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TITLE

PROTOCOL FOR AN ACTION RESEARCH STUDY: THE DEVELOPMENT OF A LEARNING PROGRAMME FOR ON-THE-JOB LEARNING AND REFLECTION ON GUIDELINE USE FOR DISTRICT NURSES AND DISTRICT NURSING TEAMS

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Conflict of interest: None.

Ethical considerations

The study was approved by the Ethical Committee Research of the HU University of Applied Sciences Utrecht (reference number 165-001-2022 and reference number 157-001-2022). All participants will be informed that they can withdraw from the study at any time and will be asked to provide their written consent.

Keywords: District nursing, learning program, team learning, leadership development, guideline use, action research

Word count: 452 (abstract including strengths and limitations of this study); 5300 (main text).

ABSTRACT

Aim To enhance district nursing teams working with guidelines and support a learning attitude, we designed the LEARN program: Learning And Reflection for Nurses. The objective is to describe the program's study protocol and our approach to evaluation.

Introduction District nurses provide, together with their team, care to patients with a wide range of vulnerabilities who live at home for as long as possible. For such teams, with wide variation in staff levels, skill mix, and contract-hour differences, working with guidelines potentially supports the care

provision processes, improves consistency, and contributes to care quality. Guidelines can support evidence-based decision-making and are considered the key tool for translating knowledge into daily work practice. However, nurses' adoption and adherence to guidelines in practice remain suboptimal. Literature focusing on helping and hindering factors around guideline use does not consider a team perspective, which is characteristic of nursing, especially in the district. We designed the LEARN program: Learning And Reflection for Nurses to enhance district nursing teams working with guidelines and support a learning attitude.

Methodology and analysis We will develop two learning interventions for the LEARN program. Expansive learning is the lens through which we examine learning, emphasizing reflection as the primary learning strategy. An Action Research approach will be used to bring the two learning interventions into practice and for evaluation. We will follow the action spirals, with the consecutive phases of planning, acting, observing, and reflecting on the processes to adapt the program to the particular situation.

Ethics and dissemination Ethics approval from the Ethical Committee Research of the HU University of Applied Sciences Utrecht has been obtained (reference number 165-001-2022 and reference number 157-001-2022). This research will provide relevant, evidence-based guidance on learning to work with guidelines in district nursing practice. Findings will be disseminated as a continuous process throughout the research and will target the following audiences: (1) participating organizations and their nursing staff, (2) (district) nurses, policymakers, and strategic decision-makers in the Netherlands, and (3) the academic community.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This study will develop and evaluate learning interventions to enhance district nursing teams working with guidelines and support district nurses in developing leadership practices.

- We will develop two learning interventions that will draw on Action Research theory, in which expansive learning is induced by reflection as the primary learning strategy.
- Using an Action Research approach for evaluation, we will iteratively adapt the learning interventions to the particular situation to optimize learning and support working with guidelines.
- Although we proposed a learning intervention with theoretical underpinnings, the program is not set in stone but can be adapted based on learning processes, team dynamics, and new insights, which may lead to improved guideline use in daily work practice.

INTRODUCTION

Worldwide, the demand for care delivery at home is rising and is predicted to further increase in the coming decade. This is due to a rapidly growing ageing population, increasingly complex care demand, shortening the length of hospital stay, strong focus on ageing at home instead of residential care, and healthcare cost containment (Jarrín et al., 2019; Maybin et al., 2016; Kroneman et al., 2016; OECD, 2017). As a result, patients with a wide range of physical diseases, comorbidities, and psychological vulnerabilities stay at home as long as possible. District nurses are seen as the pivotal care providers in the community who provide complex care to these patients (OECD, 2017). They are leading in district nursing teams which include not only district nurses (European Qualification Framework [EQF] level 6) but other healthcare professionals as well, such as vocational nurses (EQF level 4), certified nurse assistants (EQF level 3), and sometimes health and welfare assistants (EQF level 1 and 2) (Van Kraaij et al., 2022). Together, they form teams with high variation in staff levels, skill mix, and differences in contract hours (Larsson et al., 2022). All these teams provide district nursing care, which can be described as any technical, medical, supportive, or rehabilitative nursing care intervention or assistance with personal care for (older) people living at home (Van Eenoo et al., 2016). For such teams, with wide variation in staff levels, skill mix, and differences in contract hours, working with guidelines potentially supports the care provision processes, improves consistency, and contributes to care quality.

Guidelines are developed to support evidence-based decision-making (Institute of Medicine, 2011). They improve health outcomes and processes of care in medicine and nursing (Grimshaw, 1993; Spoon et al., 2020; Cassidy et al., 2021) and are considered the key tool to translating knowledge into daily work practice (Pronovost, 2013). Since nurses are the largest professional group in health care systems worldwide and within the community positioned as the key care providers, they have considerable potential to apply guidelines in daily work practice and add to the quality of care (Lugtenberg, Burgers & Westert, 2009). Several nursing guidelines have recently been developed in the Netherlands to support nurses in routine care provision (Netherlands Organization for Health Research and Development [ZonMw]). This set of new monodisciplinary guidelines addresses problems frequently encountered by nurses with a specific focus on district nursing care, such as loneliness among older people (Gierveld et al., 2018; Machielse, 2015) and caregiver burden (Anker-Hansen et al., 2018; De Boer et al., 2019). Although the development of guidelines may be necessary, they are insufficient to ensure evidence-based decision-making (Braithwaite et al., 2020) because adopting and adhering to guidelines by nurses in practice remains suboptimal (Cassidy et al., 2021).

An important and necessary step in using guidelines in daily work practice may be the active involvement of end-users (Harvey et al., 2023). Education has frequently been used as a strategy in nursing to involve end-users and to learn them how to use a guideline in a particular context (Spoon et al., 2020; Cassidy et al., 2021). An integrative review of barriers and facilitators for guideline use in nursing (Jun et al., 2016) demonstrates that, in addition to changing nurses' attitudes and perceptions, education at the start of the implementation of guidelines and ongoing education throughout the process are necessary to increase nurses' knowledge of these guidelines. Education elicits learning, mediating how certain routines, procedures, structures, and systems work in a particular context, potentially leading to a change in nurses' particular organizational work practice (Engeström, 1987). For example, members of district nursing teams can learn how to work with guidelines and adjust elements from the guidelines to their particular context.

However, the integrative review of Jun et al. (2016) does not consider the team perspective when describing the facilitators and barriers around guideline use, which is so characteristic of nursing (Yost

et al., 2015), especially in the district. In district nursing care, for example, nurses are organized in teams with specific procedures and settings and responsible for a certain group of patients. The strong emphasis on teams means that care decisions are only sometimes made solely. Therefore, education should focus on both the group and the individual. However, little is known about how education on a team level contributes to guideline use.

Facilitation may be another essential aspect of supporting nurses to work with guidelines (Cassidy et al., 2021; Cranley et al., 2017). Facilitation is a technique where an individual makes things easier for others, for example, the adoption of a guideline, and helps members of district nursing teams to change their way of thinking and working (Harvey et al., 2002; Dogherty et al., 2010). Facilitators can exert various educational strategies, such as reflection, to induce change. Reflection, described as 'looking for the meaning of an event, the meaning of a history' (Heidegger, 1994), may be a suitable learning strategy that facilitators can use to enable teams to learn from experiences in daily work, which can consecutively guide the change process (Wald, 2015). According to Dogherty et al. (2010), leadership is another essential component of facilitation and is important in a context where nurses are supposed to work with guidelines. Leadership can be seen as a relational practice in which nurses engage with others to set directions, show agency, and get things moving (Martini et al., 2023).

So far, little is known about how an educational program can support learning to work with guidelines in daily work practice in district nursing teams. We, therefore, designed the LEARN program: Learning And Reflection for Nurses to enhance district nursing teams working with guidelines and support a learning attitude. This protocol aims to describe the program's development and components and our approach to evaluation.

METHODOLOGY

We will develop two learning interventions for the LEARN program. The first intervention targets district nursing teams focuses on working with guidelines and supports a collective learning attitude. The second learning intervention targets specifically district nurses from various care organizations. We

will develop a leadership training to equip district nurses to increase their impact and role in adopting new knowledge. Elements of this program are derived from a previously executed nationwide leadership program for district nurses in the Netherlands (Wolbers et al., 2021). We will add peer-to-peer shadowing (Lalleman et al., 2017) and a mentoring trajectory (Hafsteinsdóttir et al., 2020) alongside the leadership program.

Theoretical frameworks

The following theoretical frameworks will be considered to build the learning interventions: action research theory and expansive learning theory.

Action Research theories

We will choose an Action Research (AR) approach to develop, adjust, and evaluate the LEARN program. *"AR can be described as social research carried out by a team that encompasses a professional action researcher and the members of an organization seeking to improve the situation. AR promotes broad participation in the research process and supports action leading to a more just, sustainable, or satisfying situation for the stakeholders"* (Greenwood & Levin, 2007, p. 3). There are multiple reasons to choose an AR approach as the basis for both interventions. First, by 'doing' AR, members of district nursing teams are supported to develop a learning attitude and contribute to a meaningful change in clinical practice. This bottom-up procedure promotes active collaboration, learning, and practical organizational problem-solving (Kemmis & McTaggart, 2007). Hence, it comprises a learning process for everybody involved, and it thus can be seen as an educational intervention (Van Lieshout et al., 2021). Second, AR is a social research design that enables us to observe and understand the process of how a team can learn to work with a guideline (Van Lieshout et al., 2021). Last, the action s with the characteristic consecutive phases of reflecting, planning, acting, and observing are helpful because of their emergent character (McNiff, 2017), which provides flexibility in the design and, therefore, the opportunity to d the LEARN program to the particular situation. Thus, the action spirals will be used as the basis for designing the sessions in the team learning intervention

and guide the process for shaping the content to fit the district nurses' learning process in the leadership training.

Learning theories

Since learning is a crucial mechanism in AR, we zoom into the concept of learning. In line with Wells (2011), we combine the AR approach with expansive learning because of its focus on collective expertise and transformation. Expansive learning refers to a collective, multi-voiced learning process in which an activity system, e.g., a district nursing team, resolves its pressing internal contradictions by creating new forms of knowledge and activity (Engeström, 2011; Engeström, 2015). For example, district nursing teams discuss and negotiate their common activity around the care for lonely patients and learn what elements from the guidelines suit their patients and how to shape it for usability in daily practice. The vital concept of expansive learning is derived from Vygotsky's Zone of Proximal Development (Vygotsky, 1978). This theory focuses on what a learner can achieve, accompanied by actively engaging others, compared to what they can achieve independently. Expansive learning emphasizes a community of learners, not the individual learner. It is, therefore, the result of social-human interactions within a particular material, cultural, and historical context of work practices. It can be seen as the driving force for meaningful change (Engeström & Pyörälä, 2021). Therefore, expansive learning is a suitable mechanism for district nursing teams to learn how to work with guidelines in daily work. Also, expansive learning fits in the leadership training since district nurses from different organizations support each other to learn how to shape their personal leadership development.

Moreover, as reflectivity is a crucial phase within the action spirals in Action Research, we will emphasize reflection as the primary learning strategy in both learning interventions to catalyze the collaborative exchange of experiences and learn from them. Reflexivity can be seen as a self-including mental activity in which an individual monitors and reflects on social interactions involving oneself and others and stems from the person's ongoing internal dialogue (Archer, 2007; Bakhtin, 2010). A particular mode of reflexivity is meta-reflexivity, which encompasses the individual's inner professional and private dialogue mingled with others within a social surrounding (Archer, 2012). The dialogue may be mediated by interpersonal trust and other positive emotions among team members (Olson & Dadich,

2019), making it a valuable learning strategy in team and leadership interventions. Furthermore, it can be seen as a powerful learning strategy and a social mechanism. This social mechanism created by human interaction through inner dialogues with the self and others will when repeatedly placed on itself, clarify, analyze and refine one's understanding of the experienced complex difficulties (Baerheim & Ness, 2021) faced by district nursing teams around the care themes 'loneliness among older people' or 'overburdened caregivers'. Moreover, to use collective reflection as a learning strategy in the leadership program, one's own and others' experiences can be shared and discussed to induce and revive expansive learning cycles (Baerheim & Ness, 2021; De La Croix & Veen, 2018), After reflection, the action spirals can be used to induce action.

DESIGN

This study is designed as a learning intervention to support participants in developing a learning attitude and contribute to meaningful change in guideline use in clinical practice. We use the action spirals from AR as guidance for the team learning sessions to promote learning and change. This means that the phases of (1) plan, (2) do, (3) observe, and (4) reflect are applied as both a vehicle to promote learning and change and simultaneously as moments to collect the data for evaluation. The planning phase, for example, is when the educational plan will be created and designed based on the observation and reflection phase from the previously held session.

SETTING AND PARTICIPANTS

Our study will be conducted in three distinct district nursing care organizations in the urban environment of Utrecht (360.000 inhabitants), The Netherlands. The district nursing care organizations are all part of a formal network in the region [Academische Werkplaats in de wijk] that connects care organizations in the district with the University of Applied Sciences Utrecht and the University Medical Center Utrecht for research and innovation purposes (Korpershoek et al., 2022). Our research focuses on district nursing care teams and district nurses in particular. The teams will be selected with help from managers who work in the care organizations. They will also invite district nurses in the designated teams to attend the

leadership training. The composition and size of the participating district nursing teams depend on the district's size, population density, and the demographic characteristics of its inhabitants. Another essential factor that shapes the team composition is the concurrent shortage of healthcare professionals (Ministry of Health, Welfare and Sport, 2023). Teams are compelled to rely increasingly on temporary nurses, including bank nurses, float nurses, agency nurses, or nurse students.

RESEARCH PLAN AND GOVERNANCE

As illustrated in Figure 1, the study will be undertaken over 45 months, from March 2021 to January 2025. The leadership training will be executed and evaluated in two cohorts. The team learning intervention will be sequentially deployed and evaluated four times in various district nursing teams in three different care organizations. As a prerequisite for a team to participate in the team learning intervention, at least one of the team's district nurses must have participated in the leadership training.

For the team learning intervention, we will collaborate with a local manager within every care organization to fit the team learning program in their organizational context, discuss the practical relevance of the research, and address potential issues that might arise. We will also collaborate with the district nurse before and during the team sessions to discuss practical matters, benefit from the knowledge about this particular team, and incorporate that knowledge in the preparation materials for the team sessions. Moreover, as the team sessions progress, we will involve the district nurse in guiding the team sessions to gain a learning experience and practice leadership. The research team (including a professor in proactive eldercare, a professor in leadership, a professor in nursing science, and a lecturer in nursing with a focus on care ethics) will design the preliminary LEARN program. In the team learning program and the leadership training, lecturer AvO and researcher IW will take on the facilitator's role. In parallel with the execution of the team learning program and the leadership training, data collection and analysis will be carried out by the research team. Findings will inform the redesign of the intervention, the application, and the evaluation.

<Figure 1>

DESCRIPTION OF THE LEARNING INTERVENTIONS

Considering the learning objectives, the theoretical frameworks, and our previously gained insight about a leadership development program for district nurses, we designed a team learning program for district nursing teams and leadership training for district nurses. We will first describe the team learning program and zoom in on the content. Second, the leadership training will be described, and the individual mentoring trajectory and peer-to-peer shadowing will be addressed accordingly. The initial programs were designed in the spring of 2021.

The team learning program

The learning objective of the team learning program for district nursing teams is to learn how to work with the guideline 'loneliness' or 'caregiver burden.' The team learning program will include five sessions totaling thirteen hours for approximately five months. The team sessions will be held within the care organization and during working hours to lower the threshold for the team members. District nursing teams will be the target group, including district nurses, vocational nurses, certified nursing assistants, and helping aids. The format combines face-to-face sessions and learning on the job. Learning on the job is encouraged by sending a questionnaire via a mobile phone application at the end of the working week. Figure 2 illustrates the program's design. Ideally, the whole district nursing team should attend all the sessions, but due to cost constraints and the current nursing shortages, the entire team will be invited only for the first session. At the end of the first session, a core team encompassing 4-6 participants will be compiled based on voluntariness and motivation and will participate in subsequent sessions. They participate on behalf of the whole team and are asked to inform other team members actively.

<Figure 2>

Content of the team learning program

Before the serie of sessions start, an announcement in the form of an e-mail with the program's content and the appropriate nursing guidelines, accompanied by a video about the guidelines, will be sent to everyone who embodies the district nursing team. This gives them a first impression of the learning program and the chosen guidelines. Every session (except for the first session) should start with a summary of the previous session and end with a preview of the next session and an invitation to the team members to share their input for the next meeting.

The **first** session will focus on the gap between the actual and desired situation around the guidelines' care theme. In AR, it is common to investigate the actual situation first, then the desired situation, and then explore the gap between them (van Lieshout, 2021). The actual situation will be first examined with a focus group. Different questions will be asked, such as whether nurses recognize the guidelines' care theme/subject of the guideline in daily work practice, what kind of nursing interventions they usually undertake, and the experienced helping or hindering factors. This allows the facilitators to analyze how the district nursing team perceives the actual situation. Subsequently, the desired situation will be clarified by examining the team members' underlying values that are perceived as important given the subject of the guideline. The desired situation will be defined by values and reformulated as the team's 'collective ambition.'

In the **second** session, the core team will deal with the question of what the team's new standard around the chosen care theme would be. To answer this question, the core team will be asked to explore the guidelines and the described actions and, in turn, relate this to their actual situation and the formulated collective ambition. With this in mind, the team will be challenged to give practical meaning to the collective ambition and will eventually come to a new standard for the team. Subsequently, they are invited to think about the practical steps for the team and the organization to reach their standard and, more practically, how they will come to this. The facilitators support them in examining the nursing guidelines to shape and prioritize the subsequent steps.

The **third** session will focus on the team's steps to reach their new standard. Within this session, several parts of their daily work will be related to the guideline, such as how the team members document in the electronic patient record around the care theme and what they can learn from it. Also, by doing

the marshmallow challenge (Wujec, 2010), attention will be paid to how team members collaborate. Subsequently, new insights will be obtained by using group reflection. As a result of this reflection, additional steps that should be taken to achieve their new standard will be voiced. If necessary, the team can also adjust the collectively formulated new standard.

The **fourth** session focuses on the future and practicalities that can help or hinder reaching the teams' new standard. A plan of action for the whole district nursing team will be initiated for the long term. Using various educational methodologies, such as group discussion and mind mapping, the team will explore how the new standard can fit into existing work routines and what steps they can undertake to seduce every team member to align with the new standard.

Ideally, the **last** session will be about the team's learning achievements. Guided by a focus group with sticky notes and sheets on the wall, the core team will mention the successes and changes in how the work is changed regarding the guidelines' care theme. They are asked how the guideline's content is integrated into existing work structures and routines.

The leadership training

The leadership training aims to equip district nurses to increase their impact and role in adopting new knowledge. We hypothesize that the leadership training can work as a catalyst for change and better equip district nurses to support teams to actively change the daily work practice around the guidelines 'loneliness among older people' or 'caregivers burden'. Moreover, since LEARN is only temporary, we wish to continue the movement to induce change and equip district nurses who either work in the team or the organization to develop leadership practices.

The leadership training is a six-month inter-organizational expansive learning program for district nurses from different organizations. The training contains six face-to-face meetings with a total duration of 20 hours. The training is held outside the organizations to enable nurses to step back, zoom out from their daily work practice, and create headspace for learning and reflection. At every meeting, an expert will be invited to explore a theme using varied educational methodologies and start a

discussion. District nurses will be invited to participate in expert meetings, related assignments, and group reflections. Figure 3 illustrates the design and content of the training.

<Figure 3>

The starting point of the training will rely on the district nurses' experiences in daily work practice. Content areas of the meetings include leadership development, learning from patient data, learning from questioning, and coaching team members. The content areas are determined in advance, but the educational methodology will be tailored to the group's learning needs, and the leadership training's inter-organizational nature offers opportunities for mutual enrichment.

Individual mentoring trajectory

Alongside the leadership training, an individual mentoring trajectory will be initiated, inspired by the mentoring program of Hafsteinsdóttir et al. (2020). The goal of the mentoring program is to support the ongoing leadership development of the individual district nurse. The district nurses' actual learning needs will guide the individual mentoring trajectory, and the district nurse can meet the mentor six times (6 hours). The project team matches the individual district nurse with a specific mentor. The appointed mentors are experts in nursing and work as educators or researchers in subjects about district nursing care and long-term care or have an affinity to coaching. The appointed mentors are informed about the leadership training but will receive no further education to shape the mentoring trajectory.

Peer-to-peer shadowing

The leadership training allows peer-to-peer shadowing to encourage mutual enrichment and learning. Peer-to-peer shadowing focuses on variation in daily work practice and clinical leadership, reflection on roles, problem-solving strategies, and trigger learning processes that support leadership development. Lalleman et al. (2017) found that peer-to-peer shadowing facilitates collective reflection-in-action and

enhances an 'investigate stance' while acting for both the one who shadows and the one who is being followed. In the leadership training, peer-to-peer shadowing will occur at three different moments. The first encounter with peer-to-peer shadowing will be in meeting two, where participants receive information and instruction. The first moment of peer-to-peer shadowing runs for one hour, wherein the participants will be asked to shadow a peer participant from a different organization for one hour in daily practice in a moment with multiple contacts. The second moment of peer-to-peer shadowing is with the same peer-participant and runs for a half workday. The third moment of peer-to-peer shadowing is with another peer participant from another organization and runs again for a half workday.

EVALUATION

The evaluation will involve all the qualitative data collected from March 2021 to January 2025. Qualitative methods will enable a better understanding of the contexts and how a learning program unfolds and identify relevant hindrances or helping factors to enhance working with guidelines. For the final analysis, we will adopt a process-oriented temporal evaluation approach.

Data collection

Data will be collected through observations and focus groups during the team learning program and the leadership training. The observations during the sessions will focus on dialogue, verbalized perceptions, and participation. During the observations, written notes will be made (i.e., keywords, situations, quotes, short sentences) (Bryman, 2012), which will be structured into fieldnote reports afterward and treated as data. In some sessions, a focus group will be held to provide insight to the participants involved. For example, during the first session of the team learning program, a focus group will explore the actual and desired situation around the guidelines' care theme. Also, after every session, written reflections will be made by the researcher and the nurse lecturer [IW, AvO] to understand the observations better, and will serve as a diary. Moreover, the materials prepared before a session, such as educational blueprints, will

be treated as data. At the end of the study, a focus group will be held with all the district nurses who participated in the leadership training to evaluate the impact of the entire learning intervention.

During the team learning program, we will send out a short, tailored questionnaire via a mobile phone application to gain insight into the participants' learning moments on the job. In the weeks between the team sessions and at the end of every work week, the participants receive a notification on their mobile phones. The notification is accompanied by questions about whether and how the care theme 'loneliness among older people' or 'caregiver burden' has emerged in daily work practice, considering the learning processes underneath and subsequent actions that may arise from the specific situation related to the caring theme. Moreover, some questions are about whether and how the guideline of concern is used and what helped and hindered it. The questions will be tailored to the answers that the participants give. At the beginning of the second, third, and fourth team sessions, attention will be paid to highlight some of the answers given. This highlighting will potentially spark the conversation about a current work situation that may be used as a case during that team session.

Data analysis

Qualitative methods will allow us to investigate the potential impact of the learning program on how perspectives and practices of guideline use unfold in district nursing teams. Moreover, it provides the opportunity to research how a leadership training program for district nurses may contribute to showing leadership practices and how this helps to actively support teams to change the daily work practice around the care themes 'loneliness among older people' or 'caregivers burden.'

ETHICS AND SAFETY

The study has been approved by the Ethical Committee Research of the University of Applied Sciences Utrecht (reference number 165-001-2022 and reference number 157-001-2022). All participants will be

asked to provide their written consent before participating in either the team learning program or the leadership training. All participants will be informed that they can withdraw from the study at any time.

DISSEMINATION PLAN

Dissemination will be undertaken as a continuous process throughout the research. We will develop workshops, presentations, and summary documents to make them accessible to different audiences. For the participating organizations and their staff, we will organize a symposium to summarize our research activity and output and provide guidance on how to incorporate expansive learning in daily work practice best. We will develop user-friendly versions of our findings for the general Dutch nursing audience. For the academic community, we will produce research articles in peer-reviewed journals and conference presentations. Preliminary findings will also be regularly presented within the research centers (University of Applied Sciences Utrecht and University Medical Center Utrecht).

DISCUSSION

This article describes the development of the LEARN program for district nurses and their teams, which consists of two unique parts that support learning and reflection. The team learning program for district nursing teams aims to work with the guideline 'loneliness' or 'caregivