consequence of the sixth Flemish Interprofessional Agreement, financing standards of nursing homes have been transposed to homes for the elderly and short stay places for residents with KATZ care profiles B, C and Cd

[d] In Flanders and since July 2021, as a consequence of the sixth Flemish Interprofessional Agreement: 5,2 care assistants

[e] In Flanders and since July 2021, as a consequence of the sixth Flemish Interprofessional Agreement: 2,6 reactivation staff

[f] In Flanders and since July 2021, as a consequence of the sixth Flemish Interprofessional Agreement: 2,6 reactivation staff

integration or reintegration tasks.[43] Most of the covered costs related to staff were common to both nursing homes and homes for the elderly, except for physiotherapy services, the coordinating and advisory physician and some tasks of the head nurses, which were only covered in nursing homes.[43] Other staff-related costs were also covered by the RIZIV – INAMI lump-sum payment, such as salary harmonization, end-of-career, bonuses for particular professional titles or qualifications, and the supplement for the function of head nurse.

Shift of competence from the federal state to the federated authorities for financing

As a consequence of the 6th State reform the competence for financing care in nursing homes and homes for the elderly was transferred from the federal to the federated authorities. Although the rules of the 6th State reform and the shift of competences were defined in the beginning of 2014,[44] the federal authorities (via RIZIV – INAMI) continued to execute the RIZIV – INAMI regulations for the financing of nursing homes and homes for the elderly. They did so on behalf of the federated entities in order to give them time to organise themselves. This interim period ended on 31 December 2018. Since 1 January 2019, financing of care for the elderly is entirely the responsibility of the federated entities (Communities, Regions or Community Commissions – see Box 2).[45]

Box 2 – Competent authority for financing standards of residential care facilities for the elderly since the 6th State reform

Flemish Community: Agentschap Zorg en Gezondheid

Walloon Region: Agence pour une Vie de Qualité (AViQ)

Brussels-Capital Region: Iriscare

German-speaking Community: Ministerium der Deutschsprachigen Gemeinschaft Belgiens

In Flanders, the formerly federal competence of financing residential care for the elderly became part of the Flemish Social Protection.[46]

In Wallonia, financing of staff for homes for the elderly and nursing homes is still based on federal laws: the Ministerial Decree of 6 November 2003 for the lump sum[47]; the Royal Decree of 17 August 2007 on the harmonisation of scales and job creation[48]; and the Royal Decree of 15 September 2006 on end of career measures.[49]

In Brussels, financing of staff is also still based on the Ministerial Decree of 6 November 2003.

In the German-speaking Community, the decree of 13 December 2018 introduced a system of financing for '*wohn- und pflegezentren für senioren'* that takes into account the profile of the residents according to the BelRAI screener and the number of days they are present. However, the funding is no longer influenced by staffing standards.[50]

2.2.2.3 Recent and future measures related to staffing standards

A number of measures with an impact on staffing standards have recently been taken. For example, in Flanders, the sixth Flemish Interprofessional Agreement has a significant impact on residential care facilities. Since July 2021, Flemish homes for the elderly have been given the same (higher) staffing (and financing) standards as nursing homes; staffing standards paired to residents with dementia have been raised and the additional staffing[g] has increased with 1.5%. In the Brussels-Capital Region, at the time of writing (April 2022), a reform of the licensing and financing standards for homes for the elderly and nursing homes is underway in order to improve the quality of life and well-being of residents and to make establishments evolve from facilities that focus on the 'caring aspect' to facilities that focus on the 'residential character' where the caring aspect is part of a bigger picture. In the German-speaking

g This includes staff that is financed via the basic allowance but in fact is above the minimum staffing standards.

Community, the development of new staffing standards is work in progress with the involvement of stakeholders from the social sector. One of the key points in the discussion is the lack of qualified staff, particularly nursing and caring staff.

2.2.3 *Nursing home landscape*

In 2021, there were 1 555 nursing homes in Belgium: 822 facilities in Flanders; 595 in Wallonia and 138 in Brussels. The nursing home landscape is diverse. With respect to ownership type, a distinction is made between public, private not-for-profit and private for-profit institutions. There were 400, 480 and 675 nursing homes in 2021, respectively. Nursing homes vary to a large extent in terms of scale per site (capacity of residential units) and also the scale of the organisations (varying between stand-alone organisations, multiple nursing homes organisations and large international companies). It has been shown that care needs of residents vary considerably between facilities and accordingly staff-to-resident ratios differ.[51] More precisely, residents' care needs tend to be higher in Flanders compared to Wallonia or Brussels with a higher staff-to-resident ratio for Flanders compared to Wallonia and Brussels.

COVID-19 pandemic

On 11 March 2020, the World Health Organization (WHO) declared COVID-19 – caused by the SARS-CoV-2 virus – to be a pandemic.[52] The COVID-19 pandemic was especially challenging for nursing homes. Elderly are considered highly vulnerable to infectious diseases because of their advanced age and the high prevalence of comorbidities. In addition, the residential setting of nursing homes and frequent close contact with nursing home staff and fellow-residents complicate the containment of the virus and result in a higher risk of outbreak.[53] Organisation of care changed drastically (e.g. isolation measures, cohorting, significant changes in logistic flows, restriction of visits, volunteers and informal carers, …), there were high staff absenteeism rates and the workload increased significantly. Consequentially, nursing homes and their residents were particularly challenged and have suffered extensively during the pandemic.

Research by Aalto et al. (2022) shows how severely nursing homes have suffered worldwide. Moreover, results of this study have established that Belgium has suffered the highest proportion of COVID-19 deaths in nursing homes (50%) per total population COVID-19 deaths, compared to twelve other European countries and the United States since the beginning of the pandemic up to October 2021.[54] Our research took place at the time of the COVID-19 pandemic. More specifically, data were collected during the third (February 15th until June 27th of 2021) and fourth (October 4th until December 27th 2021) waves of the pandemic in Belgium.[55] Consequentially, both recruitment of nursing homes and collection of data within these facilities proceeded very laboriously.

3 METHODS

3.1 Survey development

First, a scanning of the literature was performed on international and Belgian studies about the staffing context of nursing homes, which included peer-reviewed literature, legal documents and policy papers. Second, two survey instruments were developed: a survey targeting nursing home staff and a survey about organisational characteristics. Both survey instruments were constructed according to the following strategy.

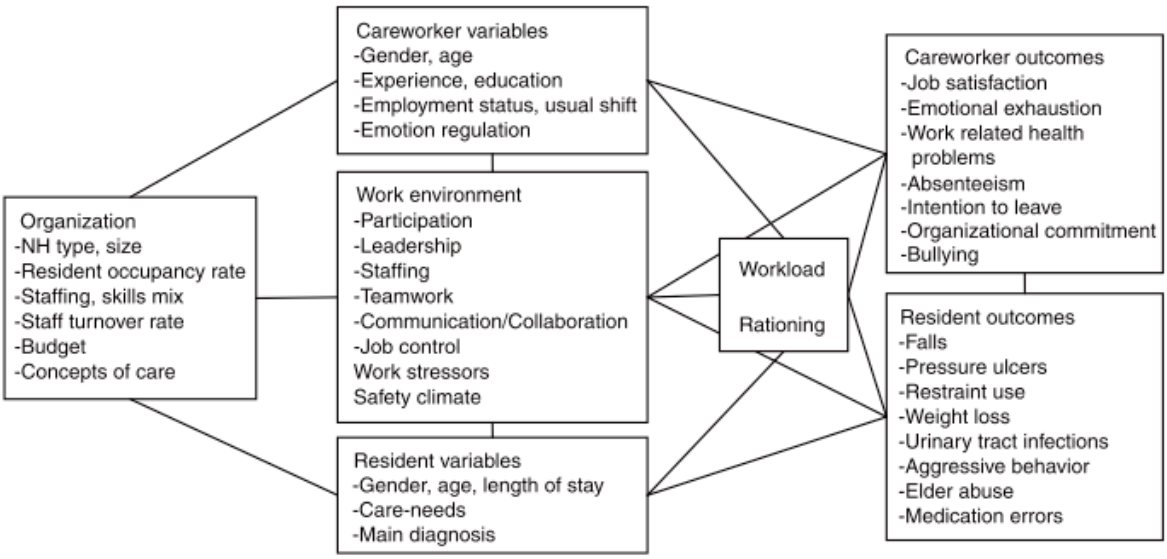
3.1.1 Existing instruments and scanning the literature

3.1.1.1 Development of the survey at staff level

In the early phase of survey development, existing instruments were reviewed. In KCE Report 325, the RN4CAST-survey was used. RN4CAST is a large-scale study conducted in 2009 in 12 European countries.[56] Nurse survey data (e.g. patient-to-nurse ratio last shift; nursing work environment characteristics; job satisfaction; risk of burnout; perceived quality of care, etc.) were collected in 486 participating hospitals. General internal medicine and surgery nursing wards were randomly selected and questionnaires were received by all RNs working in these wards. In a selection of hospitals, data about patient experiences (patient survey) and patient outcomes (risk-adjusted mortality and failure-to-rescue based on administrative databases) were collected. The RN4CAST-study confirmed associations between nurse staffing levels, nursing work environment with patient outcomes, patient experiences and nurse outcomes.[57]

Due to the difference in setting (RN4CAST was a study conducted in a hospital context), other existing instruments were also assessed. SHURP is a multi-year and multi-centre study conducted in Switzerland from 2011 until 2013, and again from 2018 until 2019. The purpose of this study was to develop a comprehensive understanding of the relationships among various nursing home characteristics (e.g. work environment, caregiver outcomes and resident outcomes) in Swiss nursing homes and to fill existing gaps in this area of research. Survey data were retrieved from 160 nursing homes in 2013, and from 118 in 2018. The conceptual framework used in this study is shown in Figure 1.[2]

Figure 1 – Conceptual framework SHURP-study



Source: Schwendimann et al., 2013[2]

In order to develop a staff survey about factors such as work environment, missed care, leadership, perceived quality of care, resident-to-staff ratios, workload, scope of practice (e.g. which profile provides what type of activities), literature was scanned. The aim of this literature scan was to explore and investigate additional instruments to complement the RN4CAST- and SHURP-modules as such. Via forward and backward citation tracking of the publications of these studies the literature was explored. In addition, a scan of literature on key concepts (e.g. missed care) was performed.

Validated scales and questions were derived from both RN4CAST and SHURP as a starting point for **the definition of the measures used in the staff survey of this study**.[2, 56] From the RN4CAST-survey, we included items to evaluate work environment, staff wellbeing, staff-perceived quality of care and work environment, and most recent performed shift and tasks. From the SHURP-survey, items were included to evaluate quality of collaboration and communication, care left undone, and person-centred care.

In order to get an overall view of the work environment, participants were asked a single ordinal question. This item assessed the general perception on the work environment in nursing homes using a 4-point scale (poor, average, good, excellent). **Staff working environment** was then measured more precisely by the Practice Environment Scale of the Nursing Work Index (PES-NWI).[22] This scale includes 32 items, of which 26 were withheld and some were slightly adjusted in wording in order to be applicable in a nursing home setting. Participants indicated the degree to which each of these work environmental features are present in their setting. The included items were allocated to four subscales of the PES-NWI, namely participation in nursing home affairs, foundations for quality care, manager ability, leadership, and support, and staffing and resource adequacy.

Subsequently, we calculated an average percentage of participants who answered that they (strongly) agree with the items of a specific subscale, and this for all of the beforementioned subscales. The PES-NWI naturally has a fifth subscale measuring nurse-physician relations. Due to the difference in practice setting (hospital vs. nursing home) we decided to include another scale to measure the work relations that occur in nursing homes. The Safety Attitude Questionnaire (SAQ) includes a section measuring the quality of collaboration and communication respondents have experienced with various colleagues, using a five-point Likert scale. This section only holds four items, which we adjusted and expanded up to 18 items in order to adequately assess the many collaborations identified in nursing homes.[58]

Staff wellbeing was measured by the risk of burnout, job satisfaction and intention to leave. The **risk of burnout** was measured using the Maslach Burnout Inventory (MBI).[18] The MBI contains 22 items, which are allocated to three subscales: emotional exhaustion, depersonalization, and reduced personal accomplishment. Each of the 22 items was scored by participants on a 7-point Likert scale from 0-6 where 0 was defined as “never” and 6 as “everyday”. A score was calculated per subscale, which can be interpreted using cut-off scores and categories. These categories implicate the risk of burnout and are defined as high, moderate and low. More specifically, cut-off points for low, moderate and high risk were respectively 0–18, 19–26, and >26 for emotional exhaustion (score from 0-54); 0–5, 6–9, >9 for depersonalization (score from 0-30); and >39, 34–39, 0–33 for reduced personal accomplishment (score from 0-48).

Job satisfaction was measured using a single ordinal question assessing general perception on overall job satisfaction. In addition, nine specific job aspects (advancement opportunity, schedule flexibility, independence at work, annual leave, educational opportunity, sick leave, professional status, study leave, wages) were measured using a four-point scale (very dissatisfied, dissatisfied, satisfied, very satisfied).

Intention to leave was assessed by asking respondents if they intended to leave their current job within the next year. A follow-up question was asked to those who indicated their intention to leave regarding their next job interest (same job in another residential care centre; other work/other position in another residential care centre; in the care sector (same function) not in a residential care centre; in the care sector (other function) not in a residential care centre; not in the care sector). In addition, they were asked to indicate the degree of difficulty to find another job in the care sector that would meet their expectations.

Staff-perceived quality of care and work environment were measured through various items assessing the quality of care, housing and life in their ward, the resident safety in their ward and the staff's confidence that management acts to resolve problems. In addition, respondents were asked to indicate their level of recommendation of the nursing home towards a colleague on the one hand, and towards a friend of family member on the other hand using a four-point scale (not at all, probably not, likely to be, very likely).

Care left undone was measured using the Basel Extent of Rationing of Nursing Care (BERNCA), adjusted for a nursing home setting (BERNA-NH).[59, 60] The instrument for BERNCA-NH contains 19 items, to which we added two more statements regarding advanced care planning and end of life care. Respondents indicate the degree of rationing of care by using a six-point scale (not required, never, rarely, sometimes, often, not part of my range of tasks). The items can then be allocated to four subscales: activities of daily living, caring, rehabilitation and monitoring, documentation, and social care.

Person-centred care was measured using the Person-centred Care Assessment Tool (P-CAT).[60] The P-CAT contains 13 items and defines three subscales within the instrument: extent of personalizing care, amount of organisational support, and degree of environmental accessibility. Respondents are asked to indicate the degree to which person-centred care is organised in their nursing home. This assessment is made using a five-point scale measuring their level of agreement on these 13 statements.

In order to assess the circumstances of the most recent performed shift, respondents were asked to specify what shift (early; day, uninterrupted; day, interrupted; late; night shift) they worked, which day of the week, in which ward, the amount of worked hours, the number of residents they were responsible for, the number of colleagues that were working the same shift and what tasks they performed. Nine **tasks** were specified which were possibly performed by RNs during their last shift but **could be completed by lower qualified personnel**: serving and clearing meals, resident transport within the facility, cleaning up resident rooms and materials, ordering supplies and materials, answering the phone and administrative tasks, logistics tasks in general, distribution of incontinence material, making beds, and animation.

In conclusion, the RN4CAST- and SHURP-modules had to be adjusted to the context of Belgian nursing homes (e.g. missed care activities relevant for nursing home context). In addition, we chose to adjust the scope of participants and included head nurses, RNs, care assistants and allied health professionals in our study. Questions related to the content of the performed care tasks were differentiated according to the specific personnel categories. For example, variations in the content of the survey were desirable for qualifications of RNs and allied health professionals.

3.1.1.2 Development of the survey at organisational level

Several organisational characteristics have an impact on staffing and nurse working environment. In order to acquire an adequate insight in these characteristics, literature was scanned to identify relevant characteristics. More precisely, based on previous research it was concluded that resident characteristics, organisational characteristics, the care model and characteristics of staffing can be important.[51]

3.1.2 Interviews and face validity

Secondly, interviews were conducted with experienced national and international experts. Based on the insights developed by the scoping review and individual interviews a first draft of the survey instrument was developed and was validated by experts (e.g. professional organisations; nursing home managers; RNs and care assistants from the field, etc.) in the field (face-validity during a digital expert meeting). Forward/backward translation was performed to draft the instrument in Dutch and French.

3.1.3 Pilot testing

Before finalising the survey, two pilots were performed. One nursing home in Flanders (using the Dutch version of the questionnaire) and one nursing home in the Walloon area (using the

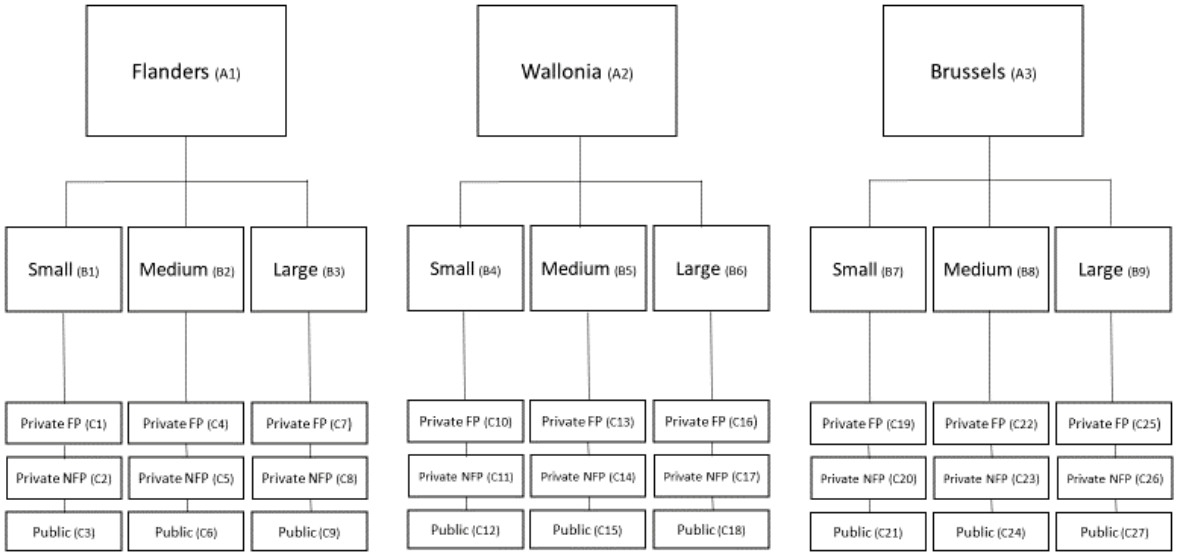
French questionnaire) were selected. During these pilots, both survey instruments were tested. The questionnaire at organisational level was completed by the management of the nursing home while the questionnaire at staff level was completed by RNs and care assistants. After passing the pilot tests, the survey instruments were used in this study to evaluate the current state of staffing in Belgian nursing homes.

3.2 Setting and sample

The setting of this study are all public, private not-for-profit and private for-profit nursing homes in Belgium. At the start of this study (February 2021), the number of nursing homes in Belgium was measured at 1 555. More precisely, there were 822 facilities in Flanders, 595 in Wallonia and 138 in Brussels.

Nursing homes were allocated into subgroups based on inclusion criteria established for each main characteristic: region, size and type of ownership. Based on these characteristics**, a stratified random sample of 250 nursing homes was composed.** First, a distinction was made based on what Belgian region the nursing home facilities are located in, namely Flanders, Wallonia or Brussels. Second, the organisations were stratified based on 'size' into the following categories: small (less than 80 beds), medium (between 80 and 120 beds) and large (more than 120 beds). Next, nursing homes were categorised based on 'type of ownership' as follows: private for-profit, private not-for-profit and public nursing homes. As a result, nursing homes were stratified into nine subgroups based on (1) region: (1a) Flanders, (1b) Wallonia and (1c) Brussels; (2) size: (2a) small, (2b) medium and (2c) large; and (3) ownership: (3a) private for-profit, (3b) private not-for-profit and (3c) public (see Figure 2).

Figure 2 – Sample subgroups



Invitations were sent out by e-mail addressed to each of the sampled nursing homes. The e-mail contained an introductory message in which the study and its objectives were explained, followed by the question to indicate a willingness to participate, if any, in a response to the e-mail. One week later, in case of no response, the nursing homes were contacted by telephone. In case of an interest to participate in the study, a (digital) meeting (via MS Teams) was scheduled. The purpose of this meeting was to further explain the study and data collection procedure in detail, inform them about the data protection procedure and the ethical considerations (such as the right not to participate), and guide them through the recruitment process. In addition, some practical arrangements were made during this meeting, such as appointing a contact person within the nursing home, so that further communication could proceed smoothly. In collaboration with the research team, the contact person was partly responsible for the further dissemination of the call to participate in the study within the nursing home. During this recruitment process, nursing homes were asked

to provide the research team with a list of the number of staff members who are eligible to take part in the study. Inclusion and exclusion criteria were defined in order to guide nursing homes through this process (see Table 5).

Table 5 – Inclusion and exclusion criteria for staff members

Inclusion criteria	Exclusion criteria
Care staff providing direct resident care: • RNs, care assistants and their team leaders • Allied health professionals including e.g. physiotherapists, occupational therapists, and their team leaders	• Care staff not providing direct resident care • Care staff on long-term leave (>1 month) or new to the organisation (<1 month) • Temporary employees and students

To support the nursing home in this phase, the research team provided an information package to each contact person in the nursing homes, consisting of an invitation with an accompanying message introducing the study, the information and consent form, an informative poster, and the questionnaires.

The nursing home facilities were given the choice of completing the questionnaires **on paper or digitally**. In the former case, the number of questionnaires was matched with the number of eligible participants, which was submitted to the research team earlier. The paper questionnaires were then delivered to the nursing homes and later retrieved in sealed envelopes by the local person of contact. In the latter case, access to the online questionnaire was granted by means of a unique URL or QR-code per nursing home. After completion and final confirmation of participation to the study, a four-week period of data collection commenced.

All 250 nursing homes in the random stratified sample were contacted. In order to be able to thoroughly monitor the course of the survey, the selected facilities were divided into two equal groups. This way, two waves of contact were created with 125 facilities to be approached per wave. After contacting all 250 nursing homes, a very low response rate was obtained. As a result of this low response rate at the nursing home level, the research team decided to add another stratified random sample of 117 nursing homes to the contact list. **Overall, 367 nursing homes were contacted** between May 1st and September 24th of 2021.

3.3 Data collection

Data collection for this study was carried out by completing **three questionnaires**. First, a questionnaire addressed to the management of the nursing home was sent out, containing questions measuring the organisational aspects within the facility. Second, two individual questionnaires addressing care staff responsible for direct care of residents, namely (1) RNs, care assistants and their team leaders and (2) allied health professionals including e.g. physiotherapists, occupational therapists, psychologists, etc. and their team leaders were distributed amongst the participating nursing homes. These questionnaires were developed to gain more insight into their current working environment, their well-being and their perception of quality of care.

A **response rate was monitored for each nursing home** during the phase of data collection, the manner in which was determined by the choice of data collection. More precisely, this could be executed in one of two ways: (1) the programming of the digital questionnaire made it possible to monitor the response rate 'live' from a distance; (2) when the questionnaire was completed on paper, the person of contact was asked to communicate these data via e-mail to the research team on a weekly basis. This way, the research team could closely monitor data collection and provide weekly feedback to the nursing homes. Data were collected over a four-week period, whereby a 'reminder' to complete the questionnaire was sent at week two and three. The information contained in the reminder was prepared by the research team and sent to the contact person via e-mail, who then distributed it further within the nursing home.

Upon completion of the four-week period, data collection was terminated and arrangements were made for the collection of the paper questionnaires. The data were processed anonymously and individual carers could not be identified; only the nursing home and the ward could be identified for analytical purposes. **Data were collected between May 3rd and December 24th of 2021**.

Participants of the selected nursing homes entered the study **on a voluntary basis**. They received a survey package including information about the study purposes, data protection, and the right not to participate. All staff providing direct care to residents were informed via the information letter and voluntarily consented to participate in this study. Participants were not identified and the data were analysed only at nursing home level. This study does not fall under the Belgian law of 7 May 2004. The data were processed according to the Belgian law of 30 July 2018 and with Regulation (EU) 2016/679 of 27 April 2016, concerning the protection of natural persons in respect of processing activities and to ensure the free flow of personal data.

3.4 Data analysis

On both staff and organisational level, data analysis was performed with the exclusion of missing values. On organisational level, survey data were subjected to a descriptive analysis on both national and regional level. Statistics were calculated based on respondents with valid data points, missing values were not included leading to variation in the number of respondents per item (numbers are indicated in the result section). Results from these analyses can be found in the results section of this report. On staff level, all measures (e.g. staffing levels; quality of the work environment; staff well-being; missed care) were subjected to descriptive analysis on a national level. Subsequently, data were disaggregated based on region and profession. A second descriptive analysis was carried out in order to identify both regional and interprofessional differences. The professional groups were categorised as follows: (1) RNs; (2) care assistants; (3) allied health professionals, and results for these groups are shown in the results section of this report. Results for the secondary analysis based on region can be found in the appendices. During data collection, a technical problem occurred. Due to this issue, no data were collected for participants (n=80) who evaluated items regarding work environment in nursing homes, measured by the PES-NWI scale via the French version of the online survey.

4 RESULTS

4.1 Study sample

For this study, nursing homes were recruited between May 1st and September 24th of 2021. During this time, we contacted 367 sampled Belgian nursing homes. Finally, **56 nursing homes (or 15.3%) were willing to participate** in this study and provided survey data on staff level. However, within these 56 participating facilities, only 46 nursing homes (or 12.5%) provided survey data on both staff and organisational level. The decision was made to show all of these results in the following sections, implicating a different sample size on facility level within this study for staff (n=56) and organisation (n=46) survey data. All survey data on organisational level (n=46) were collected through an online format. In total, 1 185 surveys were completed on staff level, of which 567 online and 618 on paper.

4.2 Organisational level

4.2.1 Organisational characteristics

In total, 46 nursing homes participated in this study by completing the survey on an organisational level. Of these 46 Belgian nursing homes, 30 facilities are located in Flanders, 13 in Wallonia and 3 in Brussels. More detail on organisational characteristics of the participating nursing homes is shown in Table 6. In addition, nursing homes which provided data on staff level are shown in brackets. Although, in the general sample, size and type of nursing homes seem to be well-balanced (not for all federated entities), the representativeness of the sample remains an issue due to the low participation rate.

Table 6 – Sample description participating nursing homes

	Belgium n=46 (56)	Flanders n=30 (33)	Wallonia n=13 (20)	Brussels n=3 (3)
Type of ownership				
Private for-profit	15 (18)	7 (8)	8 (10)	0
Private not-for-profit	14 (15)	10 (10)	2 (3)	2 (2)
Public	17 (23)	13 (15)	3 (7)	1 (1)
Size				
Small	19 (22)	12 (12)	7 (10)	0
Medium	12 (15)	8 (8)	3 (6)	1 (1)
Large	15 (19)	10 (13)	3 (4)	2 (2)

Number in brackets represent sample size for staff survey data

In Table 7, an overview of the average number and type of residential units (i.e. a place for a resident in a nursing home) in nursing homes is shown. On average, Belgian nursing homes have 33.2 units in homes for the elderly, 62.6 units in nursing homes and 2.2 short-stay units. Notably, Walloon nursing homes in this sample have a higher number of units without additional licensing (46) and a lower number of units with additional licensing (35) in comparison to these national results. Given the low participation rates and the difference across federated entities in types of nursing homes included in the sample, it is difficult to compare results accurately between the federated entities.

Table 7 – Average number of residential units in nursing homes

	Belgium (n=46)	Flanders (n=30)	Wallonia (n=13)	Brussels (n=3)
Residential care units without additional licensing	33.2	27.0	46.0	40.0
Residential care units with additional licensing	62.6	71.7	35.0	91.3
Short-stay units	2.2	2.5	1.8	0.0

Results lower than 0.5% are not shown in this table

4.2.2 Resident care needs and staffing levels

In order to determine the care load of participating nursing homes, KATZ-scores for care profiles B, C, Cd and D can be aggregated and proportioned with the total number of residents. Participating nursing homes were asked to indicate the number of residents and their care profiles, which are shown in Table 8.

Table 8 – Number of residents and percentage of care profiles in the nursing home, median (and interquartile range)

	Belgium (n=46)	Flanders (n=30)	Wallonia (n=13)	Brussels (n=3)**
Number of residents	88.1 (68.5)	92 (67.5)	75 (50.5)	96
KATZ-score B (%)	32.3 (15.2)	35.7 (19)	24 (15.8)	32
KATZ-score C (%)	12.0 (6.3)	12 (5.2)	12.7 (10.8)	9
KATZ-score Cd (%)	31.3 (12.3)	31 (12.5)	29 (18.6)	35
KATZ-score D (%)*	2.0 (5)	2.9 (6.3)	0 (4.4)	3
Care load nursing homes (%)	79.6 (14.9)	83.3 (17.1)	73 (17.2)	90

**for KATZ-score D n=46; 30; 13; 2; **due to the low number of participating nursing homes in Brussels no interquartile ranges are reported*

The median value for nursing homes in this sample provide care to 88.1 residents and have a total care load of 79.6%. Notably, in our sample both median number of residents and their care needs are higher in Brussels (96; 90%) and Flanders (92; 83.3%) compared to Wallonia (75; 73%).

On average, the participating Belgian nursing homes indicate to organise care per 30 residents with a team consisting of 0.9 FTE head nurses, 3.8 FTE RNs, 7.2 FTE care assistants, 1.4 FTE allied health professionals and 0.4 FTE living assistants. Notably, staffing levels in our sample per 30 residents are often higher in Flanders compared to Wallonia. More precisely, this phenomenon is most prominent for RNs (4.1 FTE in Flanders vs. 3.1 FTE in Wallonia) and care assistants (7.7 FTE in Flanders vs. 5.9 FTE in Wallonia). Comparisons across federated entities, however, should be interpreted with caution given the sampling problems (e.g. higher proportion of nursing homes without additional licensing reflected in differences in staffing numbers and residential profiles).

In addition, participating nursing homes were asked how care is organised in their facilities. On average, 52.2% of RNs and 69.9% of care assistants are allocated to a fixed (= the same) ward. Notably, this fixed staffing allocation for RNs and care assistants is opted for more frequently by Flemish nursing homes (63.3%; 86.7%) compared to those in Wallonia (23.1%; 30.8%). On a national level, 73.9% of participating nursing homes have integrated their allied health professionals into the care team at ward level. In addition, 65.2% of nursing home managers indicate that the coordinating and advisory physician is much involved and plays an active role within their facility. Moreover, the involvement of the coordinating and advisory physician is more prominent in Flemish nursing homes (73.3%) compared to facilities in Wallonia (38.5%).

Results of nursing homes located in Brussels were excluded from this discussion due to the low sample size for these survey items.

4.2.3 Impact of COVID-19

Survey data were collected between May 3rd and December 24th of 2021. More specifically, during the third (February 15th until June 27th of 2021) and fourth (October 4th until December 27th) waves of the pandemic in Belgium.[55] On a scale from 0 to 10, participating nursing homes have rated the impact of COVID-19 on their facility in the past year as 7.8. Since the beginning of the pandemic, 84.8% of participating nursing homes were affected by a COVID-19 outbreak. Moreover, the number of participating nursing homes that have experienced a COVID-19 outbreak is higher in Wallonia (92.3%) compared to Flanders (80%). In addition, 82.6% of participating nursing homes indicated to have identified deaths (confirmed and suspected) due to COVID-19 in their facility since the beginning of the pandemic. Notably, this result is higher for the Flemish nursing homes (86.7%) compared to those located in Wallonia (69.2%) in our sample. At the time of the survey, 23.1% of the participating Walloon nursing homes stated to currently have identified COVID-19 infections in their facility. However, no infections were reported by the participating nursing homes located in Flanders or Brussels. In addition, cohort care was not organised in any of the participating nursing homes.

On a national level, 13% of nursing homes (6 in 46 nursing homes) in this study state to have experienced a 16 to 30% staff attrition due to COVID-19. Moreover, 15.4% of Walloon participants (2 in 13 nursing homes) indicate to have experienced this phenomenon to a degree best represented as 6 to 15%, whereas only 3.3% (1 in 30 nursing homes) of Flemish facilities in our sample have stated this to be the case. On a national level, 65.2% of participating nursing homes noticed a decrease when comparing the occupancy rate at the time of the survey with the same month in 2019, as shown in Table 9. More specifically, a higher number of Flemish facilities (16.7%) in our sample would describe the decrease to be strong compared to the ones located in Wallonia (7.7%). On the other hand, more Walloon nursing homes (30.8%) in our sample describe this effect to be moderate compared to Flemish facilities (13.3%).

Table 9 – Change in occupancy rate (residents) in nursing home at the time of the survey and the same month in 2019 (%)

	Belgium (n=46)	Flanders (n=30)	Wallonia (n=13)	Brussels (n=3)
Occupancy rate				
Strong decrease (-15%)	15.2	16.7	7.7	33.3
Moderate decrease (-10%)	19.6	13.3	30.8	33.3
Slight decrease (-5%)	30.4	30.0	30.8	33.3
Remained the same	30.4	33.3	30.8	0.0
Slight increase (+5%)	2.2	3.3	0.0	0.0
Moderate increase (+10%)	0.0	0.0	0.0	0.0
Strong increase (+15%)	2.2	3.3	0.0	0.0

When comparing the workload for staff at the time of the survey with the same month in 2019, 71.7% of participating nursing homes indicate to have experienced an increase (see Table 10). Notably, 65.2% of participants also state to have experienced a decrease in the occupancy rate of their nursing home. Furthermore, the increase of workload for staff is prominently defined as strong by the participating nursing homes located in Wallonia (30.8%), especially compared to those in Flanders (6.7%).

Table 10 – Change in workload in nursing home at the time of the survey and the same month in 2019 (%)

	Belgium (n=46)	Flanders (n=30)	Wallonia (n=13)	Brussels (n=3)
Workload staff				
Strong increase (+15%)	13.0	6.7	30.8	0.0
Moderate increase (+10%)	19.6	23.3	15.4	0.0
Slight increase (+5%)	39.1	40.0	38.5	33.3
Remained the same	19.6	20.0	15.4	33.3
Slight decrease (-5%)	4.3	3.3	0.0	33.3
Moderate decrease (-10%)	0.0	0.0	0.0	0.0
Strong decrease (-15%)	4.3	6.7	0.0	0.0

4.3 Staff level

Overall, 56 Belgian nursing homes participated in this study by providing survey data on staff level. Of these 56 Belgian nursing homes, 33 facilities are located in Flanders, 20 in Wallonia and 3 in Brussels. More detail on organisational characteristics of the participating nursing homes is shown in Table 6.

4.3.1 Staffing characteristics

Participants completing the survey as nursing home staff can all be identified as direct caregivers. In total, **1 062 direct caregivers participated in this study** and were later divided into three categories of nursing home staff: 283 registered nurses, 554 care assistants and 225 allied health professionals. In addition, the number of eligible participants for RNs and care assistants, and allied health professionals can be found in brackets. A total of 837 RNs and care assistants and 225 allied health professionals answered the survey. It **was impossible to calculate an exact response rate** as the denominator was missing for 2 Flemish and 4 Walloon nursing homes. For nursing homes with both a numerator and denominator we obtained a response rate of 40.2% (785/1 954) for RNs and caring staff and an response rate of 62.6% for allied health professionals (213/340).

Table 11 – Sample description nursing home staff

	N*	% of sample
Registered nurses and care assistants	**837 (1 954)**	**78.8**
Registered nurses	**283**	**26.6**
Professional Bachelor's degree**	94	33.2
Diploma level***	177	62.5
Unknown	12	4.2
Care assistants	**554**	**52.2**
Allied health professionals	**225 (340)**	**21.2**
Master	55	24.4
Professional Bachelor's degree	134	59.6
Specialisation year	18	8
Unknown	18	8

** Data on eligible participants could not be included for 2 Flemish and 4 Walloon nursing homes; ** of which 4 RNs completed a master's degree; *** of which 4 RNs completed a specialisation year (A2)*

In total, 837 nursing and caring staff members participated in this study. In this sample, the majority of RNs obtained a non-Bachelor diploma degree (62.5%). Participants were asked to indicate their highest obtained degree. This sample includes 55 allied health professionals

with a master's degree, 134 with a Bachelor's degree and 18 who completed a specialisation year.

4.3.2 Work environment

4.3.2.1 Evaluation of the work environment

Participants were asked to evaluate the work environment in their nursing home in an overall manner, of which Table 12 displays the results.

Table 12 – Overall evaluation of the work environment in nursing homes (%)

	Registered nurses (n=281)	Care assistants (n=548)	Allied health professionals (n=225)
Poor	5.3	6	2.7
Average	25.6	25.4	24
Good	59.4	60.2	63.6
Excellent	9.6	8.4	9.8

Numbers in brackets in the top row indicate the number of professionals in each category who answered the question

Results show that **the majority of caregivers evaluate the work environment in nursing homes as 'good' or 'excellent**'. Only a small percentage rates the work environment as poor. Small differences between groups can be observed. The most positive evaluation overall has been given by the allied health professionals, of which 73.4% indicates their work environment to be good or excellent. This result is followed by 69% for RNs and 68.6% for care assistants.

In order to assess the work environment in nursing homes into more detail, 26 items were scored by caring staff who provide direct care to residents. These 26 items were allocated to one of four subscales (foundations for quality of care, participation in nursing home affairs, staffing and resource adequacy and management ability, leadership and support) and a mean score was calculated for each of them. Table 13 shows the average percentage of participants who (totally) agreed with the allocated items to a certain subscale.

Table 13 – Evaluation work environment in nursing homes measured by PES-NWI, percentage that (totally) agreed with items (%)

	Registered nurses (n=255)	Care assistants (n=514)	Allied health professionals (n=225)
Overall score	69.0	68.6	73.4
Manager ability, leadership and support*	69.4	69.3	64.4
Participation in nursing home affairs	44.7	60.1	56.9
Collegial relations (ward)**	90.0	84.7	92.1
Foundations for quality care	78.4	87.2	77.8
Staffing and resources adequacy***	35.3	34	33.9

*Numbers in brackets in the top row indicate the number of professionals in each category who answered the question; * for manager ability, leadership and support n=255; 512; 225, for collegial relations (ward) n=281; 550; 224, for staffing and resources adequacy*** n=255; 512; 224*

Results show **a (relatively) high score for three dimensions: collegial relationship, foundations for quality care and manager ability, leadership and support**. The large

majority of participants rated collaboration and communication with the colleagues of their ward to be good or excellent. Although this outcome was positive for all three categories of caregivers, results were slightly lower for care assistants (84.7%) compared to the allied health professionals (92.1%) and RNs (90%). The majority of nursing home staff agrees on items contributing to foundations for quality of care. In comparison, results are higher for care assistants (87.2%) than for RNs (78.4%) and allied health professionals (77.8%). Items related to manager ability, leadership and support were agreed to by a smaller proportion of the nursing home staff, which consisted of slightly more RNs (69.4%) and care assistants (69.3%) compared to allied health professionals (64.4%). However, **two subscales have a lower score: participation in nursing home affairs and staffing and resources adequacy**. More precisely, only 44.7% of RNs agreed on items evaluating participation in nursing home affairs. This result is noticeably lower in comparison to care assistants (60.1%) and allied health professionals (56.9%). A relative high proportion of direct caregivers disagree on the adequacy of staffing and resources within their facility. This dimension was given the lowest score in the assessment of work environment in nursing homes, with similar results for the different occupational groups.

4.3.2.2 Collaboration and communication

Collaboration and communication between nursing home staff was evaluated as '**good' or 'excellent' by a minimum average of 74.5% (with the administrator of the nursing home) and maximum of 94.6% (with the RNs)**. Notably, the average results for collaboration and communication with the head of the ward (83.7%), head nurse (82.2%) and head of care (76.3%) were higher compared to the assessment of manager ability, leadership and support (67.7%) in the previous section. Furthermore, results differ when direct caregivers evaluate their collaboration and communication with the animation team and general practitioners. More specifically, 89.4% of the allied health professionals assesses this relationship with the animation team to be good or excellent. However, this result appears to be lower for RNs (83.8%) and care assistants (77.2%) especially. When evaluating this relationship with general practitioners, more RNs (84.5%) tend to describe collaboration and communication to be good or excellent compared to care assistants (78.2%) and the team of allied health professionals (67.8%) in particular. Furthermore, 75.5% of nursing home staff assessed its ability to collaborate and communicate with the coordinating and advisory physician to be good or excellent.

4.3.3 Staffing levels

Participating nursing home staff was asked how many residents they were responsible for and how many colleagues of their qualification were present during their last shift. Based on these results, staffing levels were calculated for RNs and care assistants. Findings are shown in Table 14, where staffing levels can be interpreted using a resident-to-staff ratio.

Table 14 – Resident-to-staff ratio in nursing homes (mean)

Type of shift	Registered nurses and care assistants
Overall (n=782)	11.3
Morning (n=374)	6.9
Day (n=121)	6.9
Evening (n=178)	11.0
Night (n=83)	40.0

Numbers in brackets in the first column indicate the number of professionals who answered the question

Overall, **RNs and care assistants indicate to individually provide care for 11.3 residents on average**. When comparing staffing levels for the morning (6.9) and daytime (6.9) shifts, the resident-to-staff ratio remains stable. However, this ratio increases exponentially when comparing these results to those of the evening (11.0) and night (40.0) shifts. In addition, findings show a higher resident-to-staff ratio for RNs and care assistants working shifts during

the weekend (14) compared to those on a weekday (10.9), resulting in a higher workload for staff during the weekend shifts.

4.3.4 Staff wellbeing

4.3.4.1 Risk of burnout

The risk of burnout was measured using the Maslach Burnout Inventory (MBI). In this assessment, participants were asked to indicate how they relate to the statements presented to them. The MBI contains 22 items, which are allocated to three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment. For each of these dimensions, a risk analysis can be performed of which results can be assigned to one of three categories: low, moderate and high risk. In Table 15, the results for participants with a high risk of burnout are shown.

Table 15 – High risk of burnout, measured by MBI (%)

High risk	Registered nurses (n=283))	Care assistants (n=554)	Allied health professionals (n=225)
Emotional exhaustion	23.3	23.8	12.4
Depersonalization*	19.1	20.4	10.9
Reduced personal accomplishment**	33.6	32.0	22.2

*Numbers in brackets (top row) indicate the number of professionals who answered the treated question for emotional exhaustion: *for depersonalization n=282; 554; 224, **for reduced personal accomplishment n=283; 553; 225; MBI = Maslach Burnout Inventory*

Overall, roughly one out of four RNs and care assistants has a high risk of burnout in the area of emotional exhaustion, depersonalization or reduced personal accomplishment. On all three dimensions, more RNs and care assistants tend to have a high risk of burnout compared to the allied health professionals. Results show that **the highest proportion of direct caregivers with a high risk of burnout is located in the area of reduced personal accomplishment**. The second highest fraction of participants with a high risk of burnout can be found in the dimension of emotional exhaustion, followed by the area of depersonalization. Notably, in our sample a higher risk of burnout was found on all three dimensions for all three categories of direct caregivers working in nursing homes located in Wallonia compared to those located in Flanders.

4.3.4.2 Job satisfaction

Participants were asked to assess their overall job satisfaction, along with 9 specific items. They indicated their level of satisfaction for each of these items, which are shown in Table 16. To aid interpretation, an aggregated score was calculated for the percentage of participants indicating they were ‘very dissatisfied’ or ‘dissatisfied’ with an item.

Table 16 – Evaluation of job satisfaction in nursing homes, percentage (very) dissatisfied (%)

(very) dissatisfied	Registered nurses	Care assistants	Allied health professionals
Overall (n=283; 548; 225)	20.8	17.7	12.4
Schedule flexibility (n=280; 551; 218)	19.6	17.8	11.5
Advancement opportunity (n=275; 528; 215)	37.8	28.2	43.2
Independence at work	14.2	17.3	9.1

(n=281; 543; 222)			
Professional status (n=283; 544; 223)	26.1	19.7	21.9
Wages (n=203; 549; 225)	44.1	43.4	28.4
Educational opportunity (n=278; 550; 222)	28.4	21.3	24.3
Annual leave (n=279; 546; 221)	28.7	25.8	24.5
Sick leave (n=264; 515; 209)	26.9	26.4	17.2
Study leave (n=251; 486; 202)	25.1	21.8	27.2

Numbers in brackets (first column) indicate the number of professionals by category who answered the question

Overall, **20.8% of RNs and 17.7% of care assistants indicate to be (very) dissatisfied with their current job in the nursing home**, which is a higher proportion in comparison to the allied health professionals (12.4%). More specifically, RNs and care assistants appear to be least satisfied with their wages (44.1%; 43.4%) and opportunity to advance (37.8%; 28.2%). The allied health professionals seem to agree on these items, but indicate to be less satisfied with their advancement opportunity (43.2%) compared to their wages (28.4%). All direct caregivers agree that they are most satisfied with their independence at work.

4.3.4.3 Intention to leave

Participants were asked to indicate their intention to leave their current job within the next year. **Among the RNs, 24.7% indicate that they have the intention to leave their current job**, a tendency that is similar to the one among care assistants (24.5%). In comparison, slightly less allied health professionals (19.6%) appear to have the intention to leave their current position. Roughly one out of three direct caregivers intending to leave their current job, have specified not to be interested in another job in the care sector (see Table 17). When asked how easy it would be to find a new job within the care sector that meets the expectations, 57% of participants answered it would be moderately to very difficult.

Table 17 – Intending to leave current job, next job interest (%)

	Registered nurses (n=196)	**Care assistants** (n=169)	**Allied health professionals** (n=58)
Same job, in another nursing home	23.0	29.0	32.8
Other work/other position, in another nursing home	5.7	8.9	6.9
In the care sector (same function), not in a nursing home	29.9	17.2	17.2
In the care sector (other function), not in a nursing home	6.9	10.7	15.5
Not in the care sector	34.5	34.3	27.6

Numbers in brackets (top row) indicate the number of professionals by category who answered the question

4.3.5 Staff-perceived quality of the work environment

In order to assess the quality of work environment as perceived by nursing home staff, participants were asked to indicate the likelihood of recommendation towards colleagues on the one hand and family or friends on the other. To aid interpretation, an aggregated score

was calculated for the percentage of direct caregivers indicating to be 'very likely' or 'likely' to recommend their nursing home in given contexts**. On average, 79% of direct caregivers would be (very) likely to recommend their nursing home to colleagues as a good place to work**. In comparison, the allied health professionals (83.7%) appear to be most likely to recommend the work environment in their nursing home, followed by care assistants (78.6%) and finally RNs (74.8%). In addition, on average 77.6% of the participants would be (very) likely to recommend their nursing home to a family member or friend as a good place to stay. This likelihood was slightly higher amongst RNs (79.1%) and allied health professionals (79%) compared to care assistants (74.7%).

4.3.6 Staff-perceived quality of care

The quality of provided care as perceived by nursing home staff was measured through several questions assessing the quality of care, housing and life in their ward, the staff's confidence that management acts to resolve problems and the resident safety in their ward. These items were assessed using a 4-point scale (with the exception of resident safety, for which a 5-point scale was used). To aid interpretation of this evaluation, aggregated scores were calculated for each of these items and are shown in Table 18.

Table 18 – Staff-perceived quality of care in nursing home (%)

	Registered nurses	Care assistants	Allied health professionals
Quality of care Percentage good – excellent (n=282; 552; 223)	76.6	74.1	77.6
Quality of life (and housing) Percentage good – excellent (n=283; 552; 223)	70.3	71.7	71.3
Confidence in management to solve reported problems Percentage (very) certain (n=282; 546; 224)	52.5	57.5	54.9
Resident safety (n=283; 550; 224)			
Percentage (very) poor	5.7	4.0	3.6
Percentage average	34.9	37.3	33.5
Percentage (very) good	59.4	58.7	62.9

Numbers in brackets (first column) indicate the number of professionals by category who answered the question

The majority of direct caregivers evaluate quality of care, and quality of life and housing in their nursing home to be good or excellent. Moreover, the majority of nursing home staff indicate that quality of care (79%), and quality of life and housing (80.5%) had remained the same or improved compared to the past year.
However, **both resident safety and the confidence in management to solve reported problems were given a rather mediocre score by nursing home staff**. In comparison, this lack of confidence is most visible in the score given by RNs (52.5%), followed by the allied health professionals (54.9%) and finally care assistants (57.5%).

4.3.7 Care left undone

In order to measure care left undone in Belgian nursing homes, the BERNCA-NH was used. Participants were asked to indicate the frequency to which care was left undone on a 5-point scale ('not part of my range of tasks' was excluded for this analysis). Care left undone was defined as 'interventions or treatments which are necessary and usual and which, due to lack

of time or excessive workload, could not be applied or applied incorrectly' and specified into 21 items. These items were then allocated to four subscales: activities of daily living; caring, rehabilitation and monitoring; documentation; and social care. An aggregated score was calculated for each of these subscales to aid interpretation, which are shown in Table 19.

Table 19 – Rationing of care, measured by BERNCA-NH, % sometimes/often

Sometimes / often	Registered nurses	Care assistants	Allied health professionals
Activities of daily living (n=278; 546; 223)	24.1	25.9	27.0
Caring, rehabilitation and monitoring (n=278; 549; 223)	39.9	35.2	34.5
Documentation (n=276; 544; 222)	43.9	35.2	41.7
Social care (n=277; 539; 220)	35.3	32.9	45.6

Numbers in brackets (first column) indicate the number of professionals by category who answered the question

Results show that **tasks in relation to documentation are most frequently left undone**, followed by social care, and caring, rehabilitation and monitoring. Leaving tasks regarding documentation undone is a phenomenon most common amongst RNs (43.9%) and the allied health professionals (41.7%). Tasks with regard to social care are more often left undone by allied health professionals (45.6%) in comparison to RNs (35.3%) and care assistants (32.9%). Caring tasks regarding rehabilitation and monitoring are most often left undone by RNs (39.9%). Finally, **roughly one in four direct caregivers indicate to sometimes or often leave tasks with regard to activities of daily living undone** as a result of lack of time or excessive workload.

4.3.8 Person-centred care

An assessment was made to determine the degree to which provided care was organised around the principles of person-centred care in participating nursing homes. Person-centred care was defined as follows: 'residents are valued and recognised as individuals and an attempt is made to take the residents' point of view, recognise their life experience and involve their social environment in the provision of care'. Direct caregivers indicated their level of agreement to 13 statements, which were then allocated to one of three dimensions: extent of personalizing care, amount of organisational support, and degree of environmental accessibility. Table 20 shows aggregated scores for each of these dimensions and the percentage to which participants 'agreed' or 'totally agreed' to given items.

Table 20 – Organised person-centred care, measured by P-CAT, % (totally) agree

(totally) agree	Registered nurses	Care assistants	Allied health professionals
Extent of personalizing care (n=282; 549; 223)	49.8	53.0	53.8
Amount of organisational support (n=280; 547; 223)	36.2	34.6	22.5
Degree of environmental accessibility (n=280; 549; 224)	41.7	39.0	38.7

Numbers in brackets (first column) indicate the number of professionals by category who answered the question

Overall, items related to the extent of personalizing care were most often agreed upon by participants. Compared to RNs (49.8%), slightly more allied health professionals (53.8%) and care assistants (53%) (totally) agreed to statements regarding this dimension, indicating these elements were present in their nursing home. In addition, 41.7% of RNs (totally) agreed upon items with regard to environmental accessibility, with similar results for care assistants (39%) and allied health professionals (38.7%). Finally, **only 22.5% of allied health professionals were in (total) agreement with items measuring the amount of organisational support** present in their nursing home. Notably, this result is rather low in comparison to the outcome for RNs (36.2%) and care assistants (34.6%).

4.3.9 Tasks below nurses' skill level

In order to assess the degree to which participating RNs perform tasks below their skill level, nine tasks were specified which were possibly performed by RNs during their last shift but could be completed by lower qualified personnel. They were asked how frequently they had performed these specific tasks during their last shift: serving and clearing meals, resident transport within the facility, cleaning up resident rooms and materials, ordering supplies and materials, answering the phone and administrative tasks, logistics tasks in general, distribution of incontinence material, making beds, and living support (animation). Table 21 displays how frequently RNs have indicated to perform each of these tasks.

Table 21 – Tasks below nurses' skill level performed by RNs during most recent shift, % sometimes/often

Sometimes / often	Registered nurses
Answering the phone, administrative tasks (n=280)	98.2
Cleaning up resident rooms and materials (n=280)	89.3
Making beds (n=280)	85.0
General logistic tasks (n=280)	83.8
Serving and clearing meals (n=281)	81.1
Ordering supplies and materials (n=278)	76.1
Resident transport within nursing home (n=280)	69.2
Distribution of incontinence material (n=280)	61.8
Living support (n=277)	52.4

Numbers in brackets (left column) indicate the number of professionals who answered the question

Findings show that **98.2% of participating RNs have sometimes or often executed clerical duties such as answering the phone and other administrative tasks** during their most recent shift. Following this result, tasks that were sometimes or often performed by the most RNs during their last shift – but could be completed by lower qualified personnel – are cleaning up resident rooms and materials (89.3%), making beds (85%), general logistic tasks (83.8%), and serving and clearing meals (81.1%). RNs indicate to be least involved with tasks typically performed by the animation staff (52.4%).

5 DISCUSSION AND CONCLUSION

5.1 Limitations of the study

Low participation rate of nursing homes limit the generalizability of study results

Before discussing the study findings, we would like to address the limitations of the study. The most prominent limitation of this study is the low sample size. During a four-month period, we sampled and contacted 367 Belgian nursing homes. A first invitation was sent out via e-mail, in which we introduced the study, explained its objectives and asked for the nursing homes' interest to participate. In case of a non-response, we contacted the nursing homes by telephone. This process was repeated until a response was given by the facility. Despite our efforts to boost the number of participating nursing homes, the response rate remained low. Only 15.3% (n=56) of all contacted nursing homes were willing to participate in this study. In addition, we contacted the participating nursing home administrators and requested them to complete the survey on organisational level. Only 46 nursing homes provided survey data on both organisational (n=46) and staff (n=56) level. Given this low participation rate the overall generalizability of study results is limited and results should be interpreted with caution. Moreover, as nursing home characteristics of the participating nursing homes located in Flanders and Wallonia seem to differ all comparisons across these federated entities are prone to bias and should be done with caution. The number of participating nursing homes from Brussels is even too low to be included in the results.

COVID-19 and survey fatigue limited participation to the study

In Belgium, the third and fourth wave of COVID-19 were defined during the time period of February 15th until June 27th, and October 4th until December 27th of 2021.[55] The recruitment phase of this research took place from May 1st until September 24th and data were collected between May 3rd and December 24th of 2021. We have established two main barriers to participate: (1) due to the COVID-19 pandemic, there was an increase in absence amongst and workload for the caring staff, and nursing homes concluded it was not possible to participate in any study for the time being; (2) nursing homes stated they had been participating in too many studies and believed this has led to 'survey fatigue' amongst their staff. The development of the phenomenon 'survey fatigue' is hypothesised to be the result of an increase of conducting research through surveys – in this case caused by the COVID-19 pandemic – and is characterised by reduced response rates.[61]

Low response rates at the caregiver level and problems with monitoring them in some nursing homes

Throughout the study, we noticed that the response rate on respondent level was low as well. Although we assigned a local person of contact in every nursing home, with whom we communicated on a weekly basis, who was provided material to promote the study (e.g. an informative poster with a QR-code linked to the survey), was monitoring the response rate within the facility and sent out reminders to the staff to complete the survey, the response rate within nursing homes remained low. We concluded that, even within the nursing homes willing to participate, there was a 'survey fatigue' present amongst their staff as they were feeling overwhelmed by the number of survey requests, which resulted in a high number of non-responses.[61] Moreover, in some nursing homes no valid data about the denominator were submitted making the monitoring of response rates at the caregiver level impossible.

Overall results have to be interpreted with caution – studying variation across nursing homes was not possible

Due to the low sample size and low response rate on both facility and respondent level, and the high variation between nursing homes in this aspect, we were not able to conduct analyses on a nursing home level. On survey level, data analysis was performed with the exclusion of missing values, which might create a nonresponse bias. According to Maitland et al. (2017), nonresponse bias might occur when the response rate to a question is less than 100 percent, meaning that those who did not respond may have answered differently than participants who did.[62] Specifically, we need to be mindful of this phenomenon when

interpreting the results (shown in Table 13) evaluating work environment in nursing homes, measured by the PES-NWI scale. As a result of a technical disturbance, there were no data collected for this question from participants completing the French survey online.

5.2 Discussion and conclusion of study findings

In this section we discuss the main results of the current study. Although our study has several limitations, it provided some important insights.

5.2.1 Organisational level

Participating nursing home staff slightly below RN staffing standards but above standards for care assistants and allied health professionals

In Belgium, nursing home staffing standards determine that there should be 5 FTE RNs, 5 FTE care assistants, 1 FTE allied health professional and 0.1 FTE reactivation staff (in Flanders and Wallonia, 0.5 FTE in Brussels) per 30 residents. In this study, participating nursing homes have indicated to organise care on average with a team consisting of 0.9 FTE head nurses, 3.8 FTE RNs, 7.2 FTE care assistants, 1.4 FTE allied health professionals and 0.4 FTE reactivation staff per 30 residents. In comparison to the staffing standards, nursing homes in our sample indicated to provide care with slightly less RNs (-0.3 FTE) and more care assistants (+2.2 FTE), allied health professionals (+0.4 FTE), and reactivation staff (+0.3 FTE, Flanders and Wallonia). In addition, recorded staffing levels per 30 residents were often higher in Flanders compared to Wallonia. The most prominent example can be found for RNs (Flanders: 4.1 FTE; Wallonia: 3.1 FTE) and care assistants (Flanders: 7.7 FTE; Wallonia: 5.9 FTE).

Although occupancy rates were lower than usual, workload was perceived to be higher

At the time of the survey, 65.2% of nursing homes in our sample stated to have established a decrease in the occupancy rate of their nursing home. However, 71.7% of participating nursing homes also indicated to have experienced an increase in the workload for staff compared to the same month in 2019. This can be explained by the additional infection control measures nursing home staff had to comply with on a daily basis (e.g. the use of personal protective equipment and increased cleaning procedures) due to the COVID-19 pandemic. Moreover, these measures were often creating barriers for staff to perform their working roles and accompanied tasks, resulting in a higher workload.[63] When asked, participating nursing homes rated the impact of COVID-19 on their facility in the past year as 7.8 out of 10. Since the beginning of the pandemic, 84.8% of Belgian nursing homes in our sample stated to have been affected by a COVID-19 outbreak. In comparison, the number of nursing homes that have experienced a COVID-19 outbreak is higher in Wallonia (92.3%) than in Flanders (80%). In addition, 82.6% of participating nursing homes indicated to have identified deaths (confirmed and suspected) in their facility due to COVID-19 since the beginning of the pandemic. In comparison, this result is higher for the Flemish nursing homes (86.7%) than those located in Wallonia (69.2%).

5.2.2 Staff level

This study is one of the first to study staff wellbeing and their perceived work environment in Belgian nursing homes.

Work environment scored high in our sample except for participation in nursing home affairs and staffing & resource adequacy

According to Lake et al. (2002), certain organisational characteristics can be associated with a positive work environment, such as decentralization of decision making to the level of the nursing unit; strong, effective and visible nursing leadership; recognition of professional nurse autonomy, accountability and responsibility for quality patient care; and adequate staffing and flexible scheduling.[22] Results from our study show that the majority of direct care givers (70.3%) evaluate the overall work environment in their nursing home as ‘good’ or ‘excellent’. In line with previous research in the Belgian hospital sector[1, 64] and international research[3],

favourable results were found for collegial relationships and foundations for quality of care. More specifically, 88.9% of participants (totally) agreed with items evaluating collegial relationships, whereas 81.1% of direct caregivers were in (total) agreement of items assessing foundations for quality care in their nursing homes. However, a lower score was given by the nursing home staff in our sample when assessing the participation in nursing home affairs (53.9%). More particularly, only 44.7% of RNs agreed on items evaluating this dimension. In this assessment of work environment, the lowest score was given to the adequacy of staffing and resources. No less than 65.6% of participants disagree on the adequacy of staffing and resources within their facility. When comparing the results of this study with the findings of previous research,[22] some differences become apparent. For instance, the majority of our sample evaluated their work environment as good or excellent. However, the assessment of participation in nursing home affairs, and staffing and resources adequacy resulted in a relatively low score. On the other hand, there are some similarities as well. Both foundations for quality care, and independence at work (86.5%) received a rather positive evaluation, which were identified by Lake et al. (2002) as organisational characteristics associated with positive work environments.[22] In addition, the allied health professionals (83.7%) are most likely to recommend the work environment in their nursing home, followed by care assistants (78.6%) and finally RNs (74.8%).

Overall high scores on collaboration & communication

The nursing home staff in our study sample indicated to have good or excellent collaboration and communication relationships by an average minimum of 74.5% (with the administrator of the nursing home) and maximum of 94.6% (with the RNs). In the Netherlands, a qualitative study was performed in order to gain insight into the work experience of nursing home staff during the COVID-19 pandemic.[65] Results showed that teamwork within wards had improved, while collaboration between different teams had declined. In addition, participants mentioned a lack of support from leaders and insufficient aftercare. In our study, 88.9% of participants evaluated collaboration and communication with the colleagues of their ward as good or excellent, which is similar to the findings of the Dutch study.

Although the average results for collaboration and communication with the head of the ward (83.7%), head nurse (82.2%) and head of care (76.3%) are relatively high, participants were less positive when assessing manager ability, leadership and support (67.7%). This could indicate a good collaborative and communicative relationship between nursing home staff and their leaders overall, with the exception that our participants possibly experienced a lack of manager ability, leadership and support at the time of the survey. Notably, the experienced lack of support from team leaders could be strengthened by conditions caused by the COVID-19 pandemic.

Although a substantial proportion of caregivers in our sample are at high risk of burnout, the results are less alarming compared to similar studies conducted in other settings

Previous research has shown a significant difference in work experience depending on the presence or absence of COVID-19 infections in nursing home wards.[65] Their findings show that the presence of COVID-19 infections result in a very stressful work environment. However, when there were no COVID-19 infections reported, the daily work was described as peaceful. Nursing home staff indicated to have experienced more autonomy and were able to spend more time with their residents, and found both aspects enjoyable.

When assessing the risk of burnout in our study sample, a substantial proportion of direct caregivers (22%) were analysed as having a high risk of burnout in the area of emotional exhaustion, depersonalization or reduced personal accomplishment. However, when comparing these results with studies of the Belgian hospital sector the percentage of staff at high risk for burnout is lower for the three dimensions.[1, 64] In 2021, White et al. (2021) found that a substantial proportion of the respondents in their research had experienced burnout as a result of physical, mental and emotional exhaustion from working during the pandemic.[66] Results from a national survey in June 2021 on the wellbeing of carers, caregivers and informal carers in Belgium showed that roughly one out of two respondents experienced the following symptoms – possibly as a result of chronic stress – in a strong or very strong manner: feeling exhausted and being under pressure of stress.[67] When comparing our results

on burnout to both findings from the beforementioned studies, we establish an underrepresentation of this phenomenon in the results from our current study. In addition, an important finding in our study is that more RNs and care assistants were assessed as having a high risk of burnout compared to the allied health professionals, and this on all three dimensions. In addition, the dimension of reduced personal accomplishment had the highest proportion of nursing home staff with a high risk of burnout (29.3%). Another important finding within our sample is that all categories of direct caregivers working in Walloon nursing homes have a higher risk of burnout on all three dimensions, compared to those working in Flemish facilities. When comparing these results with studies of the Belgian hospital sector[1, 64], we establish a similar phenomenon.[1, 64]

Job dissatisfaction present in about one in five nurses/care assistants and one in eight allied health professionals

A significant group of direct caregivers have indicated to be (very) dissatisfied with their current job, especially RNs (20.8%) and care assistants (17.7%). In comparison, only 12.4% of participating allied health professionals agreed with that statement. However, when comparing these results with studies conducted in the Belgian hospital sector (Van den Heede et al., 2019: 27%; Van den Heede et al., 2022: 39%) RNs appear to be more satisfied with their current job in the participating nursing homes.[1, 64] Mostly, RNs and care assistants were dissatisfied with their wages (44.1%; 43.4%), opportunity to advance (37.8%; 28.2%) and annual leave (28.7%; 25.8%). These results are similar to those found in the report on safe nurse staffing levels in acute hospitals in 2019.[1] In the study conducted in 2019, RNs had indicated to be least satisfied with their wages (55.6%), annual leave (40.7%) and opportunity to advance (34.2%).

Intention to leave the job is considerable

In 2013, the Swiss Nursing Homes Human Resources Project (SHURP) was conducted, which has been repeated in 2018.[2] Results from these studies show an increase in direct caregivers with the intention to leave their current job. In 2013, this statement was made by 12% of their participants, and by 16.2% in 2018. In addition, 12.9% of their participants had indicated to not be interested in another job in the long-term care sector in 2013, and 19.9% in 2018. In 2021, our study results show that 22.9% of direct caregivers have the intention to leave their current job. Furthermore, 32.1% of direct caregivers intending to leave their current job have specified to not be interested in another job in the care sector. Our findings show a further increase in direct caregivers' intention to leave their current job and their disinterest to continue working in the care sector when looking for another job. When comparing this result in the nursing home setting (24.7%) to the hospital setting (Van den Heede et al., 2019: 32%; Van den Heede et al., 2022: 44%) in Belgium, there are less RNs intending to leave their current work facility.[1, 64] However, participating RNs with the intention of leaving their current job, are more likely to leave the care sector when working on an intensive care unit (26%) compared to those working in acute hospitals (10%) or in nursing homes (10.6%).[1, 64]

Perceived quality of care is high

Another important finding is that a large majority of direct caregivers perceive the quality of care (76.1%; RNs: 76.6%), and quality of life and housing (71.1%; RNs: 70.3%) on their ward to be good or excellent. In comparison to the studies conducted in Belgian hospitals, less RNs (65%) had assessed the quality of care on their ward as such.[1, 64] Moreover, when asked about the evolution of quality of care in their facility since the COVID-19 pandemic, the majority of RNs working in hospitals on ICU (70%) reported a deterioration.[64] In comparison, a majority of RNs working in nursing homes found that the quality of care (81.1%), and quality of life and housing (82.2%) had remained the same or improved over the past year. Over three-quarter (77.6%) of participants in our study sample would be (very) likely to recommend their nursing home to a family member or friend as a good place to stay.

Problems with resident safety are nevertheless reported

Although nursing home staff positively appraised the quality of life and care on their ward, resident safety (60.3%; RNs 59.4%) did not receive as good as an evaluation. However, RNs in a hospital setting were less likely to evaluate patient safety as (very) good (Van den Heede

et al., 2019: 46%; Van den Heede et al., 2022: 56%).[1, 64] In addition, only a bit more than one out of two (52.5% of RNs; 57.5% of care assistants and 54.9% of allied health professionals) direct caregivers have indicated to have confidence in their nursing home management to solve problems reported by its staff. However, when comparing these results to the hospital setting, we establish that RNs in hospitals (Van den Heede et al., 2019: 17%; Van den Heede et al., 2022: 10%) have significantly less confidence in their management to solve reported problems compared to those working in nursing homes.[1, 64]

Rationing in care: documentation of care is more frequently left undone than caring tasks

Rutten et al. (2021) describes an overall reduction in the administrative tasks of direct caregivers working on wards with no COVID-19 infections.[65] Our findings regarding rationing of care show that tasks which are most frequently left undone as a result of lack of time or excessive workload are those in relation to documentation (40.3%). Following this result are tasks with regard to social care (37.9%), and caring, rehabilitation and monitoring (36.5%). Tasks regarding activities of daily living are least left undone by direct caregivers in our study sample (25.7%). When comparing these results to those from the most recent SHURP-study in 2018, we can conclude that the dimensions of care tasks are prioritized in the same manner (documentation: 42%; social care: 34%; caring, rehabilitation and monitoring: 24.6%; activities of daily living: 14.2%).[4] However, we can also conclude that there is a higher degree of rationing of care amongst the Belgian nursing homes in our sample compared to the findings of the Swiss study.

Problems with organisational support for personalization of care are reported

Participating nursing home staff indicated the degree to which elements were present that enabled them to value and recognise residents as individuals and make an attempt to take the residents' point of view, recognise their life experience and involve their social environment in the provision of care. Mostly, participants (totally) agreed on items related to the extent of personalizing care (52.2%). In addition, 39.8% of direct caregivers were in (total) agreement on items regarding the environmental accessibility of their nursing home. Per last, 31.1% of participants (totally) agreed with statements measuring the amount of organisational support to provide person-centred care in their work environment. Notably, this result was rather low for the allied health professionals (22.5%) compared to RNs (36.2%) and care assistants (34.6%). When comparing our findings to those derived from the SHURP-study in 2018, we establish a higher amount of organisational support to provide person-centred care (21.5%; 31.1%), yet a lower extent of personalizing care in our participating nursing homes (68%; 52.2%).[4] The most prominent differences can be found in how participants assessed the importance of the quality of the relationship between the staff and the residents over the tasks that need to be performed (73.6%; 45.3%), and the opportunity that residents are given to participate in individualised activities of daily living (84.2%; 62.6%).[4]

RNs frequently perform tasks below skill level with clerical and administrative tasks performed by nearly all nurses during their last shift

RNs sometimes or often perform tasks below their skill level. During their last shift, 98.2% of participating RNs have sometimes or often executed clerical duties such as answering the phone and other administrative tasks. A very similar result (97.9%) can be found when comparing this result to the report on safe nurse staffing levels in acute hospitals in 2019.[1]

REFERENCES

1. Van den Heede K, Bruyneel K, Beeckmans D, Boon N, Bouckaert N, Cornelis J, et al. Safe nurse staffing levels in acute hospitals. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2019 01/2020. KCE Reports 325 Available from: https://kce.fgov.be/sites/default/files/atoms/files/KCE_325_Safe_nurse_staffing_levels_Report.pdf
2. Schwendimann R, Zuniga F, Ausserhofer D, Schubert M, Engberg S, de Geest S. Swiss Nursing Homes Human Resources Project (SHURP): protocol of an observational study. Journal of advanced nursing. 2013;70(4):915-26.
3. Zúñiga F, Ausserhofer D, Simon M, Serdaly C, Schwendimann R. Swiss Nursing Homes Human Resources Project 2015. Bâle: Universität Basel; Novembre 2015.
4. Zúñiga F, Favez L, Baumann S, Kindlimann A, Oeri A, Benkert B, et al. Swiss Nursing Homes Human Resources Project 2018. Bâle: Universität Basel; Avril 2021.
5. Song Y, Hoben M, Norton P, Estabrooks CA. Association of Work Environment With Missed and Rushed Care Tasks Among Care Aides in Nursing Homes. JAMA network open. 2020;3(1):e1920092.
6. White EM, Aiken LH, McHugh MD. Registered Nurse Burnout, Job Dissatisfaction, and Missed Care in Nursing Homes. Journal of the American Geriatrics Society. 2019;67(10):2065-71.
7. Kim H, Kovner C, Harrington C, Greene W, Mezey M. A panel data analysis of the relationships of nursing home staffing levels and standards to regulatory deficiencies. The journals of gerontology. Series B, Psychological sciences and social sciences. 2009;64(2):269-78.
8. Hamers J, Backhaus R, Beerens H, van Rossum E, Verbeek H. Meer is niet per se beter. De relatie tussen personele inzet en kwaliteit van zorg in verpleeghuizen. Maastricht University; maart 2016.
9. Backhaus R, Beerens HC, van Rossum E, Verbeek H, Hamers JPH. Editorial: Rethinking the Staff-Quality Relationship in Nursing Homes. The journal of nutrition, health & aging. 2018;22(6):634-8.
10. Backhaus R, van Rossum E, Verbeek H, Halfens RJ, Tan FE, Capezuti E, et al. Relationship between the presence of baccalaureate-educated RNs and quality of care: a cross-sectional study in Dutch long-term care facilities. BMC health services research. 2017;17(1):53.
11. Cunningham J, O'Toole T, White M, Wells JSG. Conceptualizing skill mix in nursing and health care: An analysis. Journal of nursing management. 2019;27(2):256-63.
12. Zúñiga F, Ausserhofer D, Simon M, Schwendimann R. System factors related to care workers' perception of quality of care. Results from the cross-sectional Swiss Nursing Homes Human Resources Project (SHURP). University of Basel; 2015.
13. Aiken LH, Sloane DM, Cimiotti JP, Clarke SP, Flynn L, Seago JA, et al. Implications of the California nurse staffing mandate for other states. Health services research. 2010;45(4):904-21.
14. Aiken LH, Sermeus W, Van den Heede K, Sloane DM, Busse R, McKee M, et al. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. BMJ (Clinical research ed.). 2012;344:e1717.
15. Plaku-Alakbarova B, Punnett L, Gore RJ, Procare Research T. Nursing Home Employee and Resident Satisfaction and Resident Care Outcomes. Safety and health at work. 2018;9(4):408-15.
16. Decker FH, Harris-Kojetin LD, Bercovitz A. Intrinsic job satisfaction, overall satisfaction, and intention to leave the job among nursing assistants in nursing homes. The Gerontologist. 2009;49(5):596-610.

17. Maslach C, Schaufeli W, Leiter M. Job burnout. Annu. Rev. Psychol. 2001;52:397-422.
18. Maslach C, Jackson SE. The measurement of experienced burnout. Journal of Occupational Behaviour. 1981;2:99-113.
19. Montgomery A, Panagopoulou E, Esmail A, Richards T, Maslach C. Burnout in healthcare: the case for organisational change. BMJ (Clinical research ed.). 2019;366:l4774.
20. Leiter MP, Maslach C. Areas of Worklife: A Structured Approach to Organizational Predictors of Job Burnout. In: Perrewé P, Ganster DC, editors. Research in occupational stress and well being: Vol. 3. Emotional and physiological processes and positive intervention strategies. Oxford: JAI Press/Elsevier; 2004. p. 91-134.
21. White EM, Aiken LH, Sloane DM, McHugh MD. Nursing home work environment, care quality, registered nurse burnout and job dissatisfaction. Geriatric nursing (New York, N.Y.). 2020;41(2):158-64.
22. Lake ET. Development of the practice environment scale of the Nursing Work Index. Research in nursing & health. 2002;25(3):176-88.
23. McClure ML, Poulin MA, Sovie MD, Wandelt MA. Magnet Hospitals: Attraction and Retention of Professional Nurses 1983.
24. ANCC. ANCC Magnet Recognition Program [Web page].2022 [cited 7 April]. Available from: https://www.nursingworld.org/organizational-programs/magnet/
25. Statbel. Bevolking naar geslacht en leeftijdsgroep - België, laatste jaar (01 januari 2021) [Web page].2022. Available from: https://statbel.fgov.be/nl/themas/bevolking/structuur-van-de-bevolking#panel-14
26. Federaal Planbureau, Statbel. Demografische vooruitzichten 2020-2070. Referentiescenario en varianten. Maart 2021.
27. Declercq A, Vanneste D. Personele voorwaarden in woonzorgcentra. Samenvatting van de resultaten van de literatuurstudie. Onderzoeksnota 01/SWVG Publicatie 2020-08. Juli 2020.
28. Ng R, Lane N, Tanuseputro P, Mojaverian N, Talarico R, Wodchis WP, et al. Increasing Complexity of New Nursing Home Residents in Ontario, Canada: A Serial Cross-Sectional Study. Journal of the American Geriatrics Society. 2020;68(6):1293-300.
29. Rijksinstituut voor ziekte- en invaliditeitsverzekering (RIZIV). Evaluatieschaal (Katz) [Web page].2020. Available from: https://www.riziv.fgov.be/nl/professionals/individuelezorgverleners/verpleegkundigen/verzorging/Paginas/evaluatieschaal-katz.aspx
30. European Union. Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013. Official Journal of the European Union; 2013.
31. Piron C, Fagnoul J, De Wandeler E, Baeten A, Solé AM, Darras E. Normen en zorgkwaliteit in de woonzorgcentra: voorgestelde indicatoren voor opvolging en aanbevelingen. Algemene Unie der Verpleegkundigen van België vzw; 2021.
32. International Labour Organization (ILO). Updating the International Standard Classification of Occupations (ISCO). Draft ISCO-08 Group Definitions: Occupations in Health. 2012.
33. Koninklijk besluit van 27 februari 2019 tot wijziging van het koninklijk besluit van 12 januari 2006 tot vaststelling van de verpleegkundige activiteiten die de zorgkundigen mogen uitvoeren en de voorwaarden waaronder de zorgkundigen deze handelingen mogen stellen, B.S. 18 maart 2019.
34. Agentschap Zorg en Gezondheid. Interpretatie van de erkenningsvoorwaarden en -normen voor woonzorgcentra (WZC), rust- en verzorgingstehuizen (RVT) en centra voor kortverblijf (CVK) ingebed in een woonzorgcentrum. 2017
35. Van den Bosch K, Willemé P, Geerts J, Breda J, Peeters S, Van De Sande S, et al. Residential care for older persons in Belgium : Projections 2011 – 2025. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE); 2011. KCE Reports 167 Available from:

https://kce.fgov.be/publication/report/residential-care-for-older-persons-in-belgium-projections-2011-%E2%80%93-2025

36. Bijzondere wet van 8 augustus 1980 tot hervorming der instellingen, B.S. 15 augustus 1980.
37. Agentschap Zorg en Gezondheid. De erkenning aanvragen voor een woonzorgcentrum [Web page]. Agentschap Zorg en Gezondheid;2022 [cited June 2022]. Available from: https://www.zorg-en-gezondheid.be/de-erkenning-aanvragen-voor-een-woonzorgcentrum
38. Agence pour une Vie de Qualité. Agréments et subventions [Web page]. Agence pour une Vie de Qualité;2022 [cited June 2022]. Available from: https://sante.wallonie.be/?q=node/184
39. Iriscare. Maison de repos et de soins (MRS): Autorisation spécifique de Mise en Service et d'Exploitation (ASMESE) [Web page]. Iriscare;2022 [cited June 2022]. Available from: https://www.iriscare.brussels/fr/professionnels/seniors/maisons-de-repos-et-de-soins-mrs/
40. Ostbelgien. Wohn- und Pflegezentren für Senioren [Web page]. Ostbelgien;2022 [cited June 2022]. Available from: https://ostbelgienlive.be/desktopdefault.aspx/tabid-3135/475_read-3085/
41. Koninklijk besluit van 3 juli 1996 tot uitvoering van de wet betreffende de verplichte verzekering voor geneeskundige verzorging en uitkeringen, gecoördineerd op 14 juli 1994, B.S. 31 juli 1996.
42. RIZIV-INAMI. Soins en maisons de repos, maisons de repos et de soins, et centres de soins de jour : Réglementation d'application jusqu'au 31 décembre 2018 [Web page]. RIZIV-INAMI;2019. Available from: https://www.inami.fgov.be/fr/professionnels/etablissements-services/maisons-repos/Pages/mrpa-mrs-csj-20181231.aspx
43. RIZIV-INAMI. Soins dans les MRPA, MRS et CSJ [Web page]. RIZIV-INAMI;2017. Available from: https://www.inami.fgov.be/fr/professionnels/etablissements-services/maisons-repos/Pages/mrpa-mrs-csj-soins.aspx#Quels_soins_finance_l%e2%80%99assurance_soins_de_sant%c3%a9_dans_le_forfait
44. Service Public Fédéral Belge. La sixième réforme de l'Etat [Web page]. Service Public Fédéral Belge;2022 [cited June 2022]. Available from: https://www.belgium.be/fr/la_belgique/connaitre_le_pays/histoire/la_belgique_a_partir_de_1830/constitution_de_l_etat_federal/sixieme_reforme_etat
45. RIZIV-INAMI. Soins en maisons de repos, maisons de repos et de soins, et centres de soins de jour [Web page]. RIZIV-INAMI;2019 [cited June 2022]. Available from: https://www.inami.fgov.be/fr/professionnels/etablissements-services/maisons-repos/Pages/default.aspx#Ancienne_r%C3%A9glementation_INAMI,_d%E2%80%99application_jusqu%E2%80%99au_31_d%C3%A9cembre_2018
46. Decreet van 18 mei 2018 houdende de Vlaamse sociale bescherming, B.S. 17 mei 2018.
47. Ministerieel besluit van 6 november 2003 tot vaststelling van het bedrag en de voorwaarden voor de toekenning van de tegemoetkoming, bedoeld in artikel 37, § 12, van de wet betreffende de verplichte verzekering voor geneeskundige verzorging en uitkeringen, gecoördineerd op 14 juli 1994, in de rust- en verzorgingstehuizen en in de rustoorden voor bejaarden, B.S. 26 november 2003.
48. Koninklijk besluit van 17 augustus 2007 tot uitvoering van de artikelen 57 en 59 van de programmawet van 2 januari 2001 wat de harmonisering van de barema's, de loonsverhogingen en tewerkstellingsmaatregelen in bepaalde gezondheidsinstellingen betreft, B.S. 21 september 2007.
49. Koninklijk besluit 15 september 2006 tot uitvoering van artikel 59 van de wet van 2 januari 2001 houdende sociale, budgettaire en andere bepalingen, wat de maatregelen inzake vrijstelling van arbeidsprestaties en eindeloopbaan betreft, B.S. 29 september 2006.

50. Decreet van 13 december 2018 betreffende het aanbod aan diensten voor ouderen en personen met ondersteuningsbehoefte, alsook betreffende palliatieve zorg, B.S. 28 mei 2019.
51. Trybou J. Woonzorgcentra: Trends en indicatoren (2018). ING, Probis; 2018.
52. Thompson DC, Barbu MG, Beiu C, Popa LG, Mihai MM, Berteanu M, et al. The Impact of COVID-19 Pandemic on Long-Term Care Facilities Worldwide: An Overview on International Issues. Biomed Res Int. 2020;2020:8870249.
53. Vandael E, Latour K, Islamaj E, Panis LI, Callies M, Haarhuis F, et al. COVID-19 cases, hospitalizations and deaths in Belgian nursing homes: results of a surveillance conducted between April and December 2020. Archives of public health = Archives belges de sante publique. 2022;80(1):45.
54. Aalto UL, Pitkala KH, Andersen-Ranberg K, Bonin-Guillaume S, Cruz-Jentoft AJ, Eriksdotter M, et al. COVID-19 pandemic and mortality in nursing homes across USA and Europe up to October 2021. Eur Geriatr Med. 2022;13(3):705-9.
55. Sciensano. COVID-19 Surveillance veelgestelde vragen [Web page].2021. Available from: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_FAQ_NL_final.pdf
56. Sermeus W, Aiken LH, Van den Heede K, Rafferty AM, Griffiths P, Moreno-Casbas MT, et al. Nurse forecasting in Europe (RN4CAST): Rationale, design and methodology. 2011;10(6).
57. Ausserhofer D, Zander B, Busse R, Schubert M, De Geest S, Rafferty AM, et al. Prevalence, patterns and predictors of nursing care left undone in European hospitals: results from the multicountry cross-sectional RN4CAST study. BMJ quality & safety. 2014;23(2):126-35.
58. Sexton JB, Helmreich RL, Neilands TB, Rowan K, Vella K, Boyden J, et al. The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. BMC health services research. 2006;6:44.
59. Schubert M, Glass TR, Clarke SP, Schaffert-Witvliet B, De Geest S. Validation of the Basel Extent of Rationing of Nursing Care Instrument. Nursing Research. 2007;56(6):416-24.
60. Edvardsson D, Fetherstonhaugh D, Nay R, Gibson S. Development and initial testing of the Person-centered Care Assessment Tool (P-CAT). International psychogeriatrics. 2010;22(1):101-8.
61. de Koning R, Egiz A, Kotecha J, Ciuculete AC, Ooi SZY, Bankole NDA, et al. Survey Fatigue During the COVID-19 Pandemic: An Analysis of Neurosurgery Survey Response Rates. Frontiers in surgery. 2021;8:690680.
62. Maitland A, Lin A, Cantor D, Jones M, Moser RP, Hesse BW, et al. A Nonresponse Bias Analysis of the Health Information National Trends Survey (HINTS). Journal of health communication. 2017;22(7):545-53.
63. Hanna K, Giebel C, Cannon J, Shenton J, Mason S, Tetlow H, et al. Working in a care home during the COVID-19 pandemic: How has the pandemic changed working practices? A qualitative study. BMC geriatrics. 2022;22(1):129.
64. Van den Heede K, Bouckaert N, Detollenaere J, Kohn L, Maertens de Noordhout C, Vanhoreweghe J, et al. Nurse staffing on Belgian intensive care units: the impact of two years of COVID-19 pandemic. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge (KCE); 2022 05/2022. KCE Reports 353
65. Rutten JER, Backhaus R, Ph Hamers J, Verbeek H. Working in a Dutch nursing home during the COVID-19 pandemic: Experiences and lessons learned. Nursing open. 2021.
66. White EM, Wetle TF, Reddy A, Baier RR. Front-line Nursing Home Staff Experiences During the COVID-19 Pandemic. J Am Med Dir Assoc. 2021;22(1):199-203.
67. Sciensano. COVID-19 Surveillance in woonzorgcentra. Rapport week 35. 2021. Available from: https://covid-19.sciensano.be/sites/default/files/Covid19/COVID-19_Surveillance_WZC.pdf

APPENDICES

APPENDIX 1. COMPETENT AUTHORITY AND THE REFERENCE LEGISLATION BY FEDERATED ENTITIES

Table A1 – Competent authority and legislation for licensing standards of residential care facilities for the elderly

	Flemish Community	Walloon Region	Brussels-Capital Region	German-speaking Community
Policy competence for licensing	Flemish Parliament and Government	Walloon Parliament and Government	COCOM and Collège Réuni	Parliament and Government of the German-speaking Community
Public interest institution responsible for issuing the license and monitoring licensing standards	Agentschap Zorg en Gezondheid	AViQ	Iriscare	Office of the German-speaking Community for a self-determined life
Reference legislation	Flemish Residential Care Decree (*Woonzorgdecreet*) of 15 February 2019)[a]	Walloon code of Health and Social Action – decretal part[b] (art 359) and regulatory part[c] (art 1403)	Ordinance of the Ministry of the Brussels-Capital Region of 24 April 2008[d] MD of 6 November 2003[e] RD of 21 September 2004[f] MD of 05 December 2012[h]	RD of 21 September 2004[f]
Article of the legislation on staffing norms related to licensing	Interpretation licensing conditions - standards for nursing homes with- and without additional licensing and short stay, version of 29 November 2017[i]	Annex 120 referred in Article 1403 of the Walloon code of Health and Social Action	Article 11 of the ordinance of 24 April 2008 Article 2, 3 and 5 of the MD of 6 November 2003 Annex 1 of the RD of 21 September 2004 [#] Article 2 of the MD of 5 December 2012	Annex 1 of the RD of 21 September 2004

[#] *In practice, Iriscare only uses the staffing standards for licensing defined by the Ministerial Decree of 6 November 2003 because they are more demanding than those of the Royal Decree of 21 September 2004.; COCOM = Commission Communautaire commune (Joint Community Commission); AViQ = Agence pour une Vie de Qualité (Agency for Quality Living)*

[a] https://etaamb.openjustice.be/nl/decreet-van-15-februari-2019_n2019030252.html; [b]https://wallex.wallonie.be/de/contents/acts/0/117/18.html; [c]https://wallex.wallonie.be/eli/arrete/2013/07/04/020132713/2021/12/04; [d]https://etaamb.openjustice.be/fr/ordonnance-du-24-avril-2008_n2008031213.html; [e]https://etaamb.openjustice.be/fr/arrete-ministeriel-du-06-novembre-2003_n2003023017#:~:text=Arr%C3%AAt%C3%A9%20minist%C3%A9riel%20fixant%20le%20montant,de%20repos%20pour%20personnes%20%C3%A2g%C3%A9es; [f]https://etaamb.openjustice.be/fr/arrete-royal-du-21-septembre-2004_n2004022802.html; [g]https://etaamb.openjustice.be/fr/arrete-de-la-communaute-germanophone-du-26-juin-2009_n2009203931.html; [h] https://etaamb.openjustice.be/fr/arrete-ministeriel-du-05-decembre-2012_n2012022442.html; [I] https://www.zorg-en-gezondheid.be/norminterpretaties-voor-woonzorgcentra-rust-en-verzorgingstehuizen-en-centra-voor-kortverblijf

RD = Royal Decree; MD = Ministerial Decree

APPENDIX 2. RESULTS CHAPTER

Appendix 2.1. Results on organisational level

Table A2 – Average staffing levels in nursing homes in FTE per professional category

	Belgium (n=46)	Flanders (n=30)	Wallonia (n=13)	Brussels (n=3)
Management	1.5	1.7	1.2	1.2
Head nurses	2.6	2.8	1.8	4.0
Registered nurses	11.4	12.8	7.9	13.6
Care assistants	22.1	24.7	15.1	26.9
Physiotherapists	1.6	1.7	1.1	3.0
Occupational therapists	0.3	0.2	0.4	0.8
Speech therapists	1.6	1.8	0.8	2.5
Other allied health professionals	0.7	0.7	0.5	1.5
Living assistants	1.4	1.9	0.4	0.8
Administration staff	1.7	1.7	1.0	4.5
Logistic staff	2.1	2.9	0.4	1.1
Kitchen staff	5.6	5.8	4.8	7.8
Cleaning staff	7.8	8.0	5.8	14.7
Other	1.3	1.4	1.0	1.2

Table A3 – Average staffing levels per 30 residents in FTE per professional category

	Belgium (n=46)	Flanders (n=30)	Wallonia (n=13)	Brussels (n=3)
Head nurses	0.9	0.9	0.7	1.0
Registered nurses	3.8	4.1	3.1	3.9
Care assistants	7.2	7.7	5.9	7.6
Physiotherapists	0.6	0.6	0.4	0.8
Occupational therapists	0.1	0.1	0.2	0.2
Speech therapists	0.5	0.6	0.3	0.7
Other allied health professionals	0.2	0.2	0.2	0.5
Living assistants	0.4	0.6	0.2	0.3
Logistic staff	0.7	1.0	0.2	0.3
Cleaning staff	2.5	2.4	2.3	4.4

Table A4 – Organisation of care in nursing homes (%)

	Belgium (n=46)	Flanders (n=30)	Wallonia (n=13)	Brussels (n=3)
RNs have a fixed ward				
Percent (totally) disagree	47.8	36.7	76.9	33.3
Percent (totally) agree	52.2	63.3	23.1	66.7
Care assistants have a fixed ward				
Percent (totally) disagree	30.4	13.3	69.2	33.3
Percent (totally) agree	69.6	86.7	30.8	66.7
Team of allied health professionals is integrated into the care team at ward level				
Percent (totally) disagree	26.1	26.7	15.4	66.7
Percent (totally) agree	73.9	73.3	84.6	33.3

Small-scale normalised living is embedded in nursing home				
Percent yes	13.0	13.3	7.7	33.3
Percent partially	50.0	53.3	46.2	33.3
Percent no	37.0	33.3	46.2	33.3
The coordinating and advisory physician is very involved, has an active role in nursing home				
Percent (totally) disagree	13.0	13.3	15.4	0.0
Percent neutral	21.7	13.3	46.2	0.0
Percent (totally) agree	65.2	73.3	38.5	100.0

Table A5 – Average number of COVID-19 cases, deaths and infections in nursing homes

	Belgium	Flanders	Wallonia	Brussels
Minimum confirmed COVID-19 cases (n=39; 24; 12; 3)				
1 in 2020	0.3	0.4	0.2	0.0
2 in 2020	0.6	0.6	0.9	0.0
10 in 2020	1.5	1.5	1.6	1.3
1 in 2021	0.2	0.3	0.1	0.3
2 in 2021	0.2	0.2	0.2	0.0
10 in 2021	2.1	3.2	0.5	0.0
Confirmed and suspected deaths due to COVID-19 (n=38; 26; 9; 3)				
In 2020	9.5	9.2	7.6	17.7
In 2021	2.6	3.2	1.8	0.0
COVID-19 infections (n=46; 30; 13; 3)				
At the time of the survey	3.3	0.0	3.3	0.0

Table A6 – Current situation regarding staff attrition due to COVID-19 in nursing homes (%)

	Belgium (n=46)	Flanders (n=30)	Wallonia (n=13)	Brussels (n=3)
0% - 5%	80.4	83.3	69.2	100.0
6% - 15%	6.5	3.3	15.4	
16% - 30%	13.0	13.3	15.4	
31% - 45%				
> 45%				

Appendix 2.2. Results on staff level

Table A7 – Overall evaluation of work environment in nursing homes (%), by type of direct caregiver and by region

	Registered nurses (n=281)			Care assistants (n=548)			Allied health professionals (n=225)		
	Flanders n=187	Wallonia n=80	Brussels n=14	Flanders n=377	Wallonia n=143	Brussels n=28	Flanders n=126	Wallonia n=82	Brussels n=17
Poor	6.4	3.8		5.6	7.7	3.6	1.6	4.9	
Average	28.9	22.5		29.2	15.4	25.0	27.8	20.7	11.8
Good	55.1	65.0	85.7	57.3	67.8	60.7	58.7	65.9	88.2
Excellent	9.6	8.8	14.3	8.0	9.1	10.7	11.9	8.5	

Table A8 – with evaluation work environment in nursing homes measured by PES-NWI, percentage that (totally) agreed with items (%), by type of direct caregiver and by region

	Registered nurses (n=281)			Care assistants (n=548)			Allied health professionals (n=225)		
	Flanders n=187 (185-187)	Wallonia n=80 (57-81)	Brussels n=14 (11-14)	Flanders n=377 (371-379)	Wallonia n=143 (105-141)	Brussels n=28 (28-29)	Flanders n=126 (123-126)	Wallonia n=82 (76-82)	Brussels n=17 (17)
Overall score	64.7	73.8	100.0	65.3	76.9	71.4	70.6	74.4	88.2

Manager ability, leadership and support	82.9	54.4	90.9	81.2	64.2	82.1	78.6	65.9	82.4
Participation in nursing home affairs	58.8	38.6	63.6	62.3	55.1	67.9	65.1	48.8	41.2
Collegial relations (unit)	87.0	95.1	100.0	79.8	94.3	100.0	87.8	97.4	100.0
Foundations for quality care	87.7	73.7	100.0	89.2	81.3	85.7	88.9	80.5	82.4
Staffing and resources adequacy	41.2	17.5	36.4	37.7	18.1	46.4	53.2	35.8	47.1

** n for overall score is shown, minimum and maximum n for subscales are shown betwefpen brackets*

Table A9 – Evaluation of collaboration and communication with other nursing home staff, percentage that answered with 'good' or 'excellent' (%), by type of direct caregiver and by region

	Registered nurses (n=191-280)			**Care assistants** (n=422-543)			**Allied health professionals** (n=161-224)		
	Flanders n=146-185	Wallonia n=35-81	Brussels n=10-14	Flanders n=310-371	Wallonia n=89-143	Brussels n=23-29	Flanders n=100-126	Wallonia n=48-81	Brussels n=13-17
Colleagues in your department	87.0	95.1	100.0	79.8	94.3	100.0	87.8	97.4	100.0
Head of the department	82.9	90.1	100.0	82.6	86.2	88.9	76.6	86.4	100.0
Ward manager	81.3	88.8	100.0	82.1	83.3	96.0	75.4	83.1	87.5
Head of care	71.0	81.8	100.0	74.4	84.7	85.2	71.6	78.2	85.7
Administrator of the NH	66.5	84.0	100.0	69.9	85.6	88.9	71.1	85.5	62.5
General practitioners	78.3	97.2	100.0	74.5	85.3	96.0	59.2	80.6	73.3
Advisory physician	77.7	77.5	92.3	73.9	79.2	95.8	67.0	74.6	94.1
Animation staff	79.5	94.4	100.0	73.9	79.2	95.8	86.2	94.2	100.0
Allied health staff	74.6	90.8	100.0	75.8	92.8	92.6	N/A	N/A	N/A
Registered Nurses	N/A	N/A	N/A	N/A	N/A	N/A	92.9	96.3	100.0
Care assistants	N/A	N/A	N/A	N/A	N/A	N/A	82.5	95.0	100.0
Cleaning staff	85.5	88.3	100.0	85.7	87.4	100.0	87.9	98.7	94.1
Kitchen staff	76.0	86.1	100.0	77.7	87.1	88.5	79.8	94.8	94.1

Logistics staff	82.2	83.3	100.0	82.3	86.5	82.6	85.2	96.8	93.3
Volunteers	86.4	97.1	91.7	82.6	93.3	91.3	82.5	93.8	93.8
Administration (e.g. reception)	81.6	86.4	100.0	83.8	92.3	92.9	95.1	97.1	100.0
Social service staff	81.8	80.0	100.0	84.9	84.4	91.3	87.4	85.4	100.0
Technical maintenance staff	81.6	87.8	100.0	84.9	84.4	91.3	83.9	96.2	100.0

** N/A stands for 'not asked'*
*** minimum and maximum n for subscales are shown*

Table A10 – Resident-to-staff ratio in nursing homes (mean), by region

Type of shift	**Registered nurses and care assistants** (n=782)		
	Flanders n=535	Wallonia n=205	Brussels n=42
Overall	12.0	10.5	6.5
Morning	6.7	7.3	6.4
Day	6.5	8.3	4.7
Evening	11.7	9.0	9.4
Night	40.9	36.7	

Table A11 – Burnout high risk analysis, measured by MBI (%), by type of direct caregiver and by region

High risk	**Registered nurses** (n=283)			**Care assistants** (n=554)			**Allied health professionals** (n=225)		
	Flanders n=187	Wallonia n=81-82	Brussels n=14	Flanders n=378-379	Wallonia n=146	Brussels n=29	Flanders n=126	Wallonia n=81-82	Brussels n=17
Emotional exhaustion	21.4	31.7	0	22.4	28.1	20.7	7.9	22.0	0.0
Depersonalization	16.6	27.2	7.1	18.7	26.7	10.3	6.3	17.3	5.9
Reduced personal accomplishment	29.9	40.2	42.9	26.5	42.5	51.7	15.9	36.6	0.0

** minimum and maximum n for subscales are shown*

Table A12 – Evaluation of job satisfaction in nursing homes, percentage (very) dissatisfied (%), by type of direct caregiver and by region

(very) dissatisfied	Registered nurses (n=283)			Care assistants (n=548)			Allied health professionals (n=225)		
	Flanders n=187 (176-187)	Wallonia n=82 (62-82)	Brussels n=14 (13-14)	Flanders n=375 (310-371)	Wallonia n=144 (89-143)	Brussels n=29 (21-29)	Flanders n=126 (100-126)	Wallonia n=82 (48-81)	Brussels n=17 (13-17)
Overall	15.0	37.8	0.0	12.5	31.3	17.2	6.3	23.2	5.9
Schedule flexibility	19.8	21.5	7.1	18.6	15.8	17.2	6.5	18.8	13.3
Advancement opportunity	28.3	62.3	28.6	21.6	44.9	33.3	30.9	59.2	62.5
Independence at work	13.9	16.0	7.7	18.7	14.9	11.1	7.9	11.4	5.9
Professional status	21.9	37.8	14.3	16.3	26.0	31.0	19.8	25.0	23.5
Wages	40.1	52.4	50.0	44.3	41.7	39.3	21.4	31.7	64.7
Educational opportunity	24.9	35.4	35.7	19.1	24.8	32.1	20.6	31.6	17.6
Annual leave	28.1	32.5	14.3	25.4	25.9	31.0	23.0	28.2	17.6
Sick leave	27.6	25.8	23.1	27.1	22.5	36.4	15.2	23.9	5.9
Study leave	22.7	27.4	46.2	20.3	24.6	33.3	25.2	29.7	33.3

** n for overall score is shown, minimum and maximum n for subscales are shown between brackets*

Table A13 – Intention to leave current job, and next job interest (%), by type of direct caregiver and by region

	Registered nurses (n=283)			Care assistants (n=552)			Allied health professionals (n=225)		
	Flanders n=187	Wallonia n=82	Brussels n=14	Flanders n=377	Wallonia n=146	Brussels n=29	Flanders n=126	Wallonia n=82	Brussels n=17
Intention to leave current job within year	20.3	39.0	0.0	23.9	25.3	27.6	16.7	23.2	23.5
	Flanders n=38	Wallonia n=32	Brussels n=0	Flanders n=90	Wallonia n=37	Brussels n=8	Flanders n=21	Wallonia n=19	Brussels n=4
Same job, in another nursing home	29.5	12.8	0.0	24.3	34.0	54.5	24.0	37.0	50.0
Other work/other position, in another nursing home	6.8	5.1	0.0	11.7	4.3	0.0	12.0	3.7	0.0
In the care sector (same function), not in a nursing home	25.0	33.3	0.0	19.8	10.6	18.2	8.0	18.5	50.0
In the care sector (other function), not in a nursing home	6.8	7.7	0.0	10.8	8.5	18.2	20.0	14.8	0.0
Not in the care sector	31.8	41.0	0.0	33.3	42.6	9.1	36.0	25.9	0.0
	Flanders n=184	Wallonia n=82	Brussels n=13	Flanders n=366	Wallonia n=140	Brussels n=26	Flanders n=126	Wallonia n=77	Brussels n=17
Difficulty to find another job in the care sector Percentage (very) difficult	56.5	43.9	23.1	54.6	51.4	69.2	65.1	66.2	64.7

Table A14 – Staff-perceived quality of work environment, measured by likelihood to recommend their nursing home (%), by type of direct caregiver and by region

	Registered nurses (n=282)			Care assistants (n=549-552)			Allied health professionals (n=221-224)		
	Flanders n=187	Wallonia n=82	Brussels n=13	Flanders n=376-378	Wallonia n=145	Brussels n=28-29	Flanders n=125	Wallonia n=79-82	Brussels n=17
To colleagues, as a good place to work Percentage (very) likely	75.9	68.3	100.0	76.1	82.8	89.3	84.8	79.7	94.1
To family or friends, as a good place to stay Percentage (very) likely	82.9	67.1	100.0	74.9	75.9	65.5	82.4	70.7	94.1

** minimum and maximum n for subscales are shown*

Table A15 – Staff-perceived quality of care in nursing home (%), by type of direct caregiver and by region

	Registered nurses (n=280-283)			Care assistants (n=545-553)			Allied health professionals (n=221-224)		
	Flanders n=186-187	Wallonia n=80-82	Brussels n=13-14	Flanders n=376-378	Wallonia n=140-146	Brussels n=28-29	Flanders n=126	Wallonia n=75-81	Brussels n=16-17
Quality of care Percentage good – excellent	69.5	89.0	100.0	67.5	88.4	89.3	68.3	88.8	94.1
Quality of life (and housing) Percentage good – excellent	64.7	78.0	100.0	65.3	84.8	89.7	56.3	88.9	100.0
Confidence in management to solve reported problems Percentage (very) certain	52.2	48.8	78.6	55.7	61.7	60.7	54.8	58.0	41.2
Resident safety Percentage (very) good	58.6	56.8	85.7	56.9	63.0	60.7	63.5	64.6	50.0

Evolution quality of care over one year Percentage remained the same/improved	76.3	91.3	85.7	75.3	87.9	96.6	70.6	84.0	82.4
Evolution quality of life (and housing) over one year Percentage remained the same/improved	78.0	90.1	92.9	81.2	90.7	100.0	66.7	84.4	88.2

** minimum and maximum n for subscales are shown*

Table A16 – Evaluation of rationing of care, measured by BERNCA-NH, percentage sometimes – often (%), by type of direct caregiver and by region

Sometimes – often	**Registered nurses** (n=206-278)			**Care assistants** (n=398-554)			**Allied health professionals** (n=74-221)		
	Flanders n=156-186	Wallonia n=43-79	Brussels n=7-13	Flanders n=305-374	Wallonia n=81-142	Brussels n=12-28	Flanders n=37-126	Wallonia n=36-78	Brussels n=1-17
Activities of daily living	20.9	31.4	24.6	22.5	33.2	34.2	21.8	33.7	24.1
Caring, rehabilitation and monitoring	36.8	49.1	31.2	31.2	44.6	44.2	28.7	46.1	22.3
Documentation	41.3	50.8	38.5	33.1	39.7	46.4	40.7	47.1	43.2
Social care	31.6	47.6	40.2	30.3	37.9	59.2	48.1	42.9	36.2

** minimum and maximum n for subscales are shown*

Table A17 – Evaluation of organised person-centred care, measured by P-CAT, percentage (totally) agree (%), by type of direct caregiver and by region

(totally) agree	**Registered nurses** (n=278-282)			**Care assistants** (n=535-548)			**Allied health professionals** (n=220-224)		
	Flanders n=185-186	Wallonia n=79-82	Brussels n=14	Flanders n=373-377	Wallonia n=135-142	Brussels n=27-29	Flanders n=125-126	Wallonia n=78-81	Brussels n=17
Extent of personalizing care	51.2	43.1	70.4	52.1	51.8	71.8	54.7	48.9	69.7

Amount of organisational support	35.5	41.3	16.1	34.2	36.5	30.0	20.1	28.8	10.3
Degree of environmental accessibility	36.6	53.3	42.9	35.4	46.9	45.2	32.9	47.6	38.2

** minimum and maximum n for subscales are shown*

Table A18 – Tasks below nurses' skill level performed by RNs during most recent shift, percentage sometimes – often (%), by type of direct caregiver and by region

Sometimes – often	Registered nurses (n=280-283)		
	Flanders n=185-186	Wallonia n=78-82	Brussels n=13-14
Answering the phone, administrative tasks	98.4	97.5	100.0
Cleaning up resident rooms and materials	89.2	88.9	92.3
Making beds	83.8	90.2	69.2
General logistic tasks	83.3	87.3	69.2
Serving and clearing meals	81.2	80.2	84.6
Ordering supplies and materials	77.4	69.1	100.0
Resident transport within nursing home	64.0	79.0	84.6
Distribution of incontinence material	59.1	71.6	38.5
Living support	45.2	66.7	69.2

** minimum and maximum n for all items are shown*

COLOPHON

Titre:	Politique de dotation en personnel des établissements d'hébergement pour personnes âgées : une enquête exploratoire menée pendant la pandémie de COVID-19
Auteurs:	Yannai DeJonghe (UGent), Céline Ricour (KCE), Christophe de Meester (KCE), Alice Malter (UCLouvain), Celia Primus-de Jong (KCE), Koen Van den Heede (KCE), Carine Van de Voorde (KCE), Marie-Thérèse Van Durme (UCLouvain), Herlinde Wynendaele (UGent), Jeroen Trybou (UGent)
Coordination de projet:	Els Van Bruystegem (KCE)
Remerciements:	Els Clays (UGent), Liesa Dewitte (UGent), René Schwendimann (University of Basel, Switzerland), Walter Sermeus (KU Leuven), Sophie Vandepitte (UGent), Katrien Verleye (UGent), Franziska Zúñiga (University of Basel, Switzerland)
Layout:	Ine Verhulst, Joyce Grijseels

Disclaimer:

Ce document est basé sur une enquête exploratoire menée auprès du personnel et de la direction travaillant dans des maisons de retraite pendant la pandémie de COVID-19. Le contexte de la pandémie COVID-19 a rendu impossible l'obtention d'un échantillon représentatif. Ce travail doit donc être considéré comme exploratoire avec une validité externe limitée. Les conclusions doivent être lues en tenant compte de ces limites. Par ailleurs, le KCE n'a pas suivi, compte tenu du contexte spécifique, ses procédures méthodologiques habituelles.

Date de publication:	20 september 2022
Language:	English
Format:	Adobe® PDF™ (A4)
Depot légale:	D/2022/10.273/x
ISSN:	2466-6459

Copyright: KCE reports are published under a "by/nc/nd" Creative Commons Licence http://kce.fgov.be/content/about-copyrights-for-kce-publications.

Comment citer ce document?

DeJonghe Y, Ricour C, de Meester Ch, Malter A, Primus-de Jong C, Van den Heede K, Van de Voorde C, Van Durme M-T, Wynendaele H, Trybou J. Politique de dotation en personnel des établissements d'hébergement pour personnes âgées : une enquête exploratoire menée pendant la pandémie de COVID-19. Brussels: Belgian Health Care Knowledge Centre (KCE). 2022. KCE Reports vol. D/2022/10.273/xx.

This document is available on the website of the Belgian Health Care Knowledge Centre.