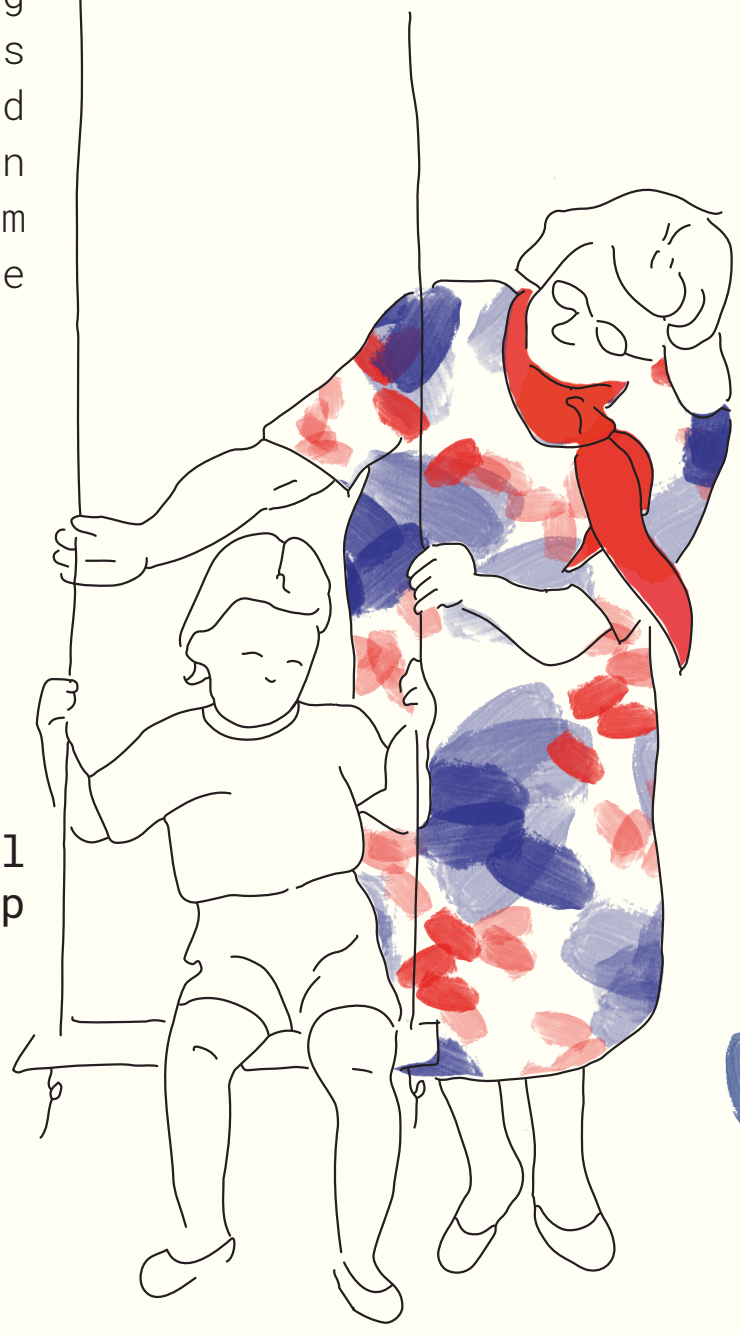
# KEEP ON LEARNING!

Fostering continuous learning and improvement in long-term nursing care



Merel van Lierop

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# CONTENT

# CHAPTER 1

# General introduction

## Relevance of continuous learning and improvement

The world's population is ageing [1, 2]. Ageing is often accompanied with an increase in complex health demands and multi-morbidities, which frequently results in greater care dependency among older individuals [3, 4]. The ageing in place policy of our Dutch government focuses on facilitating older people to live independently in their own homes or communities as they grow older for as long as possible [5]. However, over time, their care needs grow and become more complex, and a nursing home transition could be necessary. By the time older people enter a nursing home setting, they often have a high care complexity [6]. At the same time, the working force (20-64 year olds), including nursing staff working in health care, will decrease in quantity and quality [1, 7]. The expected shortage of staff in the Netherlands in 2030 is greatest in the long-term care sector (including the nursing home setting and home care setting), including high shortages of nursing staff [8]. Care organisations try to solve the problem of a nursing staff shortage by deploying employees with a lower education level than preferred and with no background in caregiving [7]. However, these employees regularly do not have a care-related background.

Nurses working in long-term care (including home care or nursing home care) need to find ways to cope with challenges such as complex health demands, staff shortages and lack of expertise. They need to be innovative and have to keep on learning to keep the quality of care as high as possible while the quantity of staff is under pressure [9]. Indeed, Florence Nightingale emphasised the importance of life-long learning when she said, *"Let us never consider ourselves finished nurses. We must be learning all of our lives"* [10].

## Workplace learning as a continuous learning method

Workplace learning can support nursing staff in coping with the described challenges, as well as stimulating innovative behaviour and lifelong learning. There is no singular definition of what workplace learning includes, because it often is used for different purposes in different situations, and because it has been approached and theorised by many different disciplinary backgrounds [11]. However, in this dissertation we follow the definition of Cacciattolo, who defines workplace learning as:

> *The acquisition of knowledge or skills by formal or informal means that occurs in the workplace* [12].

Workplace learning emphasises the aspect of continuous learning in and about everyday practice. It primarily includes informal learning but can also be combined with formal learning [12]. Informal learning consists of learning that takes place outside of formal, structured settings like classrooms; it can therefore include, for example, self-directed learning, networking with peers, coaching or mentoring [13].

Workplace learning is based on the fact that it is difficult to translate the knowledge gained through structured (classical) approaches into practice [14, 15]. This creates a gap that can be explained as a "distancing of theoretical knowledge from the actual doing of practice", which means there is a mismatch between the knowledge learned *outside* practice and the specific knowledge that is necessary to function *in* practice [16, 17]. By establishing workplace learning in long-term care, newly gained knowledge can be used and practised immediately at work; it is therefore – according to Dale's learning pyramid, which shows various learning methods and their knowledge retention rates – the most effective way of learning [18].

Several models lay a foundation for workplace learning. Examples include the 70-20-10 model, which states that learning and development take place through other means than formal education; the experiential learning model (Kolb), which helps people identify the way they learn from experience; the 5 moments of need model, which states that learning should meet the learner's needs and should be delivered at the right time and in the right context (in organisations this means during practice); or the high impact learning that lasts (HILL) model, which offers building blocks that can help people through formal as well as informal continuous learning [19-22]. These models also highlight overarching aspects, like the necessity of motivation and a sense of urgency or need for learning for workplace learning to succeed. However, to our knowledge, models of workplace learning have not yet been extensively designed and tested specifically for the long-term care setting.

### Stimulating professionalism and leadership of nurses in the Dutch nursing home and home care setting

Nurses working in long-term care settings are responsible for the continuity and quality of care provision to the most vulnerable older people. Long-term care can be provided at home or in a nursing home organisation. In the Netherlands, a nursing home in a long-term care setting consists of care for older people to provide a supportive and home-like environment where residents feel safe, while simultaneously helping residents to maintain their functional status

for as long as possible [23]. Nursing home staff mainly consist of nursing assistants and nurses with a vocational educational background, and fewer nurses have a bachelor educational background [24]. The home care setting in the Netherlands includes care and support for older people who wish to continue living at home for as long as possible. To be able to continue living at home, people receive (formal and informal) help with, for example, household activities, personal care and nursing care [25]. There are proportionally more nurses with a bachelor's degree within the home care setting than in nursing home care [26].

The professional profile of nursing staff in both settings includes being a healthcare provider, communicator, collaborative partner, reflective professional, health promoter, organiser and professional and quality promoter; these 'canMEDS roles' are also included in the education of nurses (vocational and bachelor education) [27, 28]. However, there is a difference in roles when comparing nurses with a vocational and bachelor's level education. This is mainly visible in the higher-level tasks within the canMEDS roles for nurses with a bachelor's degree, such as applying principles for evidence-based practice, clinical reasoning, coaching, conducting practice-oriented research and clinical leadership [28]. For workplace learning, being able to be a reflective professional is especially important, as this means nurses need to continuously develop their expertise and contribute to the expertise of colleagues [29]. Additionally, knowledge and experience should be exchanged with colleagues so nurses can learn together. This learning can be supported by using real practice-based situations or challenges as opportunities for learning.

### Nurse-sensitive data as a learning opportunity

Insight into nurse-sensitive data (e.g. a high number of fall incidents or low client satisfaction) should be used as a learning opportunity to improve processes in practice and quality of care [30]. This is especially useful for canMEDS roles such as being a reflective professional and being a quality promotor. Nurse-sensitive data show the processes, structures and outcomes of care that nurses provide and can influence [31]. These data can include direct data such as information about malnutrition or fall incidents, but also more indirect data such as client satisfaction. For years, these data have been measured and recorded by nurses in healthcare practice. This certainly applies to long-term care, where many initiatives have been taken to improve quality of care [32]. One of these initiatives is the International Prevalence Measurement of Care Quality (LPZ) [33], which measures the prevalence and related quality indicators of different care problems (e.g. malnutrition) on a yearly basis and provides the results to nurses through a

dashboard [34]. However, nurses often lack the research-oriented knowledge and support to use nurse-sensitive data for quality improvement [35]. For example, research has shown that nurses often need help in interpreting and translating these data into quality improvement actions in practice [31]. Furthermore, a top-down management structure is often present in healthcare practices, and data are often measured and recorded by quality departments for management reports and external accountability (e.g. inspectorate or audits). The data often do not reach the nursing staff, who do not feel ownership of either the data or the potential quality improvements [31, 36]. In this top-down approach, nurses have no leadership in learning from nurse-sensitive data, and the data are insufficiently used for reflection, learning and improvement purposes among nursing staff in the interests of quality of care. This is inconsistent with the professional profile of nursing staff and the expectations that nursing staff will be reflective professional and innovators [27, 28]. Without reflection and learning capacity, improving quality of care is not possible [37].

### Workplace learning using a bottom-up approach

Ideally, nurses would be in the lead of choosing their own goals and processes during workplace learning based on available data. This means a more bottom-up approach is needed to establish workplace learning. The term "bottom-up approach" describes the ownership, management and decision-making processes, such as improvement processes or innovation initiatives that include nursing staff who have the most direct experience with day-to-day care [38]. Earlier research in hospitals has shown that when a bottom-up approach is used it contributes to a positive effect on the quality of care [39]. In this process, it was important that nurses identified and analysed their problems, and that they directed their priorities and actions. This approach can furthermore be beneficial, as it increases work satisfaction, motivation and employee retention, which again can have a direct effect on increasing the innovative behaviour important for nurses to cope with the challenges already mentioned [40]. It is, however, also important that this bottom-up approach and innovative behaviour is supported, recognised and facilitated by the organisation [41]. Therefore, to facilitate workplace learning through a bottom-up approach in long-term nursing teams, it is important to create a learning and improvement environment that is supportive and motivating for nursing staff. Such an environment is also necessary for bottom-up workplace learning to be continuous. However, continuous learning and improvement, along with workplace learning in general, are not easy to execute [42]. This process includes organisational and cultural changes and takes time, and it can be a challenge to deal with the pressure to show immediate results.

## Relevance of this dissertation

To date, research on workplace learning has mainly been conducted in hospital settings. Earlier research in this setting has shown that it is important to consider the existing learning environment to make sure the workplace learning process can be tailored to match that environment [43].

Knowledge about how to create continuous learning and improvement – and workplace learning – specifically in a long-term care setting is still scarce. The importance of learning has also been emphasised in Dutch elderly care frameworks, such as the Dutch National Quality Standard for Long-term Care, which states that the aim is to let nurses continuously learn and develop to improve quality of care [44]. This also includes interprofessional learning, where healthcare professionals from different professions learn together in daily practice. This is important because nurses increasingly have to collaborate with other disciplines because of the positive effects of such collaboration on efficiency of care and quality of care [45]. The studies in this dissertation therefore focus on how nursing staff in long-term care settings can foster continuous learning and improvement at work. This dissertation also investigates factors for interprofessional learning in these settings.

## Objectives of this dissertation

The main objective of this dissertation is to investigate how to foster systematic learning and quality improvement at work in long-term nursing care. Specifically, we pursued the following goals:

1) Provide insight into workplace learning conditions for nursing staff to enhance continuous learning and improvement in long-term care settings.
2) Develop a Learning Innovation Nurses Climate (LINC) approach to stimulate continuous learning and quality improvement.
3) Evaluate the implementation of the LINC approach and get insight into the first experiences of the nurses and coaches involved.
4) Provide insight into factors to facilitate interprofessional learning in a long-term care setting.

## Outline of this dissertation



In Chapter 2, we report on a study investigating what the necessary individual, team and organisational workplace learning conditions are for nursing staff in long-term care settings. Chapter 3 presents the construction of a scale to assess workplace learning conditions in long-term care. In Chapter 4, we provide insight into the current workplace learning conditions for nursing staff teams in Dutch long-term care settings. In Chapter 5, we present the LINC approach, report on its implementation and draw conclusions regarding the experiences resulting from this implementation. A scoping review to identify facilitators that contribute to further developing an interprofessional learning culture in nursing homes is presented in Chapter 6. Finally, Chapter 7 summarises the main findings of our studies and discusses several methodological and theoretical aspects. We also present implications for practice, research and education.

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# CHAPTER 2

# How to establish workplace learning in long-term care: results from a World Café dialogue

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## Abstract

*Background*

As long-term care continues to change, the traditional way of learning for work purposes is no longer sufficient. Long-term care organisations need to become 'learning organisations' and facilitate workplace learning for nursing staff teams. Therefore, insight is needed into what conditions are important for establishing workplace learning. The aim and objective of this article is to gain insight into necessary individual, team and organisational conditions for nursing staff to enhance workplace learning in long-term care settings.

*Methods*

This study is a qualitative explorative study. A World Café method was used to host group dialogues in which participants (n = 42) discussed certain questions. Group dialogues were held for the nursing home and community care setting separately due to organisational differences. Nursing staff, experts in workplace learning, educational staff, client representatives and experts in the field of work and organisation in healthcare organisations were invited to a Dutch long-term care organisation to discuss questions of interest. Data were analysed using theme-based content analysis.

*Results*

Overall themes concerning individual, team and organisational conditions for workplace learning included: facilitating characteristics (e.g. to be given time and room for [team] development); behavioural characteristics (e.g. an open attitude); context and culture (e.g. feeling safe); cooperation and communication (e.g. giving/receiving feedback); and knowledge and skills (e.g. acquiring knowledge from each other). No major differences were found between settings.

*Conclusions*

By assessing the themes at the individual, team and organisational level regarding nursing staff, the current workplace learning situation, and its possible improvements, can be detected.

## Background



Long-term care provided in the Netherlands by nursing staff is becoming more complex due to the increasing number of older people who are often chronically ill, as well as changing perspectives on the definition of health and 'good care' [1, 2]. In addition to these changes in long-term care, another challenge is the contemporary shift 'from working and learning to working is learning' that is taking place, where continuous learning and improvement of care needs to be part of every daily practice [3]. To establish such a shift in learning, demands such as the requirement for an appropriate learning design for the health organisation are necessary. Research and educational institutions should work together to establish such learning designs within care organisations. However, the traditional way of learning for work purposes, such as by attending external trainings to gain knowledge and skills, is no longer sufficient [4]. The transfer of learned knowledge and skills from an external training or other external education method to the workplace is difficult [5]. Long-term care organisations therefore need to become 'learning organisations' and facilitate continuous learning and improvement for nursing staff teams at the workplace [4]. This is referred to as workplace learning and is expected to result in more effective learning than traditional (classroom) education [4].

Workplace learning is informal learning – sometimes combined with formal learning – which takes place during daily practice with the goal of improving the competencies of employees, enhancing their knowledge and improving quality of care [6]. It aims to create learning opportunities at work, where employees acquire knowledge, skills and attitudes that influence their professional development and therefore influence the organizational performance positively [7]. The importance of workplace learning is acknowledged not only within the organisational or business setting, but also within Dutch vocational education. According to Poortman and Visser (2009), there are two main reasons why workplace learning has become an important component in Dutch vocational education. The first reason is that participants develop skills and share knowledge during workplace learning which are insufficiently obtained during traditional education. Second, the connection between education and professional practice is promoted through workplace learning [8]. Workplace learning is also financially attractive, results in active participation of employees and increases the innovation competencies of professionals in daily practice [9, 10].

However, to facilitate workplace learning for nursing staff teams in long-term care organisations, insight into the conditions for establishing workplace learning in nursing is needed. Within healthcare, research has shown that there are different ways of looking at learning in other

settings, such as hospitals [11]. On the one hand, conditions that exist in a workplace with regard to learning are important, and these can include the availability of resources such as manuals, the presence of colleagues who stimulate learning or the presence of a supervisor who supports learning [11]. On the other hand, the focus can be on the atmosphere within the organization – that is, the culture with regard to learning. Decuyper et al. (2010) have shown similar conditions as predictors of informal team learning and described these predictors at the level of the individual, the team and the organisation. Decuyper et al. (2010) distinguished these three levels because they are important to manage the continuously changing environment in every modern organisation, and are therefore important for workplace learning. At the level of the individual, examples of conditions for informal team learning include being motivated, flexible and having high self-efficacy. At the team level, examples are team leadership and management or team composition. At the organisational level, organisational strategy and leadership are mentioned. Leaders are important because they should proactively manage team learning and remain constantly involved in the learning process [12].

Several articles mention important conditions for workplace learning in nursing care, such as having a safe team climate, or increasing nurses responsibilities and independence [13, 14]. However, at this point, conditions for the individual, team, and organisational levels for nursing staff working specifically in long-term care (nursing home or community care setting) remain largely unknown. It is important to identify more detailed information about these conditions to be able to operationalise workplace learning in the nursing setting. Therefore, the current study sought to identify the necessary individual, team and organisational conditions for nursing staff to enhance workplace learning within a long-term care setting (nursing home setting and community care). The identification of conditions offers a starting point for long-term care organisations to become 'learning organisations' and facilitate workplace learning for nursing staff teams.

## Methods

*Design*

We conducted a qualitative exploratory study using a World Café dialogue in which participants discussed necessary conditions for establishing workplace learning in small group discussions [15, 16]. This method is a creative process to promote collaboration and to share knowledge and ideas, which makes it possible to create vivid conversations and actions [17]. In an informal 'café' environment, several small groups of participants discussed questions of interest at

different tables. All participants shuffled between tables and thus formed new subgroups in which they discussed and built on previously mentioned ideas from the prior subgroup. At the end of the World Café, the ideas and findings from all subgroups and tables were discussed plenary through a large group conversation.



*Participants*

This study was embedded within the Living Lab in Ageing and Long-Term Care [18], which is a structural collaboration between multiple long-term care organisations and (vocational and bachelor) educational and research institutions. By connecting research, practice and education, its mission is "to contribute with scientific research to improving i) quality of life of older people and their families; ii) quality of care and iii) quality of work of those working in long-term care. Key working mechanisms are the Linking Pins and interdisciplinary partnership using a team science approach, with great scientific and societal impact" [18]. Study participants were only recruited from this living lab and were included if they were working within a nursing home or community care setting in the following occupations: expert regarding workplace learning (people who are frequently working with workplace learning or who received training on the subject); nursing staff or management working in nursing homes or community care; education expert; or client representation. If participants did not meet these requirements, they were excluded from participation. Purposeful sampling was used for the identification and selection of participants based on occupation and was done by the management of the participating organisations in cooperation with the researchers. We aimed to include 25 participants, and participants were approached and informed through e-mail. If they were interested, they received a save-the-date and invitation with additional information about the study. Participants were asked to register and approve participation by responding via e-mail.

*Procedure for World Café and data collection*

The World Café was held in September 2019 at of one of the participating long-term organisations. At the beginning of the World Café meeting, participants received an informed consent form and a questionnaire with demographic questions about gender, age, educational level, organisation and years of employment (in direct care), current position, and setting of employment (nursing home care or community care). All participants completed the documents if they agreed with the terms and conditions. The World Café continued with a presentation by a researcher from the Living-Lab in Ageing and Long-Term Care including the specific procedures and aims of that day. Participants were afterwards allocated to one of six discussion tables. Three out of six tables were appointed to nursing home care participants and three to community care

participants, ensuring a mix of occupations at each table. In total, six open questions (three for each setting) were discussed (Table I; Figure I). Participants took part in three rounds of 20 min each. After each round, all participants were allocated to another table where another question was discussed in a different group composition.

Each table was chaired by a table host (a researcher (MSc or PhD) from the Living-Lab in Ageing and Long-Term Care). The table host remained sitting at the same table and introduced the main question, led the conversation and made notes on a large tablecloth. Additionally, the table host ensured that audio recordings were made with the consent of the participants. To ensure that the views of all participants were taken into account, every round started with all participants writing down their own ideas about the question addressed at their specific table on a sticky note. These notes were then presented and put on the tablecloth that covered the table. After this first inventory, all participants explained their ideas as presented on the sticky notes. Afterwards, further elaboration took place. The table host wrote down information on the tablecloth.

After each round, the table host took a photo of the tablecloth. At the beginning of every new round, the table hosts summarised the dialogues of the previous rounds to the new group of participants at that table to ensure that there were few repetitions by participants and new information was gathered. More in-depth information was gathered during each round. After all rounds, every table host presented the main findings from their question to the whole group of participants and asked if participants had any additions.

Table I. Questions World Café for every specific table.

| Table number | Question |
|---|---|
| T1 | Q1. What individual conditions or competencies would nursing staff require to be able to establish workplace learning in nursing homes? |
| T2 | Q2. What does nursing staff require from their team to be able to establish workplace learning in nursing homes? |
| T3 | Q3. What does nursing staff require from their care manager and organisation to be able to establish workplace learning in nursing homes? |
| T4 | Q4. What individual conditions or competencies would nursing staff require to be able to establish workplace learning in community care? |
| T5 | Q5. What does nursing staff require from their team to be able to establish workplace learning in community care? |
| T6 | Q6. What does nursing staff require from their care manager and organisation to be able to establish workplace learning in community care? |

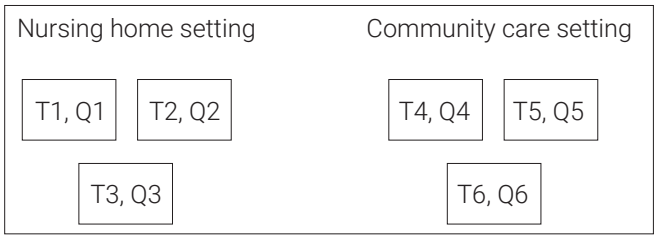


Figure I. Visualisation of tables (T) with corresponding questions (Q) (see also table I)



*Data analyses*

All notes on the tablecloths from the six tables were coded afterwards through open, axial and selective coding [19]. First, the notes were divided into theme-based categories by the first author to identify common themes within each specific question. Each question discussed at one table was analysed separately. This data analysis was repeated independently by the fourth author to ensure rigor. Discrepancies between the two analysts were afterwards discussed until consensus about all themes was reached. The audio recordings were then used to clarify the results, to get more detailed information about the conditions concerning the three different levels and to check the motivation participants gave during the World Café for certain statements. When notes on the tablecloths needed more detailed background information, audio recordings were also used for clarification. A summary of the findings was sent to all participants for a member-check. In addition to sending this summary, participants were asked if they had any feedback on or additions to the findings.

## Results

*Description of the study population*

In total 42 people participated in the World Café. Participants included nursing staff (N = 20), experts in workplace learning (N = 2), educational staff (N = 3), client representatives (N = 3) and experts in the field of work and organisation in healthcare organisations (N = 14). Insight into participants' demographic and occupational characteristics is given in Table II.

Table II. Participants' characteristics (n=42).

| Demographic characteristics | |
|---|---|
| Age in years (mean/range) | 46.1 (21-75) |
| Gender: Female (n) | 29 |
| Educational level | |
| *Middle-level applied education (n)* | *7* |
| *Higher professional education (n)* | *24* |
| *Scientific education (n)* | *11* |
| Occupational characteristics | |
| Years of experience in current position (mean/range) | 7.6 (0-35) |
| Years of experience in elderly care (mean/range) | 14.7 (0-45) |
| Working as a direct care professional (n; n=40) | 25 |
| Setting (n=37) | |
| *Nursing home (n)* | *24* |
| *Community care (n)* | *10* |
| *Both settings (n)* | *3* |

Participants were divided into a nursing home setting group and a community care setting group. Although the results showed some slightly different emphases for certain conditions while comparing both settings due to organisational differences, no major differences were found. Because of the absence of such differences, we describe the results of the nursing home setting and community care setting together, using the division into individual, team and organisational levels as a framework [20].

*Individual conditions required for workplace learning*

Three main themes were identified within this level: behavioural characteristics, knowledge and skills, and cooperation and communication. Figure II shows the conditions per theme.

Behavioural characteristics

The results show that an open positive attitude, including being open for change, is considered important for nurses within nursing staff teams to be able to stimulate workplace learning. Being able to feel safe and trusting others were mentioned by participants, and these were linked to the finding that it is important for nursing staff to feel they are allowed to make mistakes and thereby dare to show vulnerability without any consequences.

*Participant (community care setting):* *'And I also think you should not be afraid to make a mistake and not be afraid to speak up if you do. Because you learn from mistakes.'*



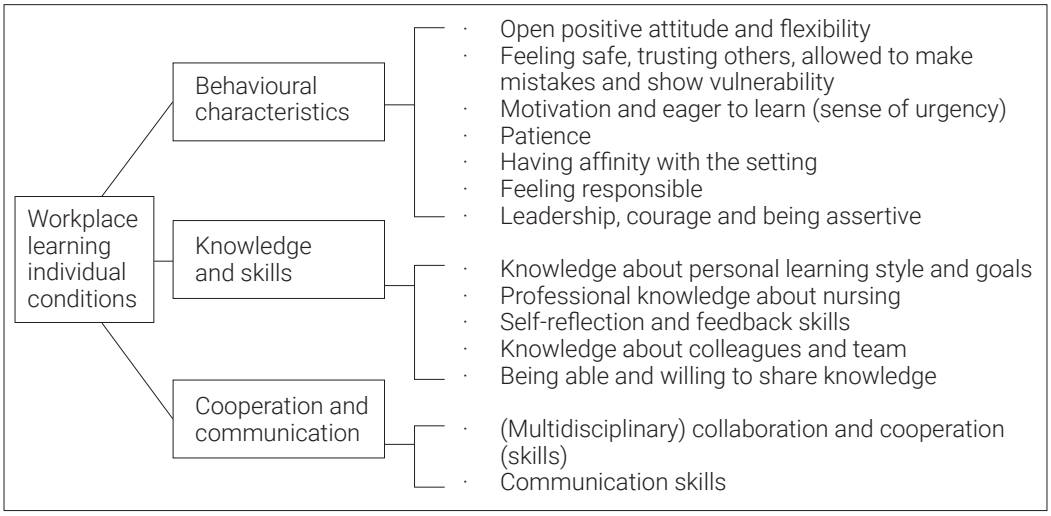


Figure II. Reported individual conditions for workplace learning.

Being allowed to make mistakes also comes with a certain level of flexibility to change, which is necessary for sustaining an open attitude. Furthermore, being motivated and eager to learn and change was important according to participants, because being motivated is related to nursing staff feeling a sense of urgency and thus finding it important to apply workplace learning.

*Participant (community care setting):* *'But I also think with regard to yourself, if you want to learn you will have to have an open attitude and be interested, of course. So someone should really have to go for it, you should "want" to do an internship in the community care setting. I once saw someone working within a nursing home setting and this person did not want to work there at all. I think in such cases, you do not have a good start and therefore won't be able to learn anything at all.'*

Additional conditions were patience, having an affinity with the specific setting in which one is working, feeling responsible, taking matters into one's own hands, leadership, showing courage and being assertive were found necessary individual conditions to be able to establish workplace learning.

Knowledge and skills

Participants stated that self knowledge, including knowing one's own learning style, individual learning goals and professional knowledge about how to perform one's work as a nurse are crucial for workplace learning. Additionally, the need for knowledge about new concepts such as workplace learning itself was reported.

> *Participant (community care setting): 'I think it (workplace learning) is still a relatively unfamiliar concept.*

To improve this factor of self-knowledge, nurses also need to have proper self-reflection and feedback skills to be able to reflect on their own actions and others. Additionally, for nurses to have insight about (the skills of) their colleagues in their team was found to be of importance, as this can help when it is necessary to seek help at work. Finally, being able and willing to share knowledge was also mentioned, as this also increases the possibility of cooperation with colleagues.

> *Participant (nursing home setting): 'You should have experienced colleagues present from all educational levels and there should be a willingness to share (knowledge) with each other. So without thinking: knowledge is power. So I will not tell you anything to make sure you know as much as I do.*

Cooperation and communication

Another result that emerged from this study was that nurses mentioned communication skills would be important for enabling a workplace learning approach.

> *Participant (community care setting): 'The right communication skills: people should not be afraid to ask for help … In relation to this there must also be a basis of trust.'*

*Team conditions required for workplace learning*

Four themes were identified with regard to team conditions: behavioural characteristics, room for development from colleagues, knowledge and skills, and cooperation and communication. Figure III shows the conditions that were reported for each theme.

Behavioural characteristics

With regard to the behavioural characteristics of colleagues, participants mentioned that it would be important for team members to be discrete, feel safe and that colleagues trust and

respect each other. This includes, for example, that colleagues share opinions and dare to show vulnerability without any consequences, but also for colleagues to accept that every individual is different so that everyone will be able to be themselves.



