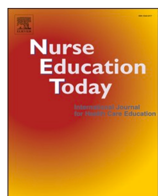
Nurse Education Today 163 (2026) 107085

Contents lists available at ScienceDirect

Nurse Education Today

journal homepage: www.elsevier.com/locate/nedt



Research article

Pull through together or be detached? A qualitative study of experiential learning in nurse education during interaction in age suit simulation

Björn Bouwmeester Stjernetun [a,b,*], Jenny Hallgren [a], Elzana Odzakovic [b], Catharina Gillsjö [a,c]

[a] University of Skövde, School of Health and Education, Sweden
[b] Jönköping University, School of Health and Welfare, Sweden
[c] College of Nursing, University of Rhode Island, Kingston, RI, USA

ARTICLE INFO

Keywords:
Age suit simulation
Blindness
Nurse education
Health problems
Nursing students
Older persons

ABSTRACT

Aim: To illuminate nursing students' interactions during age suit simulation from the perspective of being a blind older person and being an attendant guiding the blind person.

Background: Nursing students' understanding of age related and long-term, often multiple health problems are crucial for providing person-centred care in the home. In age suit simulation students take the perspectives of an older person which can improve their general attitudes towards older persons. However, focusing on blindness in age suit simulation is a novel concept.

Design: The research design of this study is qualitative. During the autumn of 2022 to the spring of 2024 as a part of a larger intervention study project, nursing students (n = 68) were video-recorded during age suit simulation. The data was analysed through reflexive thematic analysis. Results Three main themes were constructed: (1) Pulling through together, (2) Dialogue is key when adapting to health problems and (3) Detached from each other. The third theme signifies the importance of being able to communicate in a meaningful way to adapt to each other's health problems. Students took different approaches to this challenge, which is reflected in the ways the students interacted with each other.

Conclusion: The results of this study can be used to formulate a learning strategy to teach nursing students about the perspectives of being an older person with health problems. The simulations can also be utilized to enhance nursing students' knowledge and skills when guiding a blind person in the context of a home environment. Furthermore, the results can be useful in highlighting a holistic perspective regarding care needs as a shared experience by older couples, which is relevant knowledge for any health and social care profession. This embodied understanding of health problems can be used to support and practice person-centred care for older persons.

1. Introduction

Registered nurses (RNs) are at the forefront of the health care system, and sustaining the RN workforce skilled in the management of age related and often multiple long-term health problems is essential for providing health care to the ageing population (Buchan and Catton, 2023). RNs respond to unpredictable and complex situations and need a broad spectrum of knowledge and skills when encountering older persons with complex care needs (Larsson Gerdin et al., 2021; *Swedish Health and Medical Services Act. Hälso- och Sjukvårdslagen (SFS 2017: 30) [The Health and Medical Services Act]*, 2017; The Swedish Parliament, 1990). Since RNs are essential care providers to older persons, nurse education needs to address students' lack of motivation to work with older persons (McAllister et al., 2020). In addition, nurse education often focuses on acute care and lacks gerontology and geriatric content, thereby excluding from the curriculum knowledge about the needs of older persons (Garbrah et al., 2017).

Long-term health problems, such as diabetes, arthritis or cardiac-related diseases, which are prevalent among older persons, often lead to different impairments such as reduced mobility or poor eyesight and hearing (Hung et al., 2012). Subsequently, these long-term health problems are associated with challenges in daily life activities but also

* Corresponding author at: University of Skövde, School of Health and Education, Box 408, SE-541 28, Skövde, Sweden.
E-mail address: bjorn.stjernetun@his.se (B.B. Stjernetun).

https://doi.org/10.1016/j.nedt.2026.107085
Received 8 April 2025; Received in revised form 23 February 2026; Accepted 16 March 2026
Available online 20 March 2026
0260-6917/© 2026 Published by Elsevier Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

with falls and geriatric trauma injuries. It is therefore important that health care providers are educated in the complexity of geriatric care and early recognition of problems that can cause dependence in daily life (Maresova et al., 2019). For example, point of view simulations, where health care students "step into the shoes" of an older person has been used to raises awareness of the daily life challenges faced by older persons (Nelson et al., 2023).

Experiencing functional and psychological limitations in daily life can challenge a person's perception of their personhood, especially in the context of a health care system that focuses on treatments for deficits and decline rather than on potential and what matters to the patient (McCormack et al., 2021a). Sensory impairment (vision and hearing impairment) is a prevailing and debilitating condition among older persons and is associated with negative self-perceived health, additional long-term health problems, and increased hospitalisation (Lee and Park, 2022). Individuals with impaired vision and hearing may feel unsafe in their own homes, making it essential for RNs to be supportive and to communicate with them patiently and attentively (Händler-Schuster et al., 2023). Similarly, person-centred care focuses on caregivers establishing close relationships with care receivers and their significant others, characterised by respect and mutual trust (McCormack et al., 2021b). Age suit simulation is a point of view simulation where a commercially available suit is used to simulate age-related health problems in younger persons. This has been shown to improve nursing students' empathy towards older persons. Still, a gap in research remains regarding more complex tasks, such as those experienced in the daily living context of older persons (Gerhardy et al., 2022). Living with long-term and multiple health problems has increased the global need for older persons to receive care in their own home, both from care providers and informal caregivers (World Health Organization, 2015). The Swedish health care reform "good and close care" was established to facilitate the transition of care from institution to home, as a response to make health care more available, coherent, equal and person-centred to the growing number of persons with long-term health problems (Swedish Government Official Reports, 2020). An example of such strategy to make health care more accessible is the Swedish Mobile Integrated Care Model, which has been the subject of research. Encounters with patients and relatives in their homes were described by RNs and physicians as facing the patient on their own terms, and providing an insight into their everyday lives (Hovlin et al., 2022). With increasing age, older persons often have to live with multiple health problems all of which make their care needs increasingly complex (World Health Organization, 2021).

It has been highlighted that it may be disheartening for students to be placed in a clinical setting caring for older persons without being provided with the proper gerontological education in the first place (McCloskey et al., 2020). Even though efforts have been made over the last decade to increase nursing students' interest in caring for old persons, students have a prevailing lack of interest in this field of nursing. This is a serious and multifaceted issue and more research on the subject is needed (Dai et al., 2021). Factors that may favour nursing students' positive attitudes towards working with older persons are life experience, knowledge about ageing, and feeling comfortable around older persons (Venables et al., 2023). Nurse philosopher Patricia Benner recognises that nurse education often downplays the knowledge gained from direct practice about building relationships and caring behaviour (Benner, 2022). This statement resonates with research showing students' need for a supportive learning environment that can adequately prepare them for clinical practice (Ten Hoeve et al., 2017; Henderson et al., 2020). The call for learning through practice aligns with research indicating that nursing students are unlikely to acquire relevant communication and interpersonal skills through theoretical education alone (Huisman-de Waal et al., 2018). Simulations, including various methods using mannikins, standardised patients and role-playing have been highlighted as one method to train skills, communication, self-efficacy and critical thinking (Choi and Um, 2022). Experiential learning theory highlights the importance of learning from experience, which often involves interactions with others and the environment. An optimal learning experience takes into account the concepts of retaining and transforming knowledge though experiencing, reflecting, thinking and acting (Gencel et al., 2021; Stock and Kolb, 2021).

This study is part of a larger research project on an age suit simulation intervention in nurse education (Bouwmeester Stjernetun et al., 2024a, 2024b). In one study, students' experiences of wearing the suit, for example, when performing daily chores with knee pain and navigating an apartment with impaired vision and hearing, were described as challenging. Students also described how they would adapt and resort to problem-solving in order to overcome their impairments. The challenging experience also became the starting point for discussion and reflection, which took place after the simulations. Students were encouraged to relate their experience to the nurse's competencies and key concepts in nursing. The reflections gave the students new insights and understanding of providing care to older persons and how they could implement this knowledge in their practice (Bouwmeester Stjernetun et al., 2024a). However, one concern that has been raised is that simulations, if not performed carefully, can confuse people about the realities of the impairments, which can contribute to discrimination (Silverman, 2015).

Additionally, there is a call for the further development of simulations in nursing education, addressing how social context is intertwined with physical and cognitive impairments (Ozkara San et al., 2022).

In one situation during the simulations described in the previous studies (Bouwmeester Stjernetun et al., 2024a, 2024b), students took on the roles of a blind person and their attendant, which caught the researchers' attention and inspired their curiosity. The literature search revealed that this kind of simulation is rarely studied, especially among nursing students. Therefore, this study of the intervention addresses the challenging situation in which two students simulate these health problems either as blind persons or attendants. It is noted that simulations as described in this study may also be referred as disability simulations (Silverman, 2015; Silverman et al., 2018).

2. Aim

To illuminate nursing students' interactions during age suit simulation from the perspective of being a blind older person and being an attendant guiding the blind person.

3. Method

3.1. Design

This study had a qualitative inductive design using reflexive thematic analysis (Braun and Clarke, 2021) in which inductive is described as being 'grounded in' the data. Using reflexive thematic analysis allowed the researchers to interpret the data from theoretical assumptions as well as insights and perspectives gained from previous experiences (Braun and Clarke, 2021; Braun et al., 2022), which in this study included experiential learning theory (ELT) and insights from earlier studies of the intervention (Bouwmeester Stjernetun et al., 2024a, 2024b). The simulation design was based on the learning cycle of ELT and included; *the concrete experience*- the direct sense experience of students engaging in the age suit simulation, *reflection*- the students reflect on their feelings, ideas and key aspects of the simulating, *thinking* – the students further analyse and evaluate their experience and how it relates to concepts of their profession, *acting* – the students can apply what they learned during the age suit simulation into their practise. The earlier studies (Bouwmeester Stjernetun et al., 2024a, 2024b) had provided the authors of this manuscript insights about the impact vision impairment had on students during age suit simulation, which was an important motivator for the present study.

3.2. Study context and participants

On the grounds that age suit simulation was a novelty in the nursing programme the education intervention also became a larger research project about how age suit simulation among nursing students impacts insights and understanding of ageing, being an older person, living with age-related long-term health problems and providing care to older persons (Bouwmeester Stjernetun et al., 2024a, 2024b). In the fourth semester, all nursing students in the Swedish university's three-year nursing programme undergo age suit simulation at Skaraborg Health Technology Center (SHC) as part of the mandatory curriculum in gerontology and geriatrics (Bouwmeester Stjernetun et al., 2024b). Pensioners' associations, which is a non-profit interest organization that advocates for the interests of older persons, were invited to take part in designing the infrastructure of the SHC, which consists of a highly accessible apartment equipped with welfare technology (WT) and technical aids. In addition, a certified attendant who guided blind persons provided an opportunity to test digital guidance systems at the SHC. The certified attendant had undergone formal training regarding how to assist and guide blind persons. She also teaches other persons including formal and informal caregivers how to guide, which often include how to describe the surroundings, warn of dangers and assist the blind person in daily life.

During each simulation four students (two pairs) were assigned the persona of either being blind or being an attendant. Students who did not want to appear on video were assigned other personas carrying out scenarios in a designated home environment. In total sixty-eight students (34 pairs) participated in the study. In the age suit simulation, students assigned a persona, experience the perspective of an older person with long-term health problems by wearing an age suit - the GERonTologic simulator (GERT). The suit can adapted using different weights, straps, eye glasses, ear protection and gloves to simulate various health problems such as tremor, arthritis, impaired vision and hearing, tinnitus, hemiparesis, lung disease and overall restricted movement and unstable gait (Moll, 2026).

The simulations were conducted at Skaraborg Health Technology Center (SHC), an accessible authentic home environment equipped with health and WT in the form of various sensors. There is a digital twin of the 80 m^2 apartment which is illustrated below (picture 1). The sensors in the apartment react when activated by use, movement or pressure, causing furniture and appliances to change colour on the TV screens in the environment. The bed is also equipped with sensors detecting heart rate and respiratory rate. The red dot on the bed indicates the location of the person in the bed (Fig. 1).

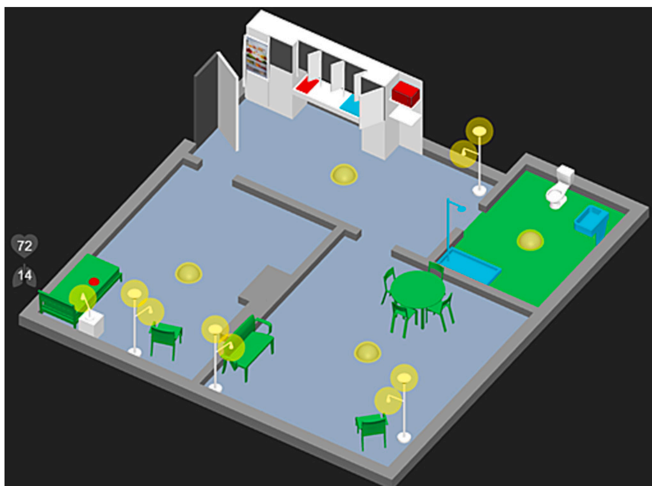


Fig. 1. Digital twin of the apartment used in age suit simulation. Illustration designed and provided by Mikael Lebram, engineer at SHC.

3.3. Simulating using and age suit while assigned a persona

The focus in this study was on observing two students who worked together in the personas of 1) being completely blind with impaired hearing and knee pain, and 2) experiencing knee pain, impaired hearing (tinnitus) and impaired vision (diabetic retinopathy) and being an attendant to the blind person.

After being assigned their respective persona by the teacher, they dressed in the age suit. The attendant was instructed by the teacher to convey the details of the activities to the blind student. The pair were also informed that one teacher would be close by throughout the simulation. The instructions detailed specific activities and scenarios that would take place in the apartment. For example, in the kitchen they had to interact with an automated cupboard in order to collect a glass, a plate, and knife and fork, before setting a dinner table located in the living room. As another example, in the bathroom they had to sit on an automated toilet seat, get up (usually by pressing a button to elevate the seat), pick up their toothbrush and toothpaste, brush their teeth and comb their hair.

The simulations lasted approximately 65 min. Afterwards, all the students gathered with one of the teachers for a guided group reflection. During the reflection the students reflected on their experience and to shared thoughts about ageing, older persons, living with long-term health problems and caring for older persons, relating their ideas to core nursing values, central concepts and the care environment. No data from this group reflection was used in the present study.

3.4. Data collection

In preparation for the data collection, the first author performed an interview with a legally blind person and a certified attendant (described in the context section). The interviews focused on different aspects of how an attendant should guide a blind person and how it feels to be guided as a blind person. For example, both the attendant and the blind person stressed the importance of building a good rapport with each other, including establishing agreed-upon verbal cues to ensure safe navigation. Therefore, the attendant needed to take time to understand the preferences of the person they were guiding. The blind person advised holding onto the attendant using an arm hook or by placing a hand on the attendant's shoulder, especially if the attendant was taller. Furthermore, the attendant has to be clear in their instructions including describing the environment but without overwhelming the blind person with information. Both the blind person and the attendant highlighted the importance of sustaining the blind person's autonomy and dignity by including them in daily activities as much as they wished. They noted that maintaining this balance could be delicate - avoiding both taking over and failing to provide appropriate support. The observational data was collected through video footage and reflection notes (Griffin and Bengry-Howell, 2017). Thematic analysis can include different types of data in the same data set (Braun and Clarke, 2006, 2022). Data was collected by the first author (BBS) from the spring of 2022 to the fall of 2024. The researcher recorded the interactions using a hand-held smartphone to enhance mobility as the activities took place in multiple locations allowing the researcher to be present in the same room/space as the participants. Using a hand-held device also allowed the researcher to stay close to the students as well as move out of their way when necessary.

In this study, the researcher was well-known to the students and had no intention to interfere with the students' performance while they were simulating. However, at times interference was necessary, such as giving cues to answer questions and, on some occasions, intervening, which is why the researcher's role mostly aligned with the description of a *participant as observer*. In this role the researcher must balance not being too distant with too close (Gold, 1958).

The recording and note taking started as soon as the students began simulating, and in order to uphold consistency, all the simulations

started in the same location and proceeded along the same route. The simulations started with a longer initial sequence (approx. 4 min) when the pair in their age suit walked from the changing room towards the elevator, opened a pair of glass doors. Took the elevator down to the ground floor, went outside and then went back to the elevator and went back up again to the third floor and moved through a long corridor towards the apartment. When they arrived at the apartment the recording stopped. About midway through the simulation the same couple of students were recorded again in shorter sequences (around a minute) when they were performing scenarios in the apartment.

The data collection included 143 video sequences of the 68 students - approximately 5 h of video footage (Table 1) all of which was included in the data analysis. These sequences represent footage from the 68 students (34 pairs). Some observations of the student pairs included several sequences and others fewer but longer sequences. The reasons for this variation were sometimes technical, such as pausing and adjusting to get a better angle, or the teacher stopping the recording to assist students before resuming.

The first, second and last authors are lecturers in the nursing programme. They are responsible for the age suit simulations and conducted reflection seminars in groups with the nursing students at the end of the age suit simulation. The third author, a lecturer at a different university participated in age suit simulations and reflection seminars.

3.5. Ethical considerations

The Swedish Ethical Review Board approved the study with an advisory opinion (Dnr 2021–04056) because no sensitive data would be collected. All the participants were given oral and written information about the aim of the study, and were told that their participation was voluntary, and they could withdraw from the study at any time without giving an explanation. The participants were informed that they were not expected to do anything apart from be active in the simulations. Being videotaped was optional as the students were informed during an initial briefing, thus students who did not want to appear on film were not recorded but were not excluded from participating in the simulations. Instead, they were assigned a different persona that was not videotaped. During the simulation, the observer was open to answering questions along the way and occasionally intervened, for example when the students were unsure how to proceed or how to prevent harm. After the simulations, the students participated in reflections where they could share their experiences (not included in this study).

3.6. Analysis

For this study, reflexive thematic analysis (Braun and Clarke, 2019) was employed since it is a flexible and iterative method for analysing qualitative data, and analysis is shaped by the researcher's subjectivity and creativity (Braun and Clarke, 2023). Moreover, the analysis is about telling a story (Braun and Clarke, 2019). All of the authors of this study were involved in the analysis in an iterative process, which is a feature of reflexive thematic analysis. In this study, the meaning units in the analysis were specific video sequences that appeared relevant to the study's aim of telling a story of two roles: being blind and being an attendant to a blind person. Choosing a meaning unit in video analysis can be based on very specific events such as time segments, gestures and speech but can also be based on ideas or patterns (Fazeli et al., 2023). The reflection notes included comments and observations about the students' interactions during the simulations. These reflection notes were included in the analysis and were helpful when interpreting the interactions or naming themes. The iterative process between the steps of the analysis is outlined in detail in Table 2.

Table 1
Overview of the video sequences used for analysis.

Student pair	Year	Sex (F = female, M = male)	Number of sequences	Minutes of video
1	2022	F + F	3	07:51
2	2022	M + F	2	06:25
3	2022	F + F	3	10:41
4	2022	F + F	5	09:23
5	2022	F + F	3	05:41
6	2022	F + F	4	08:16
7	2022	F + F	4	09:05
8	2022	F + F	3	10:43
9	2022	F + F	3	08:06
10	2023	F + F	4	07:36
11	2023	F + F	3	06:08
12	2023	M + M	4	07:37
13	2023	F + F	5	09:40
14	2023	M + F	4	07:14
15	2023	F + F	3	08:37
16	2023	F + F	5	09:34
17	2023	F + F	3	07:15
18	2023	F + F	4	07:56
19	2023	M + F	3	08:52
20	2023	F + F	3	06:56
21	2023	F + F	2	08:53
22	2023	F + F	2	10:13
23	2023	M + F	2	07:38
24	2023	M + M	3	06:33
25	2023	F + F	3	08:51
26	2023	M + F	5	07:48
27	2024	F + F	8	12:10
28	2024	F + F	5	13:51
29	2024	F + F	8	08:49
30	2024	F + F	8	12:08
31	2024	F + M	8	11:56
32	2024	F + F	6	09:10
33	2024	F + F	6	13:12
34	2024	F + F	6	13:14
		M = 9, F = 59	Total: 143	Total: 308,033 min ≈ 5 h 8 min.

Table 2
The analysis.

One: Familiarisation	The entry point of the analysis. Viewing the video material. Starting to identify interactions that corresponded with the study aim. At this stage, the general characteristics of the attendant and the blind student were understood as patterns of being either close to or distant from each other. This observation was also noted in the reflection notes and these general characteristics became the interest for deeper analysis.
Two: Generating initial codes	Semantic and latent excerpts were identified in the data and written down in a Word document. The excerpts included interpretive and descriptive texts (descriptions and interpretations of students' interactions and spoken words between the students). The excerpts were labelled with a code, which sometimes was refined, for example, merged and/or expanded on, replaced or discarded.
Three: Generating themes	Reflecting on the refined codes ($n = 58$) and going back to the data to find patterns of meaning. Codes that shared similarities were sorted into seven clusters in an Excel file. The clusters were the building blocks for generating sub-themes and main themes. During this process, notes and ideas about the theme development were written on separate sheets of paper to serve as a helpful visual tool.
Four: Reviewing themes	Themes were reviewed and refined to make sure they were relevant to the data excerpts and the data set as a whole, and that themes resonated with the participants' quotes and interactions. The authors discussed how themes could best represent a story. At this stage, the idea of using pictures from the simulations to represent the themes was introduced. At this stage input from the reflection notes also informed naming of the themes.
Five: Defining and naming	The authors engaged in intersubjective discussion and reached agreement on defining and naming themes, as well as selecting imagery to represent them.
Six: Producing the final report	The final report was written.

3.7. Trustworthiness

The study's trustworthiness was considered in regards to the concepts of credibility, dependability, confirmability and transferability (63, 64). In this study all students who were registered in their fourth semester were eligible for inclusion implying a comprehensive dataset that had substantial demographic diversity. This variation supported analytic richness by enabling the development of themes that captured patterns of shared meaning across different perspectives which is consistent with reflexive thematic analysis (Braun and Clarke, 2019). Consistent with Lincoln and Guba (1985) the development of themes as patterns across a diverse and complex dataset enhanced credibility. The prolonged engagement of the authors in the simulations as well as the consistency in how the simulations were conducted also strengthened credibility and transferability (Lincoln and Guba, 1985). Dependability and confirmability were strengthened by continuous discussion and feedback as the first authors kept a reflexive journal, similar to an audit trail as described by Lincoln and Guba (1985) recording the methodological decisions and reflections. Credibility, confirmability and transferability were also enhanced by the thick description of the study's findings and context, but in the end, it is up to the reader to decide on the degree of transferability to other contexts (Lincoln and Guba, 1985).

4. Findings

The findings consist of three main themes showing contrasting ways in which the students interacted with each other. These main themes are, first, “Pulling through together” which includes three sub-themes: “A cheerful approach helps navigate challenging circumstances”, “Being one step ahead” and “Trial and error”. The second main theme is “Detached from each other” and includes: three sub-themes “The frustration of managing more things at once”, “Placed as a bystander” and “Keep at arm's length”. The third main theme, “Dialogue is key when adapting to health problems” includes two sub-themes: “Helpful conversations” and “Communication breakdown”. The third theme underscores the central aspect of communication (Fig. 2). The sub-themes are illustrated by quotes from the students and descriptions of their interactions.

4.1. Pulling through together

The main theme highlights students working together in a positive spirit as a team, experimenting and using trial and error to navigate scenarios. The attendants guided blind students step by step, showing awareness of environmental hazards like thresholds or obstacles. Through meaningful conversations, the students understood each other's challenges and adapted to their strengths and weaknesses, enhancing teamwork.

4.1.1. A cheerful approach helps navigate challenging circumstances

The analysis revealed that students who worked well together enjoyed small talk, joking, and laughing. Humour helped them cope in challenging moments, even veering into dark comedy. For instance, when reading a fire warning sign, an attendant joked, “If I have this much pain in my knees, I'm certainly going to burn to death” (230918-2). Both students showed mutual concern and support; during one elevator ride, the attendant asked, “How is it going?” The blind student replied, “Good, how about you?” eliciting a cheerful “Fine!” and laughter (230918-3). Humour also encouraged participation. After struggling to get into bed, a blind student was teased to “Pull up the sheets as well!” prompting a playful “For God's sake!” as they complied (240220-1). These cheerful interactions were key to managing challenges in the age suit and balancing the students' dynamic.

4.1.2. Being one step ahead

The attendant displayed an overall caring attitude towards the blind student by carefully and purposefully guiding and giving physical and verbal support. Being one step ahead involved the intention to foresee

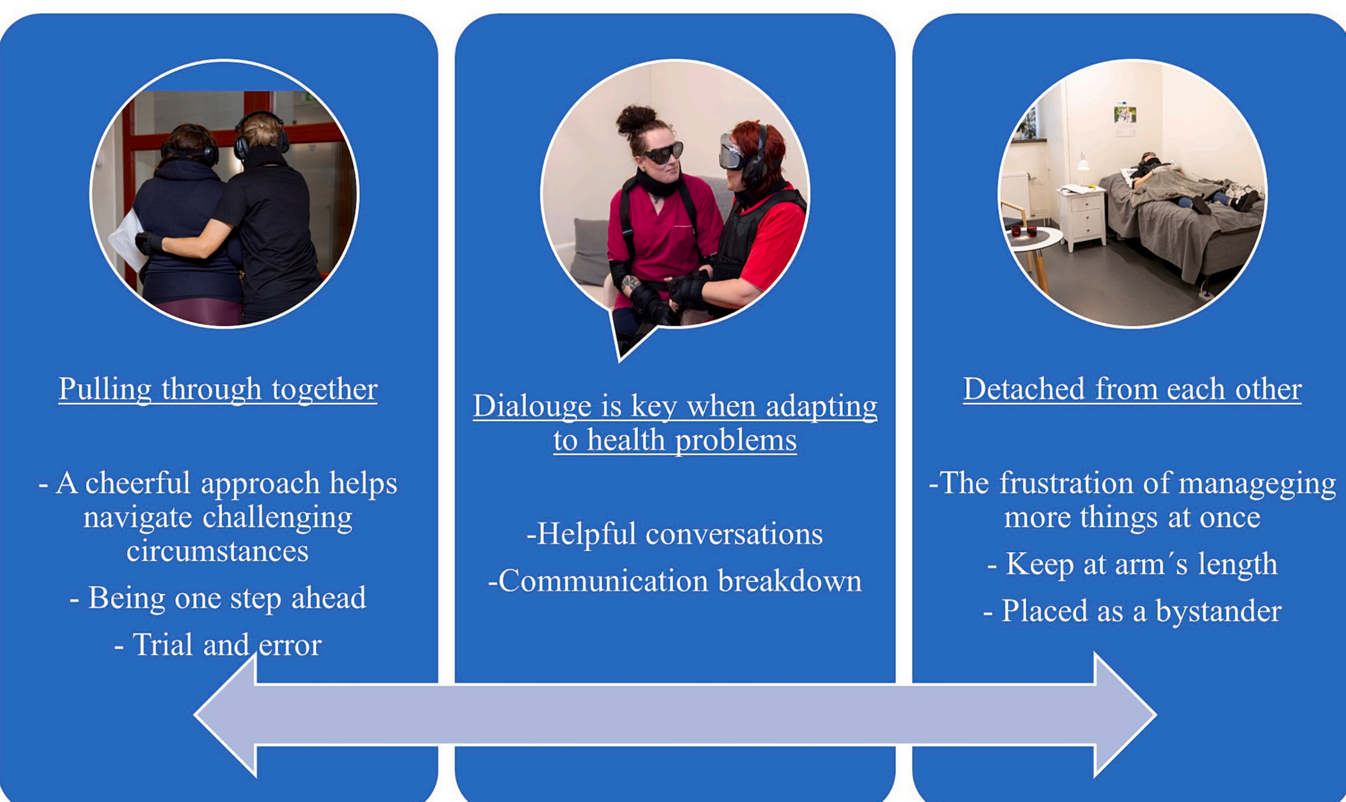


Fig. 2. Overview of the themes.

obstacles and to inform and guide the blind student through these barriers. Barriers they often encountered were slopes in the floor, doors, furniture standing in their pathway or other students. Another aspect of being one step ahead was getting the timing of verbal and physical cues right. Timing was essential in navigation, for example, informing about an obstacle such as a threshold too soon was unhelpful because it was very difficult for the blind student to estimate distance as well as keep their balance. In one situation the attendant first paid attention to her gait, and adjusted her speed to the blind student so they could walk in sync. Then the attendant said; "It's just along the corridor straight ahead, you can feel the wall on your side, it is coming up right now". At the moment the wall was in reach on the blind student's side she nudged the blind student's right hand onto the wall and the blind student could touch the wall with her hand all along the corridor to give her a sense of direction (230313-1). This situation illustrates the attention of the attendant getting the timing of verbal and physical cues right. In another situation, the attendant stopped the blind student just before a door, told the student that she was using the automatic door opener, waited until it fully opened, then said; "I have now opened the door here" and at the same time physically guided the blind student through the doorway and said; "We are going through now" (230918-2). In regard to body language, the attendant would usually offer their arm to the blind student and/or discuss how they best wanted to be assisted. Staying close to each other helped the attendant to coordinate verbal and physical cues. The blind student also seemed to prefer closeness by drawing near to the attendant.

Another aspect of this theme was the attendant's awareness of not leaving the blind student alone, in order to protect them from physical harm while being vulnerable in an open space. On occasions, leaving the blind student was necessary, for example when the attendant needed both hands. In these instances, the attendant often informed the blind student they were going away, and "parked" the blind student by something solid, for example in one situation the attendant said to the blind student in the elevator; "You can hold on here [a metal bar]", in this way the attendant could let go of the blind student and focus on the panel and on choosing the right button to press (230925-3). Other objects that were used to "park" the blind student was often a bed or a chair.

4.1.3. Trial and error

This theme represents how both students actively tried to complete the activities while manoeuvring in an unfamiliar environment. Despite the barriers imposed by the age suit the students explored alternative strategies to manage the tasks they were given. The attendant, who also had a visual impairment (though not blind), was trying to read instructions and convey the message to the blind student. This task was also challenging because the attendant had to find the "right" light in order to read the text. The attendant also had knee pain and in one scenario, the attendant went to get a feather duster on the lowest shelf but she could not bend down that low, so instead she put her foot on the duster and dragged it out towards her and picked it up (231009). In another situation, the attendant was reading questions on a paper and included the blind student in the task by asking her for the answers. In a similar situation, the attendant gave a pencil and paper to the blind student and said; "Here you have the pencil, and here is a post-it note", then she waited by her side until the blind student had completed the task (221004-1). This situation was representative of the attendant's inclusive attitude towards the blind student and was characterised by an unspoken assumption that they could autonomously perform even a complicated task, such as writing on a small piece of paper, without seeing. Another example of the blind student acting autonomously was observed in a situation when the student was determined to pour herself a glass of water from a canister even though the attendant insisted on helping her multiple times. The blind student first fiddled with the glass and canister with her hands to get a feeling for their size and positions and began to pour. "Stop!" the attendant said when the glass almost overflowed. The blind student asked out loud; "How do I know when the glass is full?". "Just put your finger in the glass", the attendant answered (230925-1). These examples highlight situations that show that when the attendant had an inclusive attitude it made the blind student more confident about taking the initiative in the scenarios.

4.2. Detached from each other

This theme describes interactions between students that created a distance between them rather than a working relationship. In particular, the attendants seemed overwhelmed by managing their own health problems, supporting the blind student and navigating their way forward. The attendants took it upon themselves to complete the activities with minimal or no involvement of the blind student, which also resonated in their body language. Being excluded from the activities also made the blind student less inclined to take the initiative in conversations, or to voice their needs and participate in the scenarios.

4.2.1. The frustration of managing more things at once

This theme illustrates how the attendants became overwhelmed trying to manage both their own health problems while at the same time focusing on the blind student. They would often concentrate on the instructions and performing the scenarios themselves, leaving out the blind person. In one observation the attendant and the blind person struggled to communicate with each other, causing frustration, and when they were in the elevator the attendant seemed to completely forget she needed to press the elevator button, and needed to be reminded by the teacher (240205-2). In another situation the blind student called out; "Where are we going? I can't hear you", but the attendant ignored her. When they arrived at a pair of glass doors the attendant fumbled to open them. The situation seemed to make her frustrated as she instead pushed the door open, dragging the blind student, who was facing in the opposite direction, through the door. This rough behaviour continued through the simulation, and at one point when the blind student was pushed forward through a doorway she cried out; "What the hell!" (220214-2). This example is illustrative of how attendants acted towards the blind student as if they were more of a problem than someone who could be included in the scenarios.

4.2.2. Placed as a bystander

This subtheme represents how the blind students increasingly refrained from being active participants as a result of the attendant excluding them. The attendant had the "power" of sight (though limited) and therefore was the only one able to read the instructions on how to complete the scenarios. Consequently, the blind student had to be informed by the attendant about what to do. Attendants who were focused on just completing the scenarios did not share this information with the blind students very often. Being left out made the blind students more uncomfortable and they became less interested in participating in the simulation scenarios. This lack of participation was sometimes so significant that the blind person almost did not speak a word during the entire simulation. In one particular situation, it was observed that the blind person was left on her own multiple times. The situation culminated in the attendant leaving the blind student alone on a chair in a separate room while going to rest on the bed for several minutes (240205-3). In one situation the blind students sat beside the attendant while the attendant was reading the instructions. Not a word was spoken between them for almost a minute. A few minutes later in the kitchen, the blind student was left by the stove and the attendant performed all the activities in the scenario herself (220214-2). In a similar situation the attendant pushed on towards the elevator but did not inform the blind student about what was going on. There was not a word spoken between the students for almost a minute. The consequences of this lack of instructions were highlighted when the blind person spoke up and asked; "Am I in the elevator?" (220221). This example illustrates how dependent the blind student is on the attendant—not only for inclusion

in various scenarios but also for maintaining a sense of orientation.

4.2.3. Keep at arm's length

When navigating around the environment the blind student had to completely rely on the attendant. Interestingly, this responsibility was ignored by some attendants as they were either reluctant or inattentive in regard to physically guiding the blind student. There were varying degrees of both physical distances maintained by the attendant and discussions about how the blind student preferred to be held and guided. In some instances, the attendant let the blind student wander off without any physical cues as to where they were or what they were supposed to do. In one situation at the very beginning of the simulation, the attendant had no physical contact with the blind student who was walking insecurely and waving her arms in front of her. In this instance, the teacher had to intervene because the attendant showed no intention of getting closer, and the teacher suggested that the attendant should hold on to the blind student. Throughout the simulation the attendant only held the blind student lightly by the hand and always kept her at arm's length (220926-2). Such interactions highlight what can be described as reckless behaviour on the attendant's part. In some of these instances, the teacher had to intervene and adjust the attendant's behaviour.

There were also times when the blind student was left all alone without knowing where the attendant was. Another way of keeping a distance was when the attendant moved at a fast pace, dragging the blind student behind, seemingly causing the blind student to lose their footing trying to keep up. In one situation the attendant kept up a fast pace then span around and pushed the blind student towards the main entrance door at the bottom level, causing the blind student to collide with the door frame. A few minutes later the blind student collided once again with a doorframe because the attendant was dragging her along. It was also noted that neither the attendant nor the blind student said anything about these collisions; however, the blind student's body language indicated she was startled (230918-1). These interactions were typical examples of how keeping a distance made it more difficult to navigate and made the blind student more vulnerable.

4.3. Dialogue is key when adapting to health problems

This theme reveals a strong demarcation regarding students' communication which influenced the kind of relationship they had described in the themes; “Pulling through together” and “Detached from each other”. Considering both students had health problems that impacted hearing and sight, communication proved to be a challenge. The arrow (Fig. 2) illustrates that there were students who had a good rapport with each other throughout the simulation and even made improvements in their collaboration. In addition, this theme also explains that students who were “detached from each other” sometimes improved their communication during the simulation and negotiated how they should best adapt to each other's health care problems. For that reason, they were able to move from a state of disengagement to becoming more attuned to each other and worked better together.

4.3.1. Helpful conversations

Small adjustments made a big difference, for example, adjusting the voice (speaking more clearly and/or louder) or leaning in towards and looking at each other when speaking. In one situation the blind student asked; “Can you hear me alright?” “Yes, but barely, I have tinnitus you see”, the attendant answered. “Oh, ok I see”, the blind student replied (220919). This short conversation served as a confirmation that the two students understood each other's limitations. It also illustrates the importance of expressing the problem. It sometimes took some students more time to talk to each other about the problems they experienced and how they could best adjust for them. In one example, the attendant had noticed that the blind student could not hear her properly and halfway to the apartment she said in a raised voice; “Can you hear anything of what I am saying?”. “Yes, but can you hear me?”, the blind student replied. “Yeah, I can hear you if you talk louder” said the attendant (220919). In another situation the blind student asked the attendant; “How much can you see?”. The attendant answered; “Well not much, do you see anything?”. “No, I don't” the blind student responded (230918-3). These are short conversations, but signal the students had a caring intention towards each other which helped them understand their respective limitations. Communicating needs could also be subtler, in one example the blind student was surprised by the effect of the suit on her balance and said; [not explicitly targeted at the attendant], “Oh God, my balance is really off!”. “Are you OK?” the attendant asked her (220919-3). This situation illustrates that helpful conversations could involve voicing a limitation (poor balance). In this case, attention was given to this articulation and there was a verbal response.

4.3.2. Communication breakdown

A breakdown in communication related to miscommunication such as not being able to hear each other clearly or misinterpreting what was being said. In one simulation, differences in height between the students seemed to play a role in miscommunication. The attendant was significantly taller and when the blind students spoke, he misheard or did not hear at all. When they were in the elevator, he had to bend so far down that they bumped their heads together (220919-2). Another aspect of mishearing was when the attendant was directed towards or away from the blind student. In one situation the attendant spoke in a low voice and faced away from the blind student, which prompted an irritated response; “I can't hear you!” from the blind student (240205). Other examples were when the blind student voiced their need for orientation or they repeated a question but were met with silence. These conversations were observed at various points in the simulation. In one simulation, the attendant only spoke to the blind student on two occasions in almost 4 min, saying: “We are going straight ahead” when leaving the changing room, and “We are taking the elevator”, just as the students reached the doors of the elevator going down to the main floor. No words were exchanged about obstacles, such as a door leading to the elevator or threshold, and no feedback were given where they were going (230918-1). This sequence illustrates how silence can reinforce the attendant's power and the blind student's withdrawal. Another aspect of poor communication was manifested in the attendant's use of unhelpful instructions when navigating and orientating in the environment. Typical of these situations was the attendant's use of verbal directions such as “here” or “there”, although these directions were useless to the person experiencing blindness. In one situation for example the two students reached the elevator and the attendant leaned in front of their peer and said; “There should be a button *here*”, but the blind student had no idea they were even standing in front of an elevator door (240220-1).

5. Discussion

This study explored age suit simulation with a focus on interactions and sheds light on how health problems can influence the interaction and relation between two persons. This focus is innovative and novel and expands the use of age suit simulation. The context of the simulations of this study resonates with Bertogg and Strauss (2020) who state that living and dealing with health problems is a common shared experience between older persons, where the less functionally limited person often cares for their spouse. As care needs become more intense, the need to share the care responsibilities with a professional caregiver is the only option, and this shared arrangement is complex.

The implication that the RN should be part of this arrangement signifies a holistic perspective on long-term health problems which resonates with person-centred care and includes taking the perspective of family members into account (Ekman et al., 2021). The findings show two distinct approaches how the students worked together. It is plausible that students who worked well together also were more problem solving oriented whereas students who became distant focused more on

the limitations. On this note, research shows that simulations with a focus on physical impairments in nursing education can be useful to raise awareness and empathy but often lack a representative lived experience that encompasses structural barriers to participation in society (Ozkara San et al., 2022; Nario-Redmond et al., 2017). Accordingly, recommendations have been made to include debriefing and reflection but also include representative input from the community and to focus on possibilities rather than functional limitations. Nevertheless, positive outcomes have also been shown to come from such simulations, such as students' improved communication skills and confidence, as well as increased empathy and knowledge about impairments (Carman and Lim, 2025). The interactions observed in the theme *Detached from each other* show students being uncomfortable with each other in the simulation. However, from a pedagogical view, experiential learning requires the learner to be exposed to a situation that disrupts their habitual everyday experience because this disruption is the necessary entry point that sparks reflection in the first place (Kolb and Kolb, 2018). Moreover simulating with impairments should be considered as complementing other didactic methods in the curriculum (Silverman et al., 2018).

As seen in the main theme *Pulling through together* and sub-themes *Trial and error* and *being one step ahead*, students found ways to navigate daily life together, where the attendant took it upon themselves as the less functionally impaired person to care for the blind student. Similar observations are highlighted in other research which also shows that spousal caregiving can be a lonely experience (Ornstein et al., 2019) and affects the relationship negatively over time (Happich et al., 2022). One example is adapting to each other's health problems, which includes the intention to create new strategies for everyday tasks involving both persons (Riekkola et al., 2019). Finding new strategies ties in with the findings of *Trial and error* where students were determined to carry out the scenarios in creative ways. This mindset of adapting to health problems ties in with the concept of communal coping, which occurs when health problems affect the couple as a whole and prompt collaborative actions (Rentscher, 2019). Therefore, age suit simulation can be relevant in understanding older persons' health care needs as a shared experience. Arguable and as highlighted in the theme *Pulling through together* supports the pedagogical value of the simulations, and seem to align with recommendations where there is a focus on success and possibilities rather than barriers (Silverman et al., 2018). In addition, the design of the present study rests on ELT where reflection is an essential part of the learning process. As highlighted in another study the pedagogical value of age suit simulation is recognised in the students' reflections and insights about the value of giving enough time and being present when interacting with older persons, as well as their insights about the unique care environment of a person's home (Bouwmeester Stjernetun et al., 2024a). Furthermore, in the reflection the blind person and attendant also provide feedback to each other. The findings show that some students improved their skills of interacting, guiding and communicating with a blind person, which supports previous research suggestions (Silverman, 2015). In addition, the pre analysis interviews confirmed many aspects of the study's findings, for example, the importance of developing a good rapport between attendant and blind person, and that the attendant should never take over but rather support the blind person in being as autonomous as possible. The legally blind person also shared her experience of feeling insecure around persons who had no experience of guiding a visually impaired person. An important insight she provided was that there are no certified attendants in home care; the attendants are care givers who may have no training in guiding blind persons whatsoever. The pedagogical value of the present study is therefore that it offers a unique opportunity for students to develop interpersonal and practical skills in a situation in which they interact with a person with multiple health problems including sensory impairments.

Furthermore, previous research also (Antonelli et al., 2020) suggests that incorporating a shared perspective provides a more accurate description of a couple's care needs, giving health care providers insight into how to support and strengthen mutuality within the relationship (Riekkola et al., 2024). The theme *Dialogue is key when adapting to health problems* highlights the consequences of communicating well or poorly when experiencing health problems. Interestingly some students managed to improve their communication and adapt to each other's health problems in a learning process observed throughout the simulation. The hands-on experience of learning through experience is also the hallmark of experiential learning (Kolb, 2014). In comparison, another study (Mohammed and Shaban, 2025) stressed the particular importance of improving nursing students' interpersonal skills with older persons because of barriers such as long-term diseases and cognitive impairments. The findings showed that simulations were appreciated as a unique opportunity for students to improve and become more confident when communicating with older persons. Interpersonal skills are also described as among the broader skills of the RN (Larsson Gerdin et al., 2021) as well as a prerequisite for performing person-centred care (McCormack and McCance, 2006), and they are highlighted in the nursing ethical code (International Council of Nurses, 2021). In regard to the simulation of blindness, previous research indicates that such simulations do not take not account being blind for many years (Silverman, 2015; Silverman et al., 2018). Even so, first-hand experience of simulating a health problem can be useful for students to learn about the adaptations a person with health problems makes to manage everyday life (Silverman et al., 2018). In addition, simulating using the personas of being blind and an attendant can help students learn about the needs of a blind person and develop skills in how to assist them. It can be argued that students' interactions described in the theme *Detached from each other*, were dominated by the impairment being simulated. Building on that point, blind persons can be met with low expectations because of their impairment (Bulk et al., 2020). In the current study, the blind student was sometimes placed as a bystander and kept at arm's length rather than included as an active participant. It is plausible that the attendants distancing themselves from the blind students represented an expression of low expectations. With this in mind, the experiential learning strategy of age suit simulation can be valuable in nurse education to reveal such conceptions.

Furthermore, being an attendant to the blind can be a novel strategy for nursing students to develop their skills in guiding a blind or visually impaired person. Similarly, other research shows that when simulations in nurse education are built on the pedagogy and framework of experiential learning it can provide relevant skills training (McNamara, 2015) and improve communication skills when educating older persons (Torkshavand et al., 2020). An important concept in experiential learning is the learning space, which represents a challenging but safe and supportive environment where the students' experience is respected (Gencel et al., 2021). In the present study, the context of the simulations included all the above aspects in a realistic home environment. Learning in a relevant context is also advocated by nurse philosopher Patricia Benner who stresses that experiential knowledge is always contextual (Benner, 2015). From a broader perspective, the age suit simulations can be seen as a concrete example of merging Benner's philosophy of learning through practice with the pedagogy of experiential learning in the context of gerontology and geriatrics in nurse education. This approach can have a significant impact on nursing students' insight and understanding of older persons.

6. Strengths and limitations

This study has a number of strengths as well as some limitations that should be acknowledged when considering the findings. The observer in this study was also a teacher to the students, which is recognised as a power imbalance and a possible limitation. However, in regards to potential researcher influence, as observed by the researcher recording the interactions, students rarely took initiative to talk or call on their attention, rather the students were observed to be immersed in the simulation. Also, as shown in the findings and especially in “detached

from each other", students did not seem to have an agenda to "please the teacher". Bias may however still be considered a limitation in this study, but at the same time in reflexive thematic analysis it is assumed that the method is influenced by the researcher (Braun and Clarke, 2023). In regard to gender, there were substantially fewer men than women; however, investigating gender differences was not within the scope of this study but would be of interest for future studies. Another limitation is the nature of the observations because the design choice does not include the students' own perspectives on their experience. However, a future study is planned including the students' reflections on the experience of being blind and an attendant to the blind. Another strength of the study was that the design of the simulations was based on the theory of experiential learning, which is relevant for educational purposes.

7. Conclusions

The findings of this study can be used to raise awareness of the value of using age suit simulation in nursing education to increase understanding of ageing with health problems such as blindness and being dependent on another person in daily life, as well as being an attendant with one's own health problems. The findings show how vision and hearing impairment can manifest in interactions between a blind person and an attendant in relation to other common health problems. Age suit simulation can therefore be an experiential teaching method in nurse education to reveal how these impairments impact communication and the challenges of adapting to each other's strengths and weaknesses. Building upon this point, the simulations provide unique experiential learning opportunities to help students develop skills in how to guide a blind person in the context of a safe home environment and achieve useful insight into being blind. The findings can also be used to support students' understanding of informal caregivers as well as understanding of long-term health problems as a shared experience between the attendant and the person being guided. A deeper and broader understanding of the impact of health problems in daily life in a home context can expand students' knowledge of how to provide person-centred care to older persons to promote and preserve health and well-being. This study also provides insights and suggestions how to design simulations involving impairments.

CRediT authorship contribution statement

Björn Bouwmeester Stjernetun: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization. **Jenny Hallgren:** Supervision, Methodology, Conceptualization. **Elzana Odzakovic:** Supervision, Conceptualization. **Catharina Gillsjö:** Writing – review & editing, Supervision, Methodology, Conceptualization.

Funding

This work was supported by the Kamprad Family Foundation for Entrepreneurship, Research & Charity in Sweden (grant number 20210227). It was also supported by the School of Health Sciences, University of Skövde, Sweden.

Declaration of competing interest

None.

Acknowledgements

The authors would like to give a special thanks to the participants and funders of Skaraborg Health Technology Center who made this study possible.

References

Antonelli, M.T., Grace, P.J., Boltz, M., 2020. Mutual caregiving: living meaningfully as an older couple. Int. J. Older People Nursing 15 (4), e12340. https://doi.org/10.1111/opn.12340.

Benner, P., 2015. Curricular and pedagogical implications for the Carnegie study, educating nurses: a call for radical transformation. Asian Nurs. Res. 9 (1), 1–6. https://doi.org/10.1016/j.anr.2015.02.001.

Benner, P., 2022. Overcoming Descartes' representational view of the mind in nursing pedagogies, curricula and testing. Nurs. Philos. 23 (4), e12411. https://doi.org/10.1111/nup.12411.

Bertogg, A., Strauss, S., 2020. Spousal care-giving arrangements in Europe. The role of gender, socio-economic status and the welfare state. Ageing Soc. 40 (4), 735–758. https://doi.org/10.1017/S0144686X18001320.

Bouwmeester Stjernetun, B., Gillsjö, C., Odzakovic, E., Hallgren, J., 2024a. "It's like walking in a bubble", nursing students' perspectives on age suit simulation in a home environment–group interviews from reflection seminars. BMC Nurs. 23 (1), 124. https://doi.org/10.1186/s12912-024-01792-5.

Bouwmeester Stjernetun, B., Hallgren, J., Gillsjö, C., 2024b. Effects of an age suit simulation on nursing students' perspectives on providing care to older persons - an education intervention study. Educ. Gerontol. 1–14. https://doi.org/10.1080/03601277.2023.2258051.

Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. Qual. Res. Psychol. 3 (2), 77–101. https://doi.org/10.1191/1478088706qp063oa.

Braun, V., Clarke, V., 2019. Reflecting on reflexive thematic analysis. Qual. Res. Sport, Exerc. Health 11 (4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806.

Braun, V., Clarke, V., 2021. One size fits all? What counts as quality practice in (reflexive) thematic analysis? Qual. Res. Psychol. 18 (3), 328–352. https://doi.org/10.1080/14780887.2020.1769238.

Braun, V., Clarke, V., 2022. Conceptual and design thinking for thematic analysis. Qual. Psychol. 9 (1), 3. https://doi.org/10.1037/qup0000196.

Braun, V., Clarke, V., 2023. Toward good practice in thematic analysis: avoiding common problems and be(com)ing a knowing researcher. Int. J. Transgender Health 24 (1), 1–6. https://doi.org/10.1080/26895269.2022.2129597.

Braun, V., Clarke, V., Hayfield, N., 2022. 'A starting point for your journey, not a map': Nikki Hayfield in conversation with Virginia Braun and Victoria Clarke about thematic analysis. Qual. Res. Psychol. 19 (2), 424–445. https://doi.org/10.1080/14780887.2019.1670765.

Buchan, J., Catton, H., 2023. Recover to Rebuild. Investing in the Nursing Workforce for Health System Effectiveness. International Council of Nurses, Geneva.

Bulk, L.Y., Smith, A., Nimmon, L., Jarus, T., 2020. A closer look at opportunities for blind adults: impacts of stigmatization and ocularcentrism. Br. J. Vis. Impair. 38 (3), 270–283. https://doi.org/10.1177/0264619620911.

Carman, L., Lim, F., 2025. Simulation-based learning about care of people with disabilities: an integrative review. Nurse Educ. 50 (3), E146–E151. https://doi.org/10.1097/NNE.0000000000001788.

Choi, Y.-J., Um, Y.-J., 2022. The effects of a home-visit nursing simulation for older people with dementia on nursing students' communication skills, self-efficacy, and critical thinking propensity: quantitative research. Nurse Educ. Today 119, 105564. https://doi.org/10.1016/j.nedt.2022.105564.

Dai, F., Liu, Y., Ju, M., Yang, Y., 2021. Nursing students' willingness to work in geriatric care: an integrative review. Nurs. Open 8 (5), 2061–2077. https://doi.org/10.1002/nop2.726.

Ekman, I., Ebrahimi, Z., Olaya, Contreras P., 2021. Person-centred care: looking back, looking forward. Eur. J. Cardiovasc. Nurs. 20 (2), 93–95. https://doi.org/10.1093/eurjcn/zvaa025.

Fazeli, S., Sabetti, J., Ferrari, M., 2023. Performing qualitative content analysis of video data in social sciences and medicine: the visual-verbal video analysis method. Int. J. Qual. Methods 22. https://doi.org/10.1177/16094069231185.

Garbrah, W., Välimäki, T., Palovaara, M., Kankkunen, P., 2017. Nursing curriculums may hinder a career in gerontological nursing: an integrative review. Int. J. Older People Nursing 12 (3), e12152. https://doi.org/10.1111/opn.12152.

Gencel, I.E., Erdogan, M., Kolb, A.Y., Kolb, D.A., 2021. Rubric for experiential training. Int. J. Progress. Educ. 17 (4), 188–211. https://doi.org/10.29329/ijpe.2021.366.13.

Gerhardy, T.H., Schlomann, A., Wahl, H.-W., Schmidt, L.I., 2022. Effects of age simulation suits on psychological and physical outcomes: a systematic review. Eur. J. Ageing 19 (4), 953–976. https://doi.org/10.1007/s10433-022-00722-1.

Gold, R.L., 1958. Roles in Sociological Field Observations. Soc. Forces 36 (3), 217–223. https://doi.org/10.2307/2573808.

Griffin, C., Bengry-Howell, A., 2017. Etnography. In: Willig, C., Rogers, W.S. (Eds.), The SAGE Handbook of Qualitative Research in Psychology, 2nd ed. Sage.

Händler-Schuster, D., McBride-Henry, K., Müller, G., Melloh, M., 2023. Resources and resilience factors: how advanced practice nurses can promote resilience in hearing and visually impaired people – a grounded theory perspective from Switzerland. Z. Evid. Fortbild. Qual. Gesundhwes. 177, 18–25. https://doi.org/10.1016/j.zefq.2022.12.005.

Happich, F., König, H.-H., Hajek, A., 2022. Spousal care and its effect on partnership characteristics – a longitudinal analysis of spousal caregiving and care receipt in Germany. Scand. J. Caring Sci. 36 (1), 109–119. https://doi.org/10.1111/scs.12968.

Henderson, D., Sewell, K.A., Wei, H., 2020. The impacts of faculty caring on nursing students' intent to graduate: a systematic literature review. Int. J. Nurs. Sci. 7 (1), 105–111. https://doi.org/10.1016/j.ijnss.2019.12.009.

Hovlin, L., Hallgren, J., Dahl Aslan, A.K., Gillsjö, C., 2022. The role of the home health care physician in mobile integrated care: a qualitative phenomenograpic study. BMC Geriatr. 22 (1), 554. https://doi.org/10.1186/s12877-022-03211-3.

Huisman-de Waal, G., Feo, R., Vermeulen, H., Heinen, M., 2018. Students' perspectives on basic nursing care education. J. Clin. Nurs. 27 (11−12), 2450–2459. https://doi.org/10.1111/jocn.14278.

Hung, W.W., Ross, J.S., Boockvar, K.S., Siu, A.L., 2012. Association of chronic diseases and impairments with disability in older adults: a decade of change? Med. Care 50 (6), 501–507. https://doi.org/10.1097/MLR.0b013e318245a0e0.

International Council of Nurses, 2021. The ICN Code of Ethics for Nurses Revised 2021 (Geneva, Switzerland).

Kolb, D.A., 2014. Experiential Learning: Experience as the Source of Learning and Development. FT press.

Kolb, A., Kolb, D., 2018. Eight important things to know about the experiential learning cycle. Aust. Educ. Lead. 40 (3), 8–14.

Larsson Gerdin, A., Hellzén, O., Rising-Holmström, M., 2021. Nurses' experiences of encounters in home care: a phenomenological hermeneutic study. Int. J. Qual. Stud. Health Well Being 16 (1), 1983950. https://doi.org/10.1080/17482631.2021.1983950.

Lee, O., Park, J., 2022. Association between successful aging activities and perceived health among older adults with hearing and/or vision impairments. J. Disabil. Policy Stud. 32 (4), 280–289. https://doi.org/10.1177/1044207321998353.

Lincoln, Y.S., Guba, E.G., 1985. Naturalistic Inquiry. Sage.

Maresova, P., Javanmardi, E., Barakovic, S., Barakovic Husic, J., Tomsone, S., Krejcar, O., et al., 2019. Consequences of chronic diseases and other limitations associated with old age – a scoping review. BMC Public Health 19 (1), 1431. https://doi.org/10.1186/s12889-019-7762-5.

McAllister, M., Ryan, C., Dodd, L., Goldenberg, M., Brien, D.L., 2020. A thematic literature review of innovative strategies to prepare nursing students for aged-care. Nurse Educ. Today 87, 104355. https://doi.org/10.1016/j.nedt.2020.104355.

McCloskey, R., Yetman, L., Stewart, C., Slayter, J., Jarrett, P., McCollum, A., et al., 2020. Changes in nursing students' knowledge, attitudes and interest in caring for older adults: a longitudinal cohort study. Nurse Educ. Pract. 44, 102760. https://doi.org/10.1016/j.nepr.2020.102760.

McCormack, B., McCance, T.V., 2006. Development of a framework for person-centred nursing. J. Adv. Nurs. 56 (5), 472–479. https://doi.org/10.1111/j.1365-2648.2006.04042.x.

McCormack, B., McCance, T., Dewing, J., 2021a. The person in person-centred practice. In: Bulley, C., Brown, D., McMillan, A., Martin, S. (Eds.), Fundamentals of Person-centred Healthcare Practice. John Wiley & Sons, pp. 4–11.

McCormack, B., McCance, T., Martin, S., 2021b. What is person-centredness? In: Bulley, C., Brown, D., McMillan, A. (Eds.), Fundamentals of Person-centred Healthcare Practice. John Wiley & Sons, pp. 14–22.

McNamara, N., 2015. Preparing students for clinical placements: the student's perspective. Nurse Educ. Pract. 15 (3), 196–202. https://doi.org/10.1016/j.nepr.2014.11.011.

Mohammed, S.A.A.K., Shaban, M., 2025. Enhancing communication and empathy skills in geriatric care: nurses' reflections on simulation-based training for patient interaction and education. J. Clin. Nurs. https://doi.org/10.1111/jocn.17662.

Moll, W., . GERonTologic simulator GERT. https://www.age-simulation-suit.com/2024. Available from: https://www.age-simulation-suit.com/.

Nario-Redmond, M.R., Gospodinov, D., Cobb, A., 2017. Crip for a day: the unintended negative consequences of disability simulations. Rehabil. Psychol. 62 (3), 324. https://doi.org/10.1037/rep0000127.

Nelson, E.E.C., Spence, A.D., Gormley, G.J., 2023. Stepping into the shoes of older people: a scoping review of simulating ageing experiences for healthcare professional students. Age Ageing 52 (12). https://doi.org/10.1093/ageing/afad235.

Ornstein, K.A., Wolff, J.L., Bollens-Lund, E., Rahman, O.-K., Kelley, A.S., 2019. Spousal caregivers are caregiving alone in the last years of life. Health Aff. 38 (6), 964–972. https://doi.org/10.1377/hlthaff.2019.00087.

Ozkara San, E., Marx, K.A., Latimer, B., Robertiello, G., Pasklinsky, N., 2022. The use of clinical simulation to address disability content inclusion in nursing education: a review of the literature. Clin. Simul. Nurs. 71, 112–127. https://doi.org/10.1016/j.ecns.2022.03.008.

Rentscher, K.E., 2019. Communal coping in couples with health problems. Front. Psychol. 10, 398. https://doi.org/10.3389/fpsyg.2019.00398.

Riekkola, J., Rutberg, S., Lilja, M., Isaksson, G., 2019. Strategies of older couples to sustain togetherness. J. Aging Stud. 48, 60–66. https://doi.org/10.1016/j.jaging.2019.01.005.

Riekkola, J., Isaksson, G., Lilja, M., Rutberg, S., 2024. Possibilities and challenges for older couples to continue ageing in place. J. Aging Stud. 69, 101229. https://doi.org/10.1016/j.jaging.2024.101229.

Silverman, A.M., 2015. The Perils of Playing Blind: Problems With Blindness Simulation and a Better Way to Teach About Blindness. https://doi.org/10.5241/5-81.

Silverman, A.M., Pitonyak, J.S., Nelson, I.K., Matsuda, P.N., Kartin, D., Molton, I.R., 2018. Instilling positive beliefs about disabilities: pilot testing a novel experiential learning activity for rehabilitation students. Disabil. Rehabil. 40 (9), 1108–1113. https://doi.org/10.1080/09638288.2017.1292321.

Stock, K.L., Kolb, D., 2021. The experiencing scale: an experiential learning gauge of engagement in learning. Experiential Learn. Teach. Higher Educ. 4 (1), 3–21. https://doi.org/10.46787/elthe.v4i1.3427.

Swedish Government Official Reports, 2020. God och nära vård - en reform för ett hållbart hälso- och sjukvårdssystem [Good quality, local health care - a reform for a sustainable health care system]. Available from: https://www.regeringen.se/contentassets/320f37078d854712ab89e8185466817b/god-och-nara-vard-en-reform-for-ett-hallbart-halso–och-sjukvardssystem-sou_2020_19_webb.pdf.

Justitiedepartementet (Ed.), 2017. Swedish Health and Medical Services Act. Hälso- och Sjukvårdslagen (SFS 2017: 30) [The Health and Medical Services Act].

Ten Hoeve, Y., Castelein, S., Jansen, G., Roodbol, P., 2017. Dreams and disappointments regarding nursing: student nurses' reasons for attrition and retention. A qualitative study design. Nurse Educ. Today 54, 28–36. https://doi.org/10.1016/j.nedt.2017.04.013.

The Swedish Parliament, 1990. In: Committee Ts (Ed.), Proposition 1990/91:14 [om ansvaret för service och vård till äldre och handikappade m. m.].

Torkshavand, G., Khatiban, M., Soltanian, A.R., 2020. Simulation-based learning to enhance students' knowledge and skills in educating older patients. Nurse Educ. Pract. 42, 102678. https://doi.org/10.1016/j.nepr.2019.102678.

Venables, H., Wells, Y., Fetherstonhaugh, D., Wallace, H., 2023. Factors associated with nursing students' attitudes toward older people: a scoping review. Gerontol. Geriatr. Educ. 44 (1), 131–150. https://doi.org/10.1080/02701960.2021.2012466.

World Health Organization, 2015. World Report on Ageing and Health. World Health Organization.

World Health Organization, 2021. Ageing and Health.