> ***Participant (nursing home setting):*** *'...but that I am also allowed to be myself. That I don't necessarily have to emulate colleagues, but that I am allowed to use not only my own expertise, but also my own learning, in my performance.*

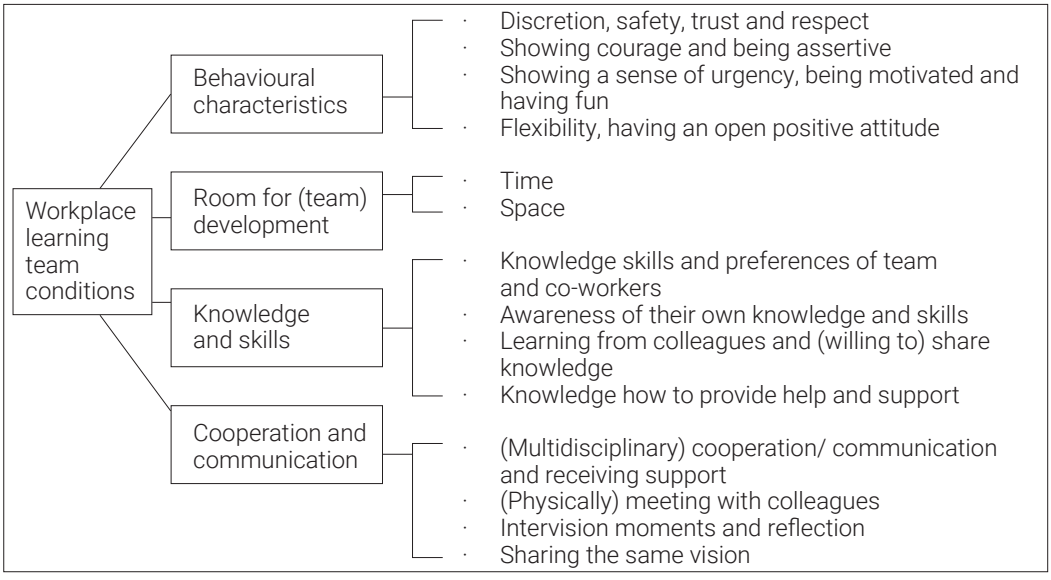


**Figure III.** Reported team conditions for workplace learning.

Another behavioural characteristic included showing courage and being assertive when necessary. Additionally, participants mentioned that it would be important for colleagues to show a sense of urgency for applying workplace learning as an approach, and that they are motivated and understand why it is important to use this approach. This includes flexibility, having an open positive attitude and being open for change. Finally, it was also found to be important for colleagues to have fun while performing their work, as this increases the motivation to work and learn.

Room for (team) development

It is regarded as important for nursing staff to be given time and space by colleagues to be able to apply workplace learning.

*Participant (nursing home setting):* *'It is often said in one sentence: "take time ... plan it", and this first sentence is then followed with "there is no time at the moment". That is done very often … and there will still be no time tomorrow'*

An example with regard to having space included having the freedom to apply workplace learning in the way that works for every individual.

Knowledge and skills

Taking into account knowledge and skills, participants mentioned the importance for colleagues to have knowledge about the available skills and preferences of colleagues within their team and of co-workers, but also for colleagues to be aware of their own knowledge and skills. Additionally, participants stated that nursing staff should be able to learn from colleagues. It was therefore added that colleagues need to be willing to help and share knowledge and skills, but they also need to know how to do so. Additionally, these knowledge and skills conditions for workplace learning are as important for older employees as for new employees (or trainees). There is often a gap between older employees and trainees or new employees in terms of being ready to work in a nursing staff team in real life practice. New employees often have less knowledge and skills and need to be trained to work within a certain team.

*Participant (community care setting):* *'And (an overview of) the need (of knowledge in a team) of course. You also need to have insight into the need to have certain knowledge in a team ... so you can zoom in on these needs.'*

Cooperation and communication

First, to stimulate workplace learning, participants mentioned (multidisciplinary) cooperation and communication of colleagues as being important. This includes receiving help from colleagues during daily work struggles and for colleagues to seek (face-to-face) contact with nurses.

*Participant (community care setting):* *'What I experience is that people in nursing home care have to run during work and afterwards they go straight home. And what I miss is that you meet each other (nursing staff), that people come by at the office ... having more contact with each other.'*

Participants also mentioned that, due to the increasing use of technology, actual face-to-face contact with colleagues has decreased and with this, the frequency at which communication

takes place has decreased. Additionally, colleagues being able to reflect about themselves, their co-workers and the team was found to be necessary to work with an approach such as workplace learning. Furthermore, for colleagues to make use of interviews and feedback to gain suggestions for improvement from colleagues would be of importance. However, colleagues should also know how to give positive feedback and compliments. Finally, for colleagues to share the same vision, support each other and to communicate in a clear way was found to be important for establishing workplace learning.



*Organisational conditions required for workplace learning*

Finally, organisational conditions were separated into three different themes: facilitating characteristics, context and culture, and cooperation and communication. Figure IV shows the conditions that were reported per theme.

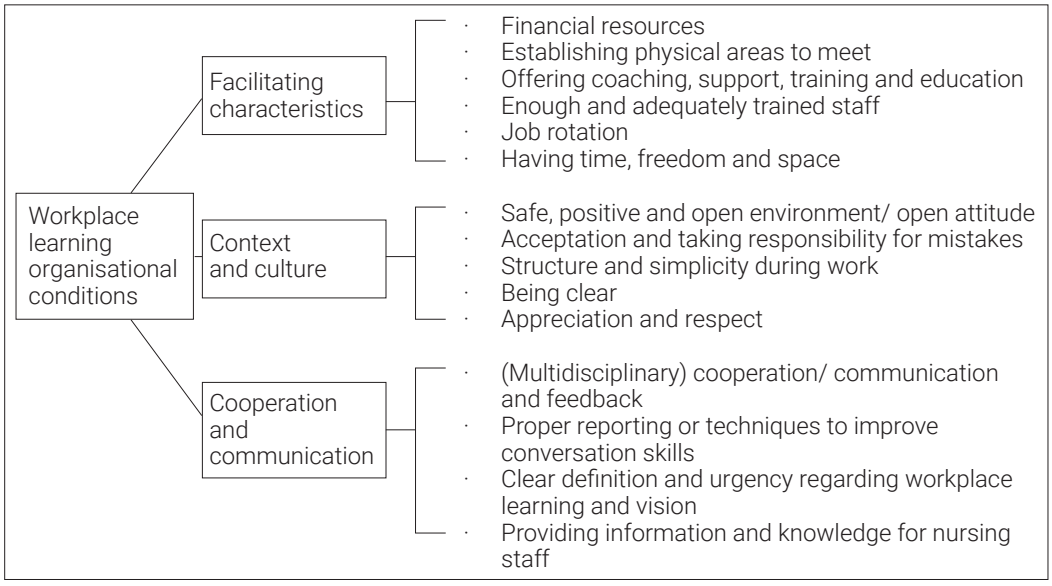


**Figure IV.** Reported organisational conditions for workplace learning.

Facilitating characteristics

Organisational facilitating characteristics mentioned by participants to promote the establishment of workplace learning for nursing staff included having financial resources, establishing physical areas to meet (especially for community care nursing staff teams), offering coaching and support, and providing time, freedom and space. For an organisation to provide

space means an investment in the staff through education and training, or to provide time by decreasing the workload. Additionally, sufficient and adequately trained staff who can help implement workplace learning should be provided by the organisation. Organisations should also take into account the different levels of education among nursing staff during the use of a workplace learning approach and the organisation should be aware of the preferences and opinions of the nursing staff. Finally, organisations should make sure that there is enough job rotation so nurses can learn from within different contexts, and enough training and education opportunities for nursing staff should be available. This should include (facilitating factors for) personalised ways of education and training.

> *Participant (nursing home setting): 'If I am someone who would like to learn things digitally, decent ICT support should be present. However, if I am someone who learns a lot while sparring with a colleague, then I will need a lot more time.*

Context and culture

According to participants, the organisation should provide a context and culture where workplace learning is stimulated by a safe, positive and open environment within the organisation and nursing teams where nursing staff can feel trust, show vulnerability and where mistakes can be made without any consequences. This includes accepting when things do not go as planned.

> *Participant (nursing home setting): 'I think it is also very important for the organisation, ... that nursing staff also feels that they are given the space to learn ... if you, as an employee, do not feel that you are also important, or that you are not looked after ... for example if at some point you are sick or whatever, and at that moment there is no concern about what you are going through or that you may be sick for a while, but that you actually have to resume your work that same day ... then you will not feel seen or heard, and how can you give care to someone else in such a learning climate?'*

An organisation needs to be open for change to establish workplace learning. However, participants also stated that structure and simplicity ('keeping it simple') while implementing workplace learning is needed for an approach such as workplace learning to be workable. Participants stated that to improve motivation, the organization should be clear about why, for example, workplace learning is implemented. Furthermore, other important conditions which should be provided by the organization were appreciation and respect. Organisations should also take responsibility for mistakes when necessary.

Cooperation and communication

To stimulate workplace learning, participants stated that (multidisciplinary) cooperation and communication between organisations and departments is important. Proper reporting or techniques to improve conversation skills could be tools provided by the organisation to improve this cooperation and communication. Additionally, an organisation should be clear about the definition of and urgency for workplace learning, about the vision of the organisation, and should provide enough information and knowledge for nursing staff to work with to gain clarity about the implementation of workplace learning within nursing teams.

> *Participant (community care setting): 'Well, I think that in order to learn well, it is important that they (nursing staff) have the right information available at all times. So having the right information when you are in the workplace and in particular the information availability regarding files, policy, agreements, medication, what has been done ... that it is very important.'*

Furthermore, an organisation should facilitate moments for providing positive as well as negative feedback for nursing staff by organising specific moments for reflection. However, employee feedback for the organization should be taken into account, as participants stated the importance of the organisation listening to employee preferences. Additionally, organisations should know what is happening within nursing staff teams and should stay informed.

## Discussion

This study identified necessary conditions at the individual, team and organisational levels for nursing staff to enhance workplace learning within the long-term care setting. Important conditions indicated were facilitating characteristics like room for (team) development, overall behavioural characteristics such as an open attitude towards workplace learning, context and cultural characteristics like feeling safe to learn and make mistakes, cooperation and communication such as giving feedback, and knowledge and skills like knowing (the situation in) the nursing staff team. Some conditions were similar for all levels, like using proper cooperation and communication. Furthermore, some of the reported conditions come from underlying problems within the specific field of long-term elderly care. An example of these problems is nursing staff being accountable to the higher management of a care organisation for every step taken, which causes the fear of making mistakes and therefore causes a barrier for learning at work. Other conditions (such as giving and receiving cooperative feedback and communication conditions) are applicable for many different kinds of work settings.

An important *facilitating characteristic* our research identified was being given enough time by the organization to be able to learn in the workplace. Time shortage at work is one of the most common problems mentioned within nursing healthcare, where staff shortages are common [21]. Nursing staff also indicated that the daily care workload was too high, which resulted in no time to invest in learning at work. These findings are in line with a survey of 1573 nursing staff professionals, more than half of whom experienced their work as busy, and over 18% experienced their work as too busy [21]. However, this lack of time could also be caused by having no control over one's work instead of actual time pressure [22]. For nurses, this is often the case, as they are less able to determine their own pace and order of their tasks. This could be caused by the unpredictability of caregiving, as nurses may, for example, abruptly need to change their work tasks when a crisis on the ward occurs, such as a patient breaking a hip. The feeling of being in control is key to managing time pressure. However, not only can this experience of lack of time be a barrier for establishing workplace learning, but experiencing a lack of time can cause nurses to omit fundamental conditions important for workplace learning that nurses think are less important, such as good communication [23].

*Cooperation and communication* conditions were both found to be fundamental conditions at the individual, team and organisational levels for workplace learning. Cooperation and communication are conditions which need to be broadly taken into account at every level of the organisation to establish workplace learning. These conditions also facilitate communication with the rest of the organisation, will unite an organisation and therefore create an overall view for an organisation, which are all also important, according to our findings [24]. However, because of the lack of time, nurses will omit these fundamental conditions. Choosing to omit communication actions also occurred within the RN4cast study, where nurses were asked to select actions that were necessary but left undone due to lack of time [23]. Additionally, workload and (lack of) time have been shown to have consequences for residents in the form of fragmented care [25]. This causes the need for more time management, clearly defining necessary actions which cannot be omitted and the need for support to prevent the omission of such actions by, for example, coaching the nursing staff. By creating a learning environment at work, time can actually be saved, as learning at work also means that there is opportunity for 'just-in-time' learning. Just-in-time learning means that the learning takes place anywhere and at any time [26]. This gives nursing staff the opportunity to learn directly in practice, with the results of their learning being immediately visible [27].

Other conditions standing out in our results included having an open attitude (*behavioural*

*characteristic*) and (psychological) safety (*context and culture condition*). The ability to feel safe (e.g. to speak up or give/receive feedback) at work and being able to make mistakes and use these as a learning opportunity without severe consequences were key conditions for workplace learning according to our research. Participants mentioned that making mistakes is a part of the learning process at work. Earlier research within a hospital setting reported the same results, where having a climate in an organization where employees feel safe and mistakes can be made is important for the functioning of teams [28]. Teams that openly report many errors function better at doing their job than teams that do not report errors. Teams that report errors also talk more about (and thus analyse) the errors they encountered, so an open climate prevails and learning opportunities arise naturally. According to Tevlin, Doherty and Traynor (2013), the fear of making mistakes arises from a 'blame culture', which can be present in the culture of a healthcare organisation. Looking at long-term elderly care, quality data regarding care are for example only sometimes being used for learning purposes, and are used more for management as external accountability towards third parties who keep track of the quality of care [29]. As a result, nursing staff sometimes become afraid of making mistakes and being accountable. Trust and room for learning and improvement (which includes being able to learn from mistakes) do not benefit from an excessive external accountability to standards set by third parties [30]. Therefore, a shift is needed from a *name, blame and shame* culture to a *no-blame* culture [31]. Within this culture, learning together and learning from mistakes should be possible. Having an open attitude (as an individual but also as a team or organisation) and sense of safety are therefore key conditions for establishing workplace learning in long-term elderly care. To improve this open communication and these (psychological) safety issues, training or coaching programmes can help to overcome these barriers at work and develop a more open and safe working climate [31].

Within community care, a number of social developments are taking place: a shift to ageing in place and more care provision at home, a greater emphasis on clients' own autonomy, a greater role for informal carers and greater emphasis on collaboration by different care and social workers due to care complexity [32]. Vulnerable elderly living at home often make use of various help and/or care providers [33]. Having multiple different care providers and insufficient information transfer often occurs and this can be a risk indicator for long-term elderly care patients [34]. Compared to a nursing home setting, a different context and culture is present as care professionals in community care work more individually and meet less often with colleagues. Additionally, within community care, the limits to time are strict, as a fixed number of hours are allocated to a client for providing care [35]. Even traveling from one client to the

next is charged as working time. This is not the case in nursing home care and makes it harder for care professionals working within community care to cooperate, communicate and learn together, while our research showed that time, cooperation and communication are all important conditions for workplace learning.

Although the results from our research indicated hardly any overall differences between the nursing home and community care setting for necessary conditions for workplace learning, a different approach is necessary because of the different way in which community care is organised. This should include extra attention to the conditions and community care situation mentioned in the paragraph above. It is important to establish time, occasions and opportunities for employees to meet, cooperate and communicate (such as giving and receiving feedback and moments for acquiring knowledge) and to learn together [36]. As team members in community care do not meet each other often, this means for example arranging a clear moment and place for nursing staff to meet and communicate. These meetings can include coaching meetings that vary from organising team (reflection) meetings or debriefings to assignments for acquiring knowledge, as *knowledge and skills* are also key conditions for workplace learning.

Additionally, the current situation around COVID-19 may have accelerated the presence of conditions for establishing workplace learning, because the pandemic was seen as an urgent, exceptional situation. For example, Hung and colleagues showed that there was a sense of increased solidarity between nursing staff to provide the best, safest care possible while also looking out for one another [37]. They also reported an increased level of teamwork as crucial to the nurses' success. Additionally, nursing staff felt they were well informed and supported by their organisation during the COVID-19 period. Regarding cooperation and communication between team members, nursing staff mentioned that a very good working atmosphere existed during the pandemic [38]. Although COVID-19 also shows negative effects, such as stress and high workload for nursing staff, it does also show that urgency is an important driving factor for improving conditions important for workplace learning.

*Strengths and limitations*

It was a strength of the World Café, that a large and heterogeneous group of participants was present and perspectives from different organisations regarding two different settings (nursing home and community care) were taken into account. The findings were also discussed in a plenary session, and a summary of the results was sent as an additional member-check to ensure rigor. We gave participants the opportunity to check the results, to add more information

and to check for data saturation. Including table hosts was another strength, as they made sure that new information was discussed in every round. This also facilitated the data saturation of the study. All participants reported their ideas regarding the specific questions of the World Café on a sticky note, which gave everyone the opportunity to explain their thoughts and ensured every opinion was included in the research.



Generalisability of the results may be limited and conclusions need to be drawn with caution due to the specific target group and setting chosen for this research. To get more in-depth information and motives concerning the conditions mentioned in our research, further research – including observations in practice (elderly care) or interviews – is needed to expand the present findings.

## Conclusion

Important conditions to enhance workplace learning within the long-term care setting on the individual, team and organisational levels for nursing staff include facilitating characteristics (e.g. time and room for [team] development), behavioural characteristics (e.g. an open attitude), context and culture (e.g. feeling safe), cooperation and communication (e.g. giving/receiving feedback) and knowledge and skills (e.g. acquiring knowledge from each other). To apply the conditions for workplace learning found in our research, insight into the current learning climate is necessary.

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# CHAPTER 3

## Measuring workplace learning conditions in long-term care

*A brief report*



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*Submitted*

# CHAPTER 4

## Workplace learning conditions in long-term care



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# CHAPTER 5

## A workplace learning intervention among long-term nursing staff: evaluating the process and experiences

*The Learning Innovation Nurses Climate (LINC) approach*



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# CHAPTER 6

# Facilitators for developing an interprofessional learning culture in nursing homes: a scoping review

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## Abstract

*Background*

Healthcare professionals in nursing homes face complex care demands and nursing staff shortages. As a result, nursing homes are transforming into home-like personalised facilities that deliver person-centred care. These challenges and changes require an interprofessional learning culture in nursing homes, but there is little understanding of the facilitators that contribute to developing such a culture. This scoping review aims to identify those facilitators.

*Methods*

A scoping review was performed in accordance with the JBI Manual for Evidence Synthesis (2020). The search was carried out in 2020–2021 in seven international databases (PubMed, Cochrane Library, CINAHL, Medline, Embase, PsycINFO and Web of Science). Two researchers independently extracted reported facilitators that contribute to an interprofessional learning culture in nursing homes. Then the researchers inductively clustered the extracted facilitators into categories.

*Results*

In total, 5,747 studies were identified. After removing duplicates and screening titles, abstracts and full texts, 13 studies that matched the inclusion criteria were included in this scoping review. We identified 40 facilitators and clustered them into eight categories: (1) shared language, (2) shared goals, (3) clear tasks and responsibilities, (4) learning and sharing knowledge, (5) work approaches, (6) facilitating and supporting change and creativity by the frontline manager, (7) an open attitude, and (8) a safe, respectful and transparent environment.

*Conclusion*

We found facilitators that could be used to discuss the current interprofessional learning culture in nursing homes and identify where improvements are required. Further research is needed to discover how to operationalise facilitators that develop an interprofessional learning culture in nursing homes and to gain insights into what works, for whom, to what extent and in what context.

## Introduction

Healthcare professionals in nursing homes have to deal with increasingly complex care demands and nursing staff shortages [1, 2]. In addition, nursing homes are transforming from medical-oriented institutional settings to more home-like personalised facilities. This leads to more patient-centred care that considers the residents' preferences and needs and integrates innovations and new technology into daily practice [3]. These changes require healthcare professionals to have specific expertise, flexibility, adaptability and the ability to work and learn more intensively together in daily practice [4, 5].



Insights from interprofessional collaborative behaviour frameworks and continuous learning practices are important to developing an interprofessional learning culture [6–9]. Such a culture requires an environment in which at least two healthcare professionals work and learn together to provide the best quality of care to nursing homes residents [7–9]. Methods for developing an interprofessional learning culture have been studied more often in hospitals, primary care and in education [10, 11]. For example, to stimulate collaboration within interprofessional teams, the Interprofessional Education Collaborative identified four core competency domains: values and ethics, roles and responsibilities, communication and teamwork, and team-based care to improve health outcomes [12].

The concept of 'just-in-time learning' is especially recommended for developing continuous learning practices in a nursing home setting. With just-in-time learning, learning takes place anywhere, anytime and anyhow using real-time complex cases in daily practice [13]. This combination of working and learning can also be described as creating a workplace culture in which informal learning takes place in daily practice with the aim of improving employees' competencies and leadership, enhancing their knowledge, and improving the quality of care and work [14–16]. However, it is challenging to develop an interprofessional learning culture in nursing homes.

To improve the interprofessional learning culture and person-centered care all professionals in nursing homes have to collaborate intensively together whereas we have to take into account that different settings may emphasise and organise interprofessional collaboration differently [5, 17, 18]. For example, Community Living Centres in the United States use a quality improvement approach called CONCERT to bring together diverse members of the healthcare team. CONCERT includes strategies to learn from the bright spots, observe; collaborate in huddles; and keep it bite-sized [19]. However, professionals from various healthcare professions

should be involved in patient-centred care, they are often organised in separate teams and may therefore hardly know each other. Professionals are more often focused on their own tasks and responsibilities and are unaware of the roles or tasks of other professions [20]. An example of this siloed work is the work of nursing teams, mainly consisted of licensed practical nurses and the work of physicians and allied health professionals. Both set their own care goals or treatment goals, separately from each other. This is contrary to person-centred care and underlines the importance of interprofessional collaboration [21]. Moreover, professionals are not yet accustomed to sharing their knowledge and expertise, which can reduce the quality of care for nursing home residents [20].

An interprofessional learning culture in nursing homes must be developed to improve the quality of patient-centred care, fulfil increasingly complex care demands, and deal with staff shortages. However, there has been no overview made of the facilitators that contribute to developing such a culture. The purpose of this scoping review is to outline those facilitators.

## Methods

A scoping review was performed in accordance with the method in the JBI Manual for Evidence Synthesis (2020) [22].

### *Strategy, search terms and search string*

The literature search for this scoping review was carried out from January 2020 to January 2021. The search strategy comprised subsequent steps as proposed in the JBI manual [22]. First, we used the PubMed and CINAHL databases to identify relevant keywords for our search string. Then we used those keywords to build an elaborated search string. A research librarian from HAN University of Applied Sciences and two researchers (FV, MvL) helped to define terminology by searching for synonyms and broadening definitions in the search strategy. The search string was discussed with all authors. The search strategy was improved to increase its sensitivity and reduce the risk of missing relevant studies (Table I). The search was performed in seven databases: PubMed, Cochrane Library, CINAHL, Medline, Embase, PsycINFO and Web of Science.

Table I. Search terms

| Term | Keyword(s) |
|---|---|
| Interprofessional learning culture* | Interprofessional collaboration<br>Interprofessional practice<br>Interprofessional working<br>Integrated collaboration<br>Collaborative practice<br>Learning culture<br>Working culture<br>Workplace learning<br>Just-in-time learning<br>Informal learning<br>Workplace training<br>Workplace-based learning<br>Workplace education |
| Nursing home* | Convalescence home<br>Long-term care<br>Residential care<br>Care home<br>Rehabilitation centre<br>Geriatric ambulatory centre<br>Elderly house |

*Interprofessional learning culture: "Patient Care Team"[mesh] OR multidisciplinar*[ti] OR Interdisciplinar*[ti] OR collaborat*[ti] OR interprofessional*[ti] OR working culture*[ti] OR learning culture*[ti] OR Patient Care Team*[ti] OR Medical Care Team*[ti] OR Healthcare Team*[ti] OR Health Care Team*[ti] OR intraprofessional[ti] OR intra professional[ti] OR intra sector*[ti] OR inter sector*[ti] OR Care coordinat* OR intra sector*[ti] OR Integrated care[ti] OR integrated health[ti] OR coordinated care[ti] OR comprehensive care[ti] OR seamless care[ti] OR transmural care[ti] *Nursing Home: "Nursing Homes"[mesh] OR convalescene home*[tiab] OR long term car*[tiab] or residential car*[tiab] OR nursing home*[tiab] OR care home*[tiab] OR geriatric ambulator*[tiab] OR rehabilitation centre*[tiab] OR rehabilitation center*[tiab] OR elderly hous*[tiab]

*Inclusion criteria*

Types of participants

The search was limited to the interprofessional team working at a nursing home. An interprofessional team is defined as a team in which at least two healthcare professionals from different professions intensively work and learn together in daily practice to manage residents' care and share their specialised knowledge, skills or abilities to innovate this care [23, 24].

Concept

We were interested in the facilitators that contribute to creating an interprofessional learning culture in nursing homes. Facilitators were defined as any relevant factors, elements or actions.

Context

The context for this scoping review includes nursing homes and their working healthcare staff. A nursing home is a public or private residential care home that provides a high level of long-term personal nursing and medical care for older adults and chronically ill patients who cannot care for themselves properly [25].

Types of evidence sources

We included quantitative, qualitative, action research and mixed method designs to retrieve findings published in the last five years (2016–2021). Case reports (n = 1 studies) were excluded because of a possible lack of generalisability. We excluded information from books, book chapters and (newspaper) interviews because we were only interested in results from peer-reviewed studies. Studies in English or Dutch were selected.

Search strategy

The identified records were imported from ©2021 Rayyan into EndNote X8 for further investigation and selection. The first step in EndNote X8 was to remove all the duplicates in seven steps, based on author, year, title, pages, volume, issue, journal and secondary title. Bramer et al. published a detailed description of these steps [26]. After duplicates were removed, one researcher (FV) independently screened the titles and abstracts of the initial studies based on the inclusion criteria for possible inclusion in this scoping review. Each study was marked 'inclusion', 'exclusion' or 'maybe'. Two researchers (FV and MvL) discussed the studies marked 'inclusion' or 'maybe'. For the two studies where no consensus was reached, two independent researchers (AvV, JM) were asked to assess them. After this process, two full text articles were selected randomly and independently analysed by the two authors (FV, MvL) for calibration regarding inclusion. Findings from and (dis)agreements about these two studies were discussed before the other full text articles were analysed by both authors.

*Data extraction and analysis*

First, we extracted characteristics from all the included studies. Second, we extracted data about the facilitators for developing an interprofessional learning culture in nursing homes. These facilitators were extracted independently by two researchers (FV, MvL) and placed in a

table to create a first overview.

After extraction, the two researchers discussed the similarities and differences in their independent findings. During this discussion, they analysed each finding regarding the facilitators and clustered the findings into categories. The researchers focused on finding categories and reporting these categories until no more new categories were found. After the results were assigned to categories and the two researchers reached agreement, the results were presented to two other researchers for agreement and a final check (AvV, JM). Disagreements were discussed until consensus was reached.



## Results

In total, 5,747 studies were found. After removing duplicates, 3,834 studies remained and were screened based on title and abstract. After screening and discussion between the researchers, 73 studies were assessed for eligibility for full-text screening. After this process, 13 studies were included in this scoping review (Figure I).

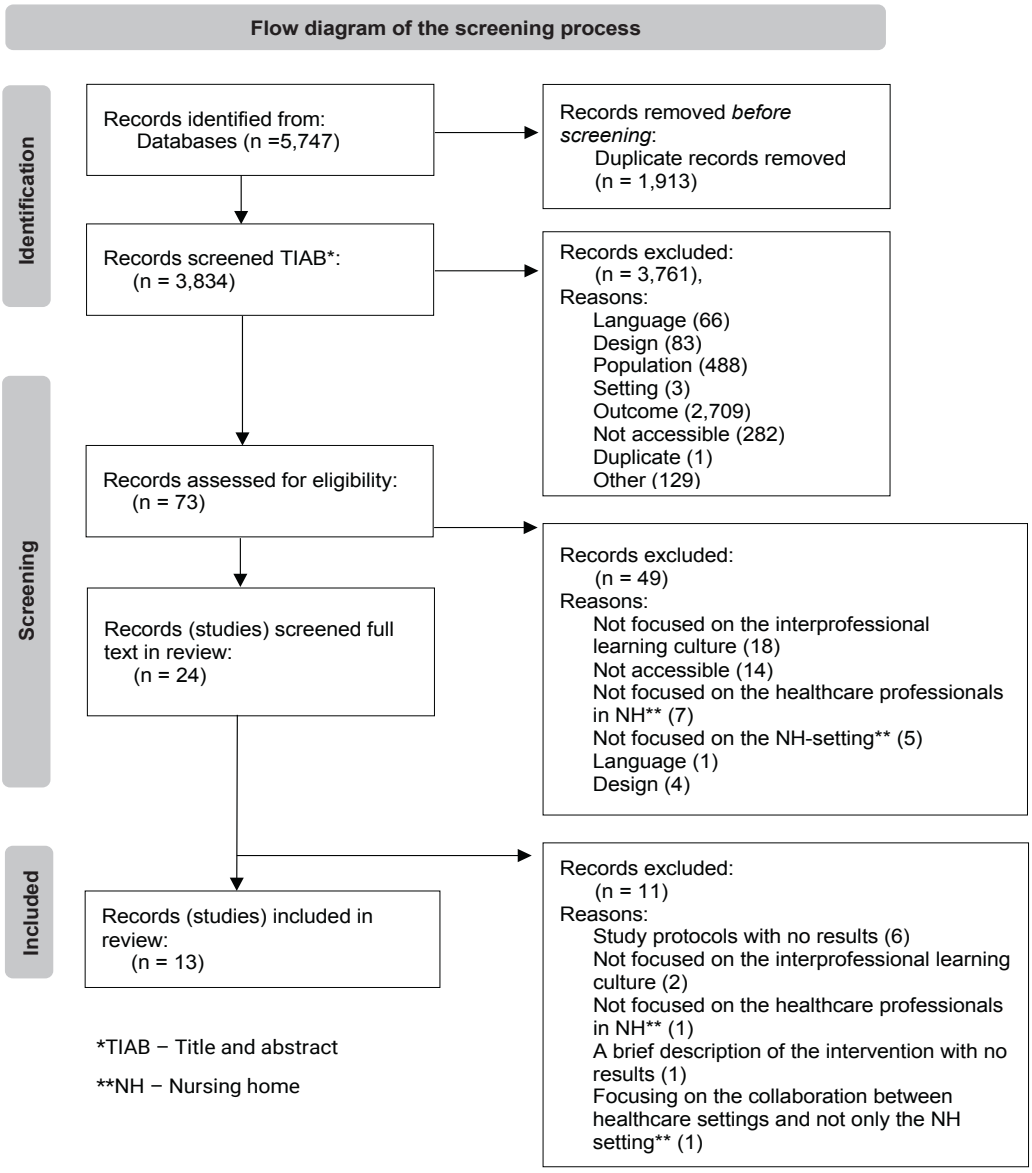


Figure I. Flow diagram of the screening process

*Characteristics of the included studies*

Thirteen studies were included. They originated from different countries and most applied a qualitative design (two studies included action research and one study used a quantitative design; see Table II).

Table II. Characteristics of the included studies

| # | Author, year and country | Design | Population studied | Aim of the study |
|---|---|---|---|---|
| 1 | *Anvik et al., 2020, Norway*[27] | Qualitative | Healthcare professionals | To investigate the conditions under which learning and innovation occur in nursing homes. |
| 2 | *Fleischmann et al., 2017, Germany*[28] | Qualitative | Healthcare professionals | To explore how nurses experience general practitioners' visits to the nursing home and interprofessional communication and collaboration. |
| 3 | *Folkman et al., 2019, Norway*[29] | Qualitative | Frontline managers collaborating daily with healthcare professionals | To examine how frontline managers facilitate interprofessional collaboration in three health care services, with a special focus on managing social educators and nurses in their daily practice. |
| 4 | *Goller et al., 2019, Germany*[30] | Qualitative | Nurses and nurse aides | To investigate learning and development processes of newly employed nurse aides. |
| 5 | *Hurlock-Chorostecki et al., 2016, Canada*[31] | Qualitative | Healthcare professionals | To identify, from the healthcare professionals' perspective, nurse practitioner strategies used to enhance interprofessional care. |
| 6 | *Khemai et al., 2020, The Netherlands*[32] | Quantitative | Healthcare professionals | To examine the perceptions and needs of nurses regarding collaboration with other nurses, other professionals, people with dementia, and loved ones, and to investigate whether these perceptions and needs differ between healthcare settings and among three levels of nursing. |
| 7 | *Kim et al., 2020, South Korea*[33] | Qualitative | Practitioners and professors | To develop a conceptual framework to structure the shared roles and tasks of interdisciplinary teams for efficient function-focused care of nursing home residents. |
| 8 | *Müller et al, 2018, Germany*[34] | Qualitative | Healthcare professionals | To develop and test measures to improve collaboration and communication between nurses and general practitioners in this setting. |
| 9 | *O'Leary 2016, United States*[35] | Action research | Healthcare professionals | To outline aspects of an action research study examining the emergence of effective communication, shared decision-making and knowledge sharing within change management teams. |
| 10 | *Park et al., 2019, South Korea*[36] | Qualitative | Healthcare professionals | To clarify the regularity of sharing commonly used information and knowledge across disciplines, and to develop a practical care strategy specialised for nursing homes. |

*table continues*

| # | Author, year and country | Design | Population studied | Aim of the study |
|---|---|---|---|---|
| 11 | *Stühlinger et al., 2019, Switzerland*[37] | Qualitative | Healthcare professionals in rehabilitation homes | To test the relationship of a shared language in interprofessional healthcare teams. |
| 12 | *Tsakitzidis., et al., 2017, Belgium*[38] | Qualitative | Healthcare professionals | To gain insights into professionals' perceptions of interprofessional collaboration in nursing homes and the factors that affect interprofessional collaboration. |
| 13 | *Venturato et al., 2019, Australia*[39] | Action research | Healthcare professionals | To address the need for sustainable culture change in residential aged care by developing and piloting a novel workforce development intervention (Towards Organisational Culture Change). |

*Categories*

We identified 40 facilitators in the 13 studies. These were clustered into eight categories: (1) shared language, (2) shared goals, (3) clear tasks and responsibilities, (4) learning and sharing knowledge, (5) work approaches, (6) facilitating and supporting change and creativity by the frontline manager, (7) an open attitude, and (8) a safe, respectful and transparent environment (Table III).

Table III. Facilitators for developing an interprofessional learning culture

| Categories | Facilitators |
|---|---|
| Shared language | - Consult with colleagues within your own discipline, in other disciplines and outside your organisation<br>- Use a communication protocol<br>- Improve communication skills regarding residents<br>- Create and develop new relationships<br>- Focus on how to communicate<br>- Focus on a shared language<br>- Use name badges |
| Shared goals | - Create a common vision<br>- Use a framework (e.g., function-focused care) |
| Clear tasks and responsibilities | - Have well-known tasks and responsibilities for all professionals on a team<br>- Use the nurse to communicate to the physician(s)<br>- Have transparent definitions of tasks<br>- Use formal time schedules to discuss each other's roles<br>- Have clear roles |

*table continues*

| Categories | Facilitators |
|---|---|
| Learning and sharing knowledge | - Deliver training to improve knowledge about how to collaborate interprofessionally<br>- Develop knowledge and associated skills about culture change<br>- Work with Evidence Based Practice (EBP), discuss care rationales and share knowledge<br>- Use a preliminary care model or a change cycle<br>- Use knowledge to identify residents' issues<br>- Guide the learning activities<br>- Structure learning activities<br>- Improve skills and support |
| Work approaches | - Contextualise the nursing home as a site for learning and innovation<br>- Work with a holistic approach and continuous assessment<br>- Focus on practical information about how to guide people<br>- Use practice-based learning opportunities<br>- Take time to focus on the resident<br>- Use a systematic approach |
| The frontline manager facilitating and supporting change and creativity | - Frontline managers must have innovative solutions<br>- Frontline managers must have clear leadership |
| An open attitude | - Pay attention to social and formal processes<br>- Have an open and flexible way of working<br>- Have a natural attitude and be involved |
| A safe, respectful and transparent environment | - Use a concept to focus on safety (e.g., the Team Psychological Safety Concept)<br>- Have an open and transparent perspective on each other<br>- Appreciate and respect each other<br>- Create an environment in which people feel safe<br>- Listen to each other's opinions<br>- Negotiate respectfully<br>- Create a safe team climate |



Shared language

Seven studies reported findings related to having a shared language [28, 29, 31, 32, 34, 36, 37]. Each professional has their own expertise, background and educational level, which often results in different professional languages and phrases being used to describe the same phenomena. This makes it challenging to communicate and coordinate in an interprofessional team.

It is recommended that a shared language be used in the interprofessional teams [28, 29, 36, 37] and with colleagues outside the organisation [32]. Further, using a communication protocol like the Situation, Background, Assessment and Recommendation (SBAR) protocol (28), facilitating communication competencies and paying attention to how a team communicates will improve the interprofessional learning culture [28, 29, 31, 32, 34, 36, 37].

Shared goals

Two studies reported that creating shared goals with professionals from different professions is important to an interprofessional learning culture [33, 38]. For example, shared goals could relate to improving quality of care and quality of life for older residents [33]. These goals should be balanced across different professions.

To help establish these shared goals, they could be set through a process mediated by a coordinator. Kim et al. (2020) found that using a theoretical approach can help to translate goals into practice (e.g., the function-focused care approach in nursing homes) [33]. Interprofessional education also may help in developing a common vision and goals related to person-centred care [38].

Clear tasks and responsibilities

Three studies reported that it is important to have clear roles, tasks and responsibilities in an interprofessional team that are well-known to all professionals on the team [29, 31, 32]. For example, it can be beneficial to have the nurse on the interprofessional team take a clear role as central communicator with the physician(s) involved [31]. In this role, the nurse is a central point of contact for other professionals or colleagues and could bridge the gap in language, knowledge and skills between professionals on an interprofessional team. It was observed that the holistic point of view of nursing helped the nurse practitioner create clarity in care plans and implement them with all professionals involved [31]. Another study mentioned that it is important to schedule formal meetings to discuss each other's roles and tasks in daily practice [32].

Learning and sharing knowledge

Six studies described facilitators related to learning skills and exchanging knowledge (e.g., improving skills and knowledge about the residents' diseases and support for how to guide people when working together as one team) [30–32, 37–39]. To improve knowledge sharing on an interprofessional team, team members need to: 1) work with evidence-based practice, and 2) be aware and discuss the care rationales [31].

Furthermore, learning activities need to be structured [30]. This could help team members better understand the learning and development process of (new) colleagues and how to facilitate this development process. Two studies mentioned developing professionals' knowledge and skills regarding culture change using a change cycle, which can foster an interprofessional learning climate [37, 39]. For example, the QPAR (Question, Plan, Act and Reflect) cycle was mentioned in

one article [39]. Professionals confirmed that using a change cycle, such as QPAR, improves the structure in a meeting and improves working together as one team on one specific important subject [39].

Additionally, offering pedagogically rich learning activities together with goal-directed guidance and direct guidance can foster an interprofessional learning climate. An example from one study was having more experienced nurses introduce new tasks to other healthcare professionals [30]. The instructing nurse explains what has to be done and why, and then the experienced nurse models that task. After the healthcare professionals who are being trained observe the task, they perform it by trying to imitate the more experienced nurse. Their performance is assessed by an instructor and feedback is given if necessary.



Work approaches

Work approaches that differ from the often-classic approaches used in healthcare are needed to create a profound interprofessional learning culture [27–29, 31–33, 36, 37]. These might include working with a holistic approach and with continuous assessment to stay up to date about a resident's health status [33]. To work holistically and with continuous assessment, it is recommended that all relevant information be shared among all professionals on a team [29]. Furthermore, frontline managers should 'use a systematic approach to exploit the opportunity presented by the variety of competence available' to improve interprofessional working [29].

Nursing homes also must be a place for practice-based learning opportunities. This requires a work approach in which informal and formal learning situations are created with a focus on learning in everyday practice and on contributing practical information to the interprofessional learning culture [27]. For example, nurses need practical information and advice about aligning care agreements between healthcare providers [32].

Further, one study concluded that 'time to focus on the patient' contributes to interprofessional care. However, healthcare professionals stated that they did not have this time in daily care [31]. It also can be helpful to involve nurses in general practitioners' visits to nursing homes. This can prevent delays when there is a sudden need for assistance or information [28]. However, in some cases, a nurse's attendance can also be seen as undesirable. For example, a confidential atmosphere in a private conversation (without a nurse present) can boost the general practitioner's relationship with the resident and result in more productive performance [28].

Facilitating and supporting change and creativity by the frontline manager

One study showed that managers play an important role in coaching individuals to translate their ideas and beliefs into interprofessional efforts in practice [29]. Managers must be able to facilitate change and support creativity in a setting where many healthcare professionals work together with their own responsibilities, experiences and tasks. Managers have to pay attention to using different competencies, adopting and implementing new approaches and responsibilities, and the division of roles and tasks [29].

An open attitude

Two studies reported on the attitudes of healthcare professionals [29, 38]. Ideally, these attitudes should be characterised by equality rather than hierarchy. They also need to be open, holistic and flexible [29] Frontline managers described this open and holistic way of working as more innovative than continuing to emphasise the differences between professionals and fixed responsibilities and duties [29]. It is important to avoid conflicts arising from ideas about formal and social processes in the collaboration [38].

A safe, respectful and transparent environment

Five studies mentioned the importance of creating a safe and respectful environment in an interprofessional learning culture in nursing homes [31, 32, 34, 35, 37]. For example, nurses and general practitioners indicate that mutual respect and appreciation of their different professions improve their mutual relationship [34]. Khemai et al. (2020) showed that one of 17 reported needs in interprofessional collaborations was the need to feel safe about implementing care agreements that have been made [32]. Having respectful negotiations was another important factor that influences collaboration [31].

Additionally, a safe team climate was mentioned as an important influencing factor, and the Team Psychological Safety (TPS) concept contributes to a safe team climate [35, 37]. TPS has been defined as 'an atmosphere within a team where individuals feel comfortable engaging in discussion and reflection without fear of censure' [35]. This concept includes the possibility for all the professionals on a team to raise issues or problems in daily practice [35]. Finally, there is a need for transparency about diagnosis and therapy, reliable, clear and well-substantiated reports, and a clear clarification of responsibilities and expectations from each other [31, 34].

## Discussion

In this scoping review, we identified 40 facilitators clustered in eight categories: (1) shared language, (2) shared goals, (3) clear tasks and responsibilities, (4) learning and sharing knowledge, (5) work approaches, (6) facilitating and supporting change and creativity by the frontline manager, (7) an open attitude, and (8) a safe, respectful and transparent environment. These categories form a basis for developing and improving an interprofessional learning culture in nursing homes.



Several categories specific to the nursing home setting correspond to elements of interprofessional educational and competency frameworks in other healthcare settings. For example, the Canadian Interprofessional Health Collaborative Framework (2010) states that three categories are essential to an interprofessional learning culture: 1) communication in a team, 2) clear roles, tasks and responsibilities and 3) using each other's knowledge [40]. Furthermore, three best practice models of interprofessional education for healthcare professionals, focusing on healthcare students as future interprofessional team members, report similar categories such as responsibility, coordination, communication, trust, respect and sharing knowledge with each other [41].

When zooming in on the nursing home setting, there was more emphasis on facilitators about having a shared language, having a safe respectful and transparent environment, and stimulating learning and sharing knowledge. The greater attention to these facilitators can be explained by the challenges of daily care in nursing homes. We discuss three explanations.

First, many nursing homes only provide room and board care to residents who are aided by minimally trained or untrained staff and receive little or no input from physicians or nurses [42]. As the complexity of the demand for nursing care increases, more well-trained certified nurse assistants (CNA), nurses and professionals from other professions (including medical and allied healthcare professionals) should be added to the skill mix to maintain high-quality care. For example, a study in the US shows that adding well-trained CNA's (with increased requirements for CNA training) are able to improve the quality of long-term care [43]. However, adding well-trained professionals to a team is challenging. Great variety in education levels could hinder the use of each other's knowledge and expertise (e.g. because each professional speaks their own professional language used in their own field or within their own education level) [18]. It is crucial to pay attention to the mix of education levels and different views on good quality of care.

Second, the way nursing homes are organised influences collaborating and learning within an interprofessional team. The different settings may emphasise and organise interprofessional collaboration differently. For example, nursing home staff in the Netherlands and England work closely with other medical healthcare professionals (such as physicians) and could form a team. In other countries, for example in Germany, nursing homes mainly employ nursing staff/assistants. The nurses could consult the physician, but there is no frequent or daily collaboration with a general physician [44]. In that case, professionals from other professions are available remotely from other organisations [42]. This may make it difficult for various professionals to learn together and share knowledge because they do not commonly work intensively together, and it could be more difficult to understand each other's daily work. From the organisational perspective, it is important to facilitate interprofessional learning (e.g., by contextualising the nursing home as a site for learning and innovation, or working with a holistic approach and continuous assessment) to improve quality of care or to use systematic approaches to work together [27, 29].

Finally, current daily practices could explain the attention paid to learning and sharing knowledge. Nursing homes increasingly face challenges in delivering complex, home-like, person-centred care with limited staff. Making time for interprofessional learning is not usually part of the culture in nursing homes, nor is critically reflective behaviour by professionals [3, 20]. Thus, there is still a culture of name, blame and shame in many nursing homes [45]. Such an atmosphere could hinder professionals from communicating openly or sharing insecurities or mistakes. Culture change is difficult and takes time.

The 40 facilitators found in this review can contribute to developing and strengthening an interprofessional learning culture in nursing homes.

*Limitations*

Although we found 13 studies including 40 facilitators for developing an interprofessional learning culture in nursing homes, the operationalisations of the facilitators described in the extracted studies were limited. Therefore, the meaning of a specific facilitator was not always clear. For example, the studies mentioned the importance of focusing on tasks and responsibilities, but they included no detailed description of how or with which specific methods and for whom to do that. Thereby, we included studies with facilitators that contribute to the development of an interprofessional learning culture. It is possible that we missed relevant studies due this inclusion criteria. Some studies operationalise facilitators regarding of quality

improvements in collaboration instead of interprofessional learning cultures. For example, in the Hartmann et al. study where same facilitators were mentioned to improve quality of care, communication, collaboration and positive work experiences which are also important elements for an interprofessional learning culture in nursing homes [19].

*Recommendations*

Further research should focus on operationalising the facilitators in more detail and explaining how they contribute to an interprofessional learning culture in nursing homes. This should include more detail about the preconditions and results on patient, professional and organisational levels. We need to create more understanding about what works, for whom, to what extent and in what context.

This information would make it possible to build and evaluate a practical guide about how to develop an interprofessional learning culture in nursing homes. Such a guide could help people evaluate a situation with regard to the facilitators or categories, and help them assess where improvements need to be made in a nursing home's interprofessional learning culture. It is important to look at an organisation's specific context and tailor the facilitators to it. This tailoring should be bottom-up in consultation and co-creation with the entire interprofessional team. Doing it in this way will make healthcare professionals more motivated to work on establishing an interprofessional learning culture [36].



## Conclusion

This scoping review identified eight categories of facilitators that can support the development of an interprofessional learning culture in nursing homes. These categories include (1) shared language, (2) shared goals, (3) clear tasks and responsibilities, (4) learning and sharing knowledge, (5) work approaches, (6) facilitating and supporting change and creativity by the frontline manager, (7) an open attitude, and (8) a safe, respectful and transparent environment. Further research is needed to operationalise these facilitators in more detail so we can gain insights into what works, for whom, to what extent and in what context.

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# CHAPTER 7

# General discussion

The main objective of this dissertation was to investigate how to foster systematic learning and quality improvement at work in long-term nursing care. Specifically, we pursued the following goals:

1) Provide insight into workplace learning conditions for nursing staff to enhance continuous learning and improvement in long-term care settings.
2) Develop a Learning Innovation Nurses Climate (LINC) approach to stimulate continuous learning and quality improvement.
3) Evaluate the implementation of the LINC approach and get insight into the first experiences of the nurses and coaches involved.
4) Provide insight into factors to facilitate interprofessional learning in a long-term care setting.

This chapter presents the main findings of this dissertation and addresses methodological and theoretical considerations. Furthermore, it offers suggestions for future directions for practice, research and education.

## Main findings

*Workplace learning conditions*

We determined five main themes regarding workplace learning conditions for long-term care: (1) facilitating characteristics such as giving time and room for development, (2) behavioural characteristics (e.g. having an open attitude), (3) context and culture conditions like feeling safe, (4) cooperation and communication conditions like giving/receiving feedback and (5) knowledge and skills like acquiring knowledge from each other (Chapter 2). To assess these conditions, we constructed a workplace learning scale for both the nursing home and home care settings that can be used as a starting point for learning and innovation (Chapter 3). The scale essentially consists of the existing HILL model questionnaire and the Culture of Care barometer, which both cover all workplace learning conditions as presented in Chapter 2. Five items were added by an educational nursing expert group regarding, for example, the opportunity to learn from colleagues or communication between colleagues. Based on the scores on the scale, teams identified workplace learning conditions that they wanted to improve. The scale was used in long-term care nursing staff teams in the Netherlands, and the results of the study indicated that nursing staff perceive workplace learning conditions to be moderately present in practice. However, the conditions concerning adequate team support and management, collaboration and hybrid learning appear to be more present in the home care setting than in the nursing home setting (Chapter 4).

LINC approach

The LINC approach was developed to facilitate bottom-up workplace learning in long-term nursing teams (Chapter 5). This approach involves teams choosing their own quality improvement goals based on available nurse-sensitive data and workplace learning challenges identified by our workplace learning scale. The teams then use a plan–do–check–act (PDCA) cycle to systematically work on these quality improvement goals, which is supported by continuous coaching. The key elements of the LINC approach include:

1) *A workplace learning scale* to measure workplace learning conditions,
2) *A focus on nurse-sensitive data to stimulate learning and innovation* in which the nursing team decides what is most urgent to work on,
3) *The continuous learning and improving cycle (PDCA cycle)* to continuously work on self-chosen goals and actions,
4) *Coaching* focusing on team dynamics and guidance in using the PDCA cycle and
5) *A bottom-up approach* as nursing teams choose their own goals and methods to reach these goals.



*Evaluation of the LINC approach*

Although the results of the evaluation showed that the implementation of the key elements of the LINC approach mainly succeeded, using a bottom-up approach (including taking the lead), choosing SMART goals, and using nurse-sensitive data to learn from appeared to be difficult for the teams. This was especially the case in the nursing home setting, where team members preferred more steering from a manager (Chapter 5). Nursing home teams preferred working on team dynamics or culture-based topics instead of themes with available nurse-sensitive data. Team members with higher levels of education and self-directed teams (mostly home care teams), however, preferred a more bottom-up approach and did want to work with nurse-sensitive data. Concerning the perceived added value of the LINC approach, it was found that the bottom-up approach stimulated nurses' feeling of ownership and leadership, as they decided on their own goals and actions and could shape the implementation process.

*Factors to facilitate interprofessional learning in a long-term care setting*

Collaborating with other disciplines is important in complex and dynamic care settings, so we identified facilitators for developing an interprofessional learning culture in nursing homes in a scoping review (Chapter 6). The main factors retrieved relate to a shared language; having clear tasks and responsibilities; and having a safe, respectful and transparent environment. The facilitators for an interprofessional learning culture are in line with the workplace learning

conditions we found in the World Café dialogue (Chapter 2).

## Methodological considerations

In this section we discuss three methodological issues regarding the studies in this dissertation: external influencing factors, reflection on the workplace learning scale and reflection on the framework used for the process evaluation.

*External influencing factors*

COVID-19 played an important role during the implementation of the LINC approach. On the one hand, our research showed that COVID-19 may have accelerated the implementation of the approach, as nursing staff had to take a leading role, be innovative and adaptive in a quickly critical changing environment. This may have stimulated the workplace learning processes. For example, one home care team stated that COVID-19 facilitated the implementation of the LINC approach because it provided clarity and possibilities for necessary adaptations (e.g. improving reablement) they wanted to address during the COVID-19 period. In most teams, though, COVID-19 had a negative impact, as it caused stress and a high emotional and physical burden on the care workers, which led to sick leave, burnout and compassion fatigue among personnel [1-3]. One could say that the focus during the COVID-19 period, especially in the beginning, was more on surviving and delivering the best care possible in this specific situation than it was on, for example, improving the quality of care [1]. This period possibly affected the implementation and experiences of using the LINC approach; it also extended the research period, because we were not able to support nursing staff intensively during this period. Procedural changes that we made because of the COVID-19 situation included more online coaching meetings and restricting meetings and interviews with only a part of the nursing staff team. This effected the first included team in particular. While this may have had an impact on the overall findings, this impact is likely to have been modest as it involved only a small proportion of the study population.

*Reflection on the workplace learning scale*

Our purpose was to construct a concise workplace learning scale that could quickly assess the perceived presence of all relevant workplace learning conditions as identified during our World Café. After a literature search and consultation of research experts, we ended up with two already available measurement tools: the HILL model questionnaire and the Culture of Care Barometer [4, 5].

The HILL model questionnaire was originally developed for and mainly used in educational settings, although it has been validated in a general organisation setting [4, 6]. The original English Culture of Care Barometer, was validated in acute mental health and community services settings [7]. A study by Maassen et al. though showed the reliability and validity of the Dutch version of the original four-factor version of the Culture of Care Barometer in a hospital setting [8]. This version is used for our research. To adhere to the validation of the original measurement tools, no adjustments were made to the type of scale (Likert scale). Using complete available instruments raised points of concern though. For example, the compilation of these two tools led to a scale that was longer and more time-consuming to administer than intended (63 items and around 11 minutes to fill out). Other concerns were the rating scale or the setting in which the instruments were developed (e.g. non-healthcare setting for the HILL model questionnaire). The answers of nursing team members in Chapter 4 showed that most of the conditions were perceived to be moderately present and were mostly in the middle (between 3 and 4 on a 5-point Likert scale). A possible reason for these moderate scores could be that a 5-point Likert scale was used; in this scale, the score of 3 as a mid-point could be interpreted by respondents as no opinion, do not care, unsure, neutral, equal/both or neither [9]. Perhaps a scale with no clear mid-point, such as a 4- or 6-point Likert scale, could have prevented participants from selecting the mid-point option [9-11]. Finally, there was an unequal distribution of items across different conditions. A condition with more items (e.g. "trust: values, culture and communication", including 12 items) may exhibit higher internal consistency and may potentially dominate the overall score. This imbalance can also affect the content validity, as certain constructs might be overrepresented, while others are underrepresented. A study published by Maassen et al. showed it might be interesting to also look at a five-factor model (instead of the original four-factor model included in the Culture of Care Barometer) for a Dutch healthcare setting [8]; this five-factor model includes "organisational support", "leadership", "collegiality and teamwork", "relationship with manager" and "employee influence and development". These factors include a more balanced number of items per factor. In future studies, it might also be interesting to determine if the five-factor version of the Culture of Car Barometer fits our workplace learning scale better than the four-factor version.

Although at first sight these two instruments seemed to form a fitting basis for our workplace learning scale, improvements regarding the scale are necessary to map workplace learning in long-term care quickly and efficiently. For example, the workplace learning scale includes two originally validated measurement tools, but the validity of the new total scale, including the five extra questions, has not been investigated yet for the long-term care setting. Additionally,

further research should be conducted to see if the scale can be made shorter (reducing number of items), this can be done by for instance conducting a factor analysis.

*Reflection on the Moore framework and data collection for the process evaluation*

We used the Moore framework for our process evaluation [12]. This framework builds on three themes (implementation, mechanisms and context) as described in the MRC guidance. Process evaluations and frameworks can provide insight not only into whether an intervention is implemented correctly, but also into the mechanisms through which implementation is achieved and how the intervention can be incorporated continuously into practice afterwards [12]. The Moore framework assesses conceptual fidelity, dose (delivered and received), reach, adaptation and context, as well as the mechanisms of impact; it assumes a clear conceptual distinction between these concepts [12]. However, during our analysis of the process data, we found that the concepts overlapped and were not as distinguishable from each other as they might initially appear. This was especially the case for the concepts *dose* and *reach*, as well as the concepts *context* and *mechanisms of impact*. Additionally, in using the Moore framework during the data collection, we hoped to obtain a complete picture of process implementation and the experiences of nursing staff using the LINC approach. However, we found that, by using the framework, we gathered results that sometimes lacked in-depth information about underlying motivations or details. This is in line with earlier research reporting that frameworks to evaluate implementation processes often provide limited information about how to execute the evaluation, as the themes addressed in these frameworks are often too generic to provide background information necessary for such evaluation [13]. In retrospect, it would have been useful if we executed additional evaluation techniques, such as focus groups, to gain more in-depth insight into the implementation process and experiences.

## Theoretical considerations

In this section we discuss the theoretical considerations for the empowerment of nurses in and the different roles of nurses in long-term care.

*Empowerment of nurses*

At the start of this research, we hypothesised that a bottom-up approach would motivate nursing staff as they may experience more ownership and leadership in guiding their own learning and quality improvement processes based on nurse-sensitive data. This approach is closely linked to other initiatives such as Magnet hospitals, which originated in the USA and have the goal of

improving the working environment of nursing staff to enhance patient care [14]. In Magnet Hospitals, nurses are empowered not only to learn and take the lead on improving patient care based upon nurse-sensitive data but also to be the drivers of innovation [15]. This indicates that the key elements of the Magnet Hospital initiative closely resemble the key elements of the LINC approach. Studies have indicated the impact of Magnet Hospitals on improved quality of care and more opportunities for nurses to participate in shared governance and decision-making [15, 16]. However, it has also been stated that the causality and consistency of effects of Magnet Hospitals need to be investigated in greater depth to draw long-term conclusions [15]. The same holds for the LINC approach, and although initiatives such as the LINC approach seem promising, further investigation is necessary to draw more firm conclusions about the effects on the empowerment of nurses.



The importance of leadership of nurses is also emphasised in the Netherlands, as the Dutch government introduced a legislation in 2023 stating that healthcare professionals (including nursing staff) should get the opportunity to influence policy making when they have the opinion that this improves the quality of care [17]. Although leadership is promising for improving care, in daily practice, nurses often do not get the opportunity to take leadership in using nurse-sensitive data to improve quality of care as they often do not have access to these data [18].

*The different roles of nurses*

The Dutch National Quality Standard for Long-term Care states the importance of learning in practice and aims to let professionals systematically learn and develop in nursing home organisations to improve the quality of care – for example, by using nurse-sensitive data [19]. If nurses take the lead in using nurse-sensitive data and if the data is accessible, the question arises of whether they can interpret the data and use it to learn and improve their practice [18]. In our research, we found that nursing staff experienced difficulties in formulating SMART goals to improve quality of care, use nurse-sensitive data or execute other evidence-based process steps that require research-oriented knowledge and skills. These competencies belong to certain professional roles (e.g. being a reflective professional or quality promotor) that are expected of nursing staff in the Netherlands, also called the CanMEDS roles [20, 21]. The original purpose of the CanMEDS roles is to give an overview of the necessary knowledge and skills for a nurse and to prepare nurses for clinical practice in an ever-changing healthcare environment. CanMEDS roles include being a healthcare provider, communicator, collaborative partner, reflective professional, health promoter, organiser, professional and quality promoter [20, 21]. The expectations regarding these roles depend on the level of education the nurses have received.

Nurses with a bachelor's degree should be able to work on tasks within the same CanMEDS roles that require higher competencies compared to nurses with a vocational education. However, earlier research found that the research-oriented skills necessary for being a reflective professional tend to weaken in daily practice and that such competencies form a scant part of nurses' daily work [22]. This finding, combined with the results of our research (e.g. nurses experiencing difficulties in research-oriented knowledge and skills such as formulating SMART goals or working with nurse-sensitive data), shows that there is still room for improvement. This improvement can include extra training in research-oriented knowledge and skills, so nurses can comply with goals set in, for example, the Dutch National Quality Standard for Long-term Care. Recently, a new education profile for bachelor's level nursing students has been published, which incorporates this kind of improvements [23]. For example, the new profile describes the need of a greater focus on developing nurses' leadership, research and problem-solving skills.

## Future directions

Long-term care organisations should facilitate learning and improvement at work. The LINC approach can support this process for nursing staff; however, lessons learned from our research should be considered when taking further steps to foster continuous learning and improvement in long-term care. We describe the most important lessons below.

*Practice*

- Nurse-sensitive data should be made more accessible and usable for nursing staff so that they are available for nurses and that they can learn from the data, work with the data and improve the data. This means that data are shared with nursing staff and presented in a way that nurses can work through an improvement cycle and work with the data. Training should made available for nursing staff so they can interpret and use nurse-sensitive data to improve quality of care. Additionally, long-term care organisation should facilitate a policy and culture in which being a reflective professional is promoted.
- When implementing a learning and improvement intervention in long-term care, the specific characteristics of every nursing team should be identified, including differences in competencies (e.g. educational level) or setting (e.g. nursing home setting versus home care setting). Tailoring approaches towards these characteristics is key for efficient implementation, as interventions should fit the target group.
- Nurses and managers should agree about their roles during the learning and improvement process. This includes making agreements with management staff to make sure they

let nursing staff take the lead in executing a learning and improvement process. Such agreements would help to establish a bottom-up approach if this is preferred by the nursing team.

- Including interprofessional learning – and thus including other disciplines in the learning process – is important for a long-term care setting (including medical and allied healthcare professionals) as it can help nursing staff in their learning and improvement process. Interprofessional learning extends knowledge and opportunities to share skills and learn from each other. Other healthcare professionals should therefore, for example, join workplace learning processes to set and reach quality improvement goals together with nursing teams.



*Research*

- We developed the LINC approach and tested its implementation in five nursing teams. We did not test its effects on workplace learning conditions or clinical outcomes. We therefore cannot draw conclusions about whether a learning and improvement climate was created with a direct effect on quality of care. We suggest determining, for example, what effect a bottom-up approach has on leadership within the nursing team or on improving nurse-sensitive data including patient outcomes (and thereby quality of care). To draw conclusions about the effect of using the LINC approach, a controlled study (e.g. including more long-term care nursing staff teams) should be conducted.
- Due to COVID-19, we implemented LINC in a small sample from different settings, so we cannot make statements about the general applicability of the LINC approach. During further research, it is thus important to test the LINC approach in a larger sample with more nursing staff teams from different long-term care organisations (and settings) to determine the general applicability of the approach.
- At this point, it is difficult to conclude whether our version of the workplace learning scale was the best measurement tool for nursing staff to assess workplace learning conditions. Our current scale includes the HILL model questionnaire items and the original four-factor model for the Culture of Care Barometer. However, the validity of the new total scale, including the five extra questions, has not yet been investigated for the long-term care setting, and this could be a useful step for further research. Additionally, further research should include analyses to study a possible reduction of items.
- An interprofessional viewpoint should be considered when establishing workplace learning approaches. Although we focused our research on nursing staff teams as a target group, we acknowledge that interprofessional collaboration is becoming more important to keep up with changes and complexities in health care [24]. Further research could be based on our

study of facilitators for developing an interprofessional learning culture in nursing homes and it should integrate stakeholders such as medical specialists, GPs, informal caregivers and older people.

*Education*

- Engaging and motivating nursing students from all educational levels about what workplace learning is and how to adapt workplace learning later on in practice is important to make learning in practice a more common approach among newly graduated nurses.
- Nursing students at all educational levels should receive extra training to improve research-oriented knowledge and skills, such as how to use improvement cycles (such as a PDCA cycle) and nurse-sensitive data for learning and improvement purposes [25]. However, differences in educational level (and competencies) should be considered, where bachelor's level nursing students should be trained more intensively regarding CanMEDS roles that correspond with using research-oriented knowledge and skills (e.g. being a reflective professional) than vocational education nursing students.

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# ADDENDA

## Summary

Long-term care is confronted with several interrelated challenges, including significant staff shortages, high workload and the increasing complexity of care due to the prolonged stay of older people in their own homes. These challenges urge nurses to continuously engage in learning and adopting an innovative mindset. Earlier research has indicated that the workplace serves as the primary place for learning, reflection and deepening one's understanding. The more closely learning is integrated into the workplace, the greater the likelihood of continuous visible improvements in quality of care. Additionally, research has demonstrated that the traditional method of classroom-based learning is not always sufficient, and the application of an informal form of learning, such as workplace learning, seems to be more effective. An important key element is a bottom-up approach that includes the empowerment of nurses to choose and shape their own learning processes. Through this approach, nurses can effectively address challenges observed in their work, taking ownership of what they wish to improve and how they can achieve their goal. This, in turn, enhances the motivation of nurses to persist in learning and improving quality of care.

The main objective of this dissertation is to investigate how to foster systematic learning and quality improvement at work in long-term nursing care. Specifically, we pursue the following goals:

1) Provide insight into workplace learning conditions for nursing staff to enhance continuous learning and improvement in long-term care settings.
2) Develop a Learning Innovation Nurses Climate (LINC) approach to stimulate continuous learning and quality improvement.
3) Evaluate the implementation of the LINC approach and get insight into the first experiences of the nurses and coaches involved.
4) Provide insight into factors to facilitate interprofessional learning in a long-term care setting.

*1) Workplace learning conditions*

For Chapter 2, the objective was to provide insight into the key conditions necessary for nurses to realise workplace learning in long-term care. This study consisted of a qualitative approach using a World Café method, which involves group discussions where various issues are explored in different groups to gather detailed information on a specific topic. Group discussions were held separately for the nursing home setting and the home care setting. The results revealed various themes regarding workplace learning conditions. These included facilitating characteristics (e.g. receiving time and space for [team] development), behavioural characteristics (e.g. having

an open attitude towards learning), context and culture (e.g. feeling safe), collaboration and communication (e.g. being able to give/receive feedback) and knowledge and skills (e.g. being able to acquire knowledge from each other). No significant differences were observed in important conditions between the nursing home setting and the home care setting.

Subsequently, in Chapter 3, we constructed a scale capable of assessing the workplace learning conditions found in Chapter 2. The workplace learning scale was constructed in several steps, including the results we found during the World Café and drawing on (literature) research into previously developed and suitable scales. These scales were evaluated to determine their suitability for our previously identified workplace learning conditions. Next, a draft scale was created and presented to experts in the field of workplace learning, and the scale was tested for feasibility (e.g. completion time and comprehensibility) with nursing staff. The scale was ultimately based on the existing Culture of Care Barometer and the HILL model questionnaire. Five additional items were added after presenting the scale to the experts. These items were (1) learning from colleagues, (2) learning within the work environment, (3) having sufficient information to perform work tasks, (4) possessing knowledge and skills related to the profession to perform work tasks and (5) the presence of adequate communication among colleagues.

In Chapter 4, the workplace learning scale was used in practice among 135 nurses from both nursing home and home care settings. This allowed us to capture a first glimpse into the extent to which workplace learning conditions were perceived to be present in long-term care organisations in the Netherlands. Overall, we can see that nursing staff perceive workplace learning conditions to be moderately present in their long-term care nursing team, but that there is also still room for improvement regarding, for example, adequate communication as a condition for workplace learning. Furthermore, we see low variance in the scores for workplace learning conditions, as all conditions yielded average scores ranging between 3 and 4 on a 5-point Likert scale. Further insights regarding the validity (e.g. construct validity) of the scale as a tool specifically for nursing staff to assess the workplace learning conditions is necessary.

*2) Developing the LINC approach*

The LINC approach was then further developed. The LINC approach is a method we developed for nurses in long-term care organisations (both nursing home and home care) to facilitate continuous learning and improvement in practice in the form of workplace learning. This is done through the use of self-selected nurse-sensitive data (e.g. data about fall incidents or employee satisfaction). Nurses determine themselves what they will work on and how they will do this

collaboratively using a plan–do–check–act (PDCA) cycle. Additionally, coaching is an important element for supporting nursing teams in home care or nursing home during the implementation of the LINC approach.

The LINC approach comprises several core elements:

1) *A workplace learning scale* to assess workplace learning conditions,
2) *A focus on nurse-sensitive data to stimulate learning and innovation* in which the nursing team decides what is most urgent to work on,
3) *The continuous learning and improving cycle (PDCA cycle)* to continuously work on self-chosen goals and actions,
4) *Coaching* focusing on team dynamics and guidance in using the PDCA cycle and
5) *A bottom-up approach* in which nursing teams choose their own goals and process to reach these goals.

*3) Evaluation of the implementation process*

In Chapter 5, the implementation of the LINC approach was evaluated in five different nursing staff teams, both from nursing home (n = 2) and home care (n = 3) settings. All teams completed a LINC cycle over the course of several months, depending on the goals set by the team. During this period, we continuously collected information on the implementation process and the experiences of team members with the LINC approach. For this, we executed evaluation (focus group) interviews with the nursing teams, logs on the course of LINC approach meetings or nursing-team characteristics, interviews with LINC coaches and evaluation forms filled out by team coaches. Although the results indicated that the implementation of the LINC approach mainly succeeded, using a bottom-up approach and taking the lead for nursing staff appeared to be difficult, especially in teams within the nursing home setting. These teams did also not perceive the urgency of working with nurse-sensitive data and preferred to focus on team-building topics. The bottom-up approach was sometimes challenging to realise due to managerial oversight. On the other hand, some teams preferred more steering from a coach or manager during the LINC process. Regarding context and impact mechanisms, factors such as the setting (nursing home versus home care), the COVID-19 pandemic, the team characteristics of the nurses, working conditions and managerial involvement influenced the implementation of the LINC approach. While coaching within the LINC project was perceived as positive and clear, teams sometimes struggled to formulate SMART goals. Finally, LINC seemed to create a sense of awareness of nurses' own possibilities and responsibility to improve their daily practice.

*4) Factors to facilitate interprofessional learning in a long-term care setting*

In Chapter 6, we examined interprofessional collaboration and workplace learning. Collaboration with other disciplines is crucial for quality care in a complex and dynamic healthcare setting. This research identified facilitating factors for developing an interprofessional learning culture in nursing homes. We found facilitating factors such as having a shared language; clear roles and responsibilities; and a safe, respectful and transparent environment. These facilitators also align with our earlier findings from Chapter 2.

*5) General discussion*

Chapter 7 summarises the main findings of this thesis. It reflects on the methodological and theoretical considerations of the various studies. Methodological considerations include, for example, the alterations we made in the LINC approach because of the COVID-19 pandemic or possible improvements to the workplace learning scale. Theoretical considerations for the empowerment of nurses in continuous learning and improvements in long-term care are also described. In addition, practical and policy implications provide directions for promoting the workplace learning process within long-term elderly care. Finally, suggestions are given for future research.

## Samenvatting

De langdurige zorg staat voor diverse uitdagingen, zoals een groot personeelstekort, een hoge werkdruk en toenemende complexiteit van zorg doordat ouderen langer thuis blijven wonen. Deze omstandigheden vragen van verpleegkundigen en verzorgenden een voortdurende bereidheid om te leren en op innovatieve wijze oplossingen te bedenken. Eerder onderzoek heeft aangetoond dat de werkplek de belangrijkste plaats is om te leren en te reflecteren. Hoe meer het leren is geïntegreerd in de werkplek, hoe groter de kans op voortdurende verbeteringen in de kwaliteit van zorg. Daarnaast heeft onderzoek aangetoond dat de traditionele methode van 'klassikaal leren' niet altijd voldoende is en dat de toepassing van een informele vorm van leren, zoals leren op de werkplek, effectiever lijkt te zijn. Een belangrijk sleutelelement is een bottom-up benadering die verpleegkundigen en verzorgenden in staat stelt hun eigen leerprocessen te kiezen en vorm te geven. Door deze aanpak kunnen verpleegkundigen en verzorgenden uitdagingen die ze in hun werk tegenkomen effectief aanpakken, waarbij ze zelf bepalen wat ze willen verbeteren en hoe ze hun doel kunnen bereiken. Dit verhoogt vervolgens ook hun motivatie om te blijven leren en de kwaliteit van zorg te verbeteren.

Het hoofddoel van dit proefschrift is om te onderzoeken hoe systematisch leren en kwaliteitsverbetering op het werk gestimuleerd kunnen worden in de langdurige ouderenzorg. Specifiek streven we de volgende doelen na:

1) Inzicht verschaffen in voorwaarden omtrent leren op de werkplek voor verpleegkundigen en verzorgenden om continu leren en verbeteren in de langdurige ouderenzorg te bevorderen.
2) Een Learning Innovation Nurses Climate (LINC) aanpak ontwikkelen om continu leren en kwaliteitsverbetering te stimuleren.
3) De implementatie van deze LINC aanpak evalueren en inzicht krijgen in de eerste ervaringen van de betrokken verpleegkundigen en verzorgenden, en coaches.
4) Inzicht geven in factoren om interprofessioneel leren in een langdurige zorgsetting te faciliteren.

*1) Voorwaarden voor werkplekleren*

Voor **hoofdstuk 2** is het doel om inzicht te geven in de belangrijkste voorwaarden die verpleegkundigen en verzorgenden nodig hebben om werkplekleren in de langdurige zorg te realiseren. Dit onderzoek bestond uit een kwalitatieve benadering met behulp van een Wereldcafé methode. Tijdens deze methode werden verschillende onderwerpen achtereenvolgens in meerdere kleine groepen uitgediept om gedetailleerde informatie over een specifiek onderwerp te verzamelen. Deze groepsdiscussies werden afzonderlijk gehouden voor de verpleeghuissetting

en de thuiszorgsetting. De resultaten onthulden verschillende thema's met betrekking tot voorwaarden voor leren op de werkplek. Deze omvatten faciliterende kenmerken (bijvoorbeeld tijd en ruimte krijgen voor [team]ontwikkeling), gedragskenmerken (onder andere een open houding hebben ten opzichte van leren), context en cultuur (denk aan het hebben van een veilig gevoel), samenwerking en communicatie (bijvoorbeeld feedback kunnen geven/ontvangen) en kennis en vaardigheden (zoals kennis van elkaar kunnen verwerven). Er werden geen belangrijke verschillen waargenomen in belangrijke voorwaarden tussen de verpleeghuissetting en de thuiszorgsetting.

Vervolgens wordt in **hoofdstuk 3** beschreven hoe we een schaal hebben geconstrueerd waarmee we de aanwezigheid van voorwaarden voor werkplekleren in kaart kunnen brengen. Deze werkplekleren schaal is in verschillende stappen geconstrueerd, waarbij gebruik is gemaakt van de resultaten die we tijdens het Wereldcafé hebben gevonden en van (literatuur)onderzoek naar eerder ontwikkelde schalen. Deze reeds beschikbare schalen werden beoordeeld op hun geschiktheid om onze eerder geïdentificeerde voorwaarden voor werkplekleren te meten. Vervolgens werd een nieuwe schaal samengesteld en voorgelegd aan experts op het gebied van werkplekleren, en werd de schaal getest op haalbaarheid (aspecten als invultijd en begrijpelijkheid van vragen) onder verpleegkundigen en verzorgenden. De nieuw geconstrueerde schaal bestaat grotendeels uit twee bestaande vragenlijsten: de Culture of Care Barometer en de vragenlijst van het HILL-model. Vijf extra items werden toegevoegd na consultatie van de experts. Deze items waren (1) leren van collega's, (2) leren binnen de werkomgeving, (3) beschikken over voldoende informatie om werktaken uit te voeren, (4) beschikken over kennis en vaardigheden met betrekking tot het beroep om werktaken uit te voeren en (5) de aanwezigheid van adequate communicatie tussen collega's onderling.

In **hoofdstuk 4** beschrijven we de afname van de werkplekleren schaal bij 135 verpleegkundigen en verzorgenden uit zowel verpleeghuizen als uit de thuiszorg. Dit gaf ons een eerste inzicht in de mate waarin werkplekleren als aanwezig wordt ervaren binnen organisaties voor langdurige zorg in Nederland. Over het algemeen ervaren verpleegkundigen en verzorgenden de voorwaarden voor werkplekleren binnen hun team als matig aanwezig. Er is echter nog ruimte voor verbetering, bijvoorbeeld op het gebied van effectieve communicatie. Daarnaast zien we weinig variatie in de scores op de voorwaarden voor werkplekleren, aangezien ze vrijwel allemaal scores behaalden tussen de 3 en 4 op een 5-punts Likertschaal. Verder onderzoek naar de psychometrische eigenschappen van de schaal is gewenst.

*2) De LINC aanpak ontwikkelen*

De LINC aanpak is een door ons ontwikkelde methode voor verpleegkundigen en verzorgenden in de langdurige ouderenzorg (zowel verpleeghuis als thuiszorg) om continu leren en verbeteren in de praktijk te faciliteren in de vorm van werkplekleren. Dit gebeurt door het gebruik van kwaliteitsdata (bijvoorbeeld data over valincidenten of medewerkerstevredenheid). Verpleegkundigen en verzorgenden bepalen zelf waar ze gezamenlijk aan gaan werken met behulp van een plan-do-check-act (PDCA) cyclus. Ze worden daarbij ondersteund door coaches.

De LINC aanpak bestaat uit verschillende kernelementen:

1) Een werkplekleren schaal om de ervaren aanwezigheid van voorwaarden voor werkplekleren te beoordelen,
2) Een focus op kwaliteitsdata om leren en innoveren te stimuleren waarbij het team van verpleegkundigen en verzorgenden beslist wat het meest urgent is om aan te werken,
3) De continue leer- en verbetercyclus (PDCA-cyclus) om continu te werken aan zelfgekozen doelen en acties,
4) Coaching gericht op teamdynamiek en begeleiding bij het gebruik van de PDCA-cyclus,
5) Een bottom-up benadering waarbij teams van verpleegkundigen en verzorgenden hun eigen doelen en proces kiezen om deze doelen te bereiken.

*3) Evaluatie van het implementatieproces*

In **hoofdstuk 5** wordt de implementatie van de LINC aanpak geëvalueerd in vijf verschillende teams van verpleegkundigen en verzorgenden, zowel in verpleeghuizen (n = 2) als in de thuiszorg (n = 3). Alle teams voltooiden een LINC cyclus gedurende een aantal maanden, afhankelijk van de doelen die het team had gesteld. Gedurende deze periode verzamelden we voortdurend informatie over het implementatieproces en de ervaringen van teamleden met de LINC aanpak. Om dit te evalueren voerden we focusgroep-interviews uit met de teams van verpleegkundigen en verzorgenden, hielden we logboeken bij over de voortgang van LINC bijeenkomsten en kenmerken van de teams, interviewden we LINC coaches, en vulden teamcoaches evaluatieformulieren in. Hoewel de resultaten aangaven dat de implementatie van de LINC aanpak over het algemeen succesvol was, bleek het voor verpleegkundigen en verzorgenden lastig om een bottom-up benadering te hanteren en zelf de leiding te nemen, met name in teams binnen de verpleeghuisomgeving. Deze teams zagen minder de urgentie van het werken met kwaliteitsdata, maar gaven meer de voorkeur aan onderwerpen omtrent teambuilding. Het toepassen van een bottom-up benadering bleek ook soms lastig te realiseren door de mate van toezicht vanuit het management. Aan de andere kant gaven sommige teams

(met name in de verpleeghuissetting) de voorkeur aan meer sturing door een coach of manager tijdens het LINC proces. Wat betreft de context en de impactmechanismen waren factoren zoals de setting (verpleeghuis versus thuiszorg), de COVID-19 pandemie, de teamkenmerken, de werkomstandigheden, en de betrokkenheid van het management van invloed op de implementatie van de LINC aanpak. Hoewel coaching binnen het LINC project als positief en duidelijk werd ervaren, hadden teams soms moeite met het formuleren van SMART-doelen. Tot slot leek de LINC aanpak bewustwording te creëren van de eigen mogelijkheden en verantwoordelijkheid van verpleegkundigen en verzorgenden om hun dagelijkse praktijk te verbeteren.

*4) Factoren die interprofessioneel leren in de langdurige zorg bevorderen*

In hoofdstuk 6 beschrijven we interprofessionele samenwerking en leren op de werkplek. Samenwerking met andere disciplines is cruciaal voor kwaliteitszorg in een complexe en dynamische zorgsetting. Dit onderzoek identificeerde bevorderende factoren voor het ontwikkelen van een interprofessionele leercultuur in verpleeghuizen. We vonden faciliterende factoren zoals het hebben van een gedeelde taal; duidelijke rollen en verantwoordelijkheden; en een veilige, respectvolle en transparante omgeving. Deze faciliterende factoren komen ook overeen met onze eerdere bevindingen uit hoofdstuk 2.

*5) Algemene discussie*

Hoofdstuk 7 vat de belangrijkste bevindingen van dit proefschrift samen. Het reflecteert op enkele methodologische uitdagingen in de uitgevoerde studies en theoretische overwegingen naar aanleiding van de bevindingen uit de studies. Methodologische overwegingen zijn bijvoorbeeld de wijzigingen die we hebben aangebracht in de LINC aanpak vanwege de COVID-19 pandemie of mogelijke verbeteringen aan de werkplekleren schaal. Theoretische overwegingen omtrent leiderschap van verpleegkundigen en verzorgenden in continu leren en verbeteringen in de langdurige zorg worden ook beschreven. Daarnaast geven we praktische implicaties en beleidsimplicaties welke richting geven aan het bevorderen van het werkplekleren in de langdurige ouderenzorg. Tot slot worden suggesties gedaan voor toekomstig onderzoek.

## Impact

*Research*

The main goal of this research was to stimulate continuous learning and improvement in long-term nursing care through the development and implementation of the Learning Innovation Nurses Climate (LINC) approach. The LINC approach aims to support nursing teams in improving their team dynamics, quality of care and leadership through continuous learning and development.

We developed and learnt several things through our research, namely (1) we identified important workplace learning conditions, (2) we developed the LINC approach, (3) we evaluated the implementation of the LINC approach and the experiences of using this approach and (4) We identified factors to facilitate interprofessional learning in a long-term care setting.

For successful implementation of an approach such as LINC, it is necessary that the organisation facilitates the implementation of key elements (e.g. a bottom-up approach), and that the approach is tailored to the setting and target group where it is implemented. Furthermore, it became clear during this research and the implementation of the LINC approach that this approach created awareness within the nursing teams about how to take the lead of their own chosen quality improvement learning cycle (based on nurse-sensitive data). On the other hand, there are still steps to be taken in the future in nurses having access to nurse-sensitive data and learning to interpret and reflect on these data, as well as learning to go through a systematic PDCA cycle using SMART goals.

*Relevance and impact*

Scientific impact

Through this research, we gained knowledge about learning and improvement in practice and what is necessary to establish and implement workplace learning in a long-term care setting. To our knowledge, no research has yet considered the possibilities and ways to implement workplace learning specifically in a long-term care setting. Furthermore, this research has shown that, in theory, there are many ideas about (the implementation of) workplace learning, but that practice shows that implementation of, for example, working with data, PDCA cycles, SMART goal setting or working together in a structured way on measurable goals is often more difficult than expected. These difficulties are related to different factors such as facilitation (by management) for implementation, the experiences or competencies of the target group, setting characteristics and team composition, but also to more specific factors such as lack of time and workload in the long-term care setting.

Societal impact

Room for ownership and leadership for nurses working in long-term care organisations is part of the aim written in the National Participation Monitor for Nurses, Caregivers, Nurse Specialists and Supervisors for the Ministry of Health, Welfare and Sport [1]. A bottom-up approach, ownership and leadership for nursing staff are important themes within this national report. This shows the societal impact of this research, because a bottom-up approach, ownership and leadership are key components within the LINC approach. Furthermore, developments in Dutch elderly care frameworks such as the Dutch National Quality Standard for Long-term Care show the importance of learning in practice, as it aims to let professionals systematically learn and develop in nursing home organisations to improve quality of care [2].

*Target group and sharing results*

The target group of this study includes elderly care organisations, specifically nursing teams, but also other healthcare professionals working in elderly care (based on an interprofessional approach). It can also help other researchers or policymakers interested in learning and improvement approaches in long-term care to improve quality of care. It would be interesting for long-term organisations to look at the results of this research, because it provides a perspective on what possible approaches are available in innovative learning and improvement to help face complex issues in care such as staff shortages. The LINC approach may not offer a complete solution, but it can help nurses deal with difficult issues and problems.

At this point, the LINC approach was presented in educational programmes within the Health Sciences study at Maastricht University as part of a course about quality of care. In this way, students' knowledge was enhanced on how to implement learning and improvement pathways in long-term care based on nurse-sensitive data and what opportunities these types of approaches offer. Furthermore, our research also shows the relevance of creating more awareness, knowledge and skills regarding learning and improvement in long-term care in educational programmes for nursing students. This may help close the gap between the competencies of nurses working in current long-term care settings (partly caused by staff shortages) and the expectations of nursing staff about being a reflective professional and engaging in quality improvement processes.

Our target group has furthermore been engaged and informed about the research results, as we have shared our results at international and national conferences through (poster) presentations and symposia. This includes the Gerontological Society of America (2022), but our results were

also shared at national congresses such as the scientific symposium at Zuyderland (2023). Furthermore, we also created a workshop at the European Nursing Congress (2022). In this way, the knowledge we gained was shared for future use in practice among nurses and in science for other researchers. We also shared our results in interviews. This included interviews with research institutes like ZonMw, which was published online, as well as interviews with long-term care organisations, which were shared in newsletters available for nurses to read. Finally, our results were also shared with a national ZonMw research group in which projects were included about learning and improvement in long-term care. We shared results, methods and tools within the research group, and are setting up a central finding place for these tools so that they can be found by the target group.

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## About the author

Merel (Elisabeth Aldegonda) van Lierop was born on January 23, 1994 in Geldrop, the Netherlands. She completed secondary education in 2012 at the Augustinianum in Eindhoven. She started helping her grandmother with Alzheimer's as an informal caregiver when she was 15 years old. Later, her grandmother was transferred to a nursing home, which got Merel interested in elderly care. In 2015, Merel obtained a Bachelor's degree in Health Sciences at Maastricht University. Contiguously, she obtained a Master's degree in Health Education and Promotion (2016), and in Healthcare Policy, Innovation and Management (2017) at Maastricht University. After her studies, Merel worked at the Health Promotion department at Maastricht University as a research assistant, where she assisted in several research projects.

In March 2019, Merel started her PhD research focusing on long-term elderly care at the department of Health Services Research at Maastricht University. The PhD research included the development of the LINC approach. The goal of the LINC approach is to stimulate systematic learning and quality improvement in long-term nursing care.

Alongside her research activities, Merel was also involved in other activities such as being "Junior Chair". This position required helping new PhD students at the department of Health Services Research with finding their way within the world of research. Furthermore, Merel was involved in educational activities at Maastricht University where she tutored students, gave lectures and supervised students with writing their master theses.

Presently, Merel works at Cooperation VGZ (health insurance company) where she aims to keep healthcare accessible for everyone living within the Netherlands.

## Publications

*Scientific publications*

van Lierop, M. E., Meijers, J. M., van Rossum, E., Rutten, J. E., Thoma-Lürken, T., & Zwakhalen, S. M. (2022). How to establish workplace learning in long-term care: results from a World Café dialogue. *BMC nursing*, *21*(1), 241.

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Van Lierop, M. E., Meijers, J. M., van Rossum, E., & Zwakhalen, S. M. Measuring workplace learning conditions in long-term care: a brief report. *Submitted.*

Van Lierop, M. E., Meijers, J. M., von Burg, N., van Rossum, E., & Zwakhalen, S. M. Workplace learning conditions in long-term care. *Submitted.*

Van Lierop, M. E., Meijers, J. M., van Rossum, E., Duymelinck, S., de Vries, E., Huveneers, J., Bours, G., & Zwakhalen, S. M. A workplace learning intervention among long-term nursing staff: evaluating the process and experiences: The Learning Innovation Nurses Climate (LINC) approach. *Submitted.*

*National publications*

van Lierop, M. E., Meijers, J. M., van Rossum, E., Thoma-Lürken, T., & Zwakhalen, S. M. LINC-project Learning Innovation Nurses Climate. Cicerone Nr. 4., December 2019.

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Meijers, J. M., Verbeek, F. H., Van Lierop, M. E., Graas, R., Muller-Schoof, I. J., Verbiest, M. E., Rutten, J. E., Backhaus, R., Snoeren, M., Gobbens, R. J., & Van Vught, A. J. Worked based learning and improving in nursing homes. European Nursing Congress 2022, October 4, 2022; The Netherlands.

Van Lierop, M. E., Meijers, J. M., van Rossum, E., & Zwakhalen, S. M. Measuring Workplace Learning Conditions for Nursing Staff in Long-term Geriatric Care. The Gerontological Society of America (GSA) Annual Scientific Meeting, November 2-6, 2022; Indianapolis, IN, USA.

Meijers, J. M., Van Lierop, M. E., Verbeek, F. H., Laurant, M. G., van Rossum, E., Zwakhalen, S. M., & Van Vught, A. J. The Gerontological Society of America (GSA) Annual Scientific Meeting, November 2-6, 2022; Indianapolis, IN, USA.

Van Lierop, M. E., Meijers, J. M., van Rossum, E., & Zwakhalen, S. M. LINC Tool: Using Quality Data, Coaching, And an Improvement Cycle for Learning and Improvement in Long-term Care. The Gerontological Society of America (GSA) Annual Scientific Meeting, November 2-6, 2022; Indianapolis, IN, USA.

Meijers, J. M., Van Lierop, M. E., van Rossum, E., & Zwakhalen, S. M. Stimulating workplace learning in long-term nursing care using the LINC approach. EANS 2023 Summer Conference, June 5, 2023; Oslo, Norway.

Van Lierop, M. E., Meijers, J. M., van Rossum, E., & Zwakhalen, S. M. Werken is leren, en vice versa! De LINC aanpak. Zuyderland Scientific Symposium, June 22, 2023; Geleen, The Netherlands.

## Living Lab in Ageing and Long-term Care

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

## Academische Werkplaats Ouderenzorg Limburg

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

## PhD-theses Living Lab in Ageing and Long-term Care
## Proefschriften Academische Werkplaats Ouderenzorg Limburg

Merel van Lierop. Keep on learning! Fostering continuous learning and improvement in long-term nursing care. 2025

Niklaus Stefan Bernet. Fair and Meaningful Comparison of Inpatient Fall Rates in Acute Care Hospitals. 2025

Johanna Rutten. Are we walking or just talking? Enhancing relationship-centered care in nursing homes. 2024

Ines Mouchaers. Managing Everyday Life. Exploring the Essential Components of Reablement and User Experience. 2024

Lindsay Groenvynck. The transition from home to a nursing home: The perspectives and experiences of older people with dementia, informal caregivers and professional caregivers. 2024

Anne Visser. Deprescribing in Nursing Home Residents. When less is more? 2024

Svenja Cremer. Undervalued & Unexplored. Underpinning and Guiding Nursing Care in Activities of Daily Living. 2024.

Katinka Pani – Harreman. The place to be. Guiding the activation of a community to facilitate ageing in place. 2024.

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Chandni Khemai. There is an I in WE. Collaborative Awareness in the dedicated palliative care approach for persons with dementia. 2023.

Amal Fakha. Improving the implementation of transitional care innovations. 2023

Tom Vluggen. Towards improved multidisciplinary stroke care for older people: assessing feasibility and effectiveness of an integrated multidisciplinary geriatric rehabilitation programme for older stroke patients. 2023

Priscilla Attafuah. Quality of life, health, and social needs of slum-dwelling older adults in Ghana. 2023

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Rixt Zijlstra. Managing concerns about falls. Fear of falling and avoidance of activity in older people. 2007

Sandra Zwakhalen. Pain assessment in nursing home residents with dementia. 2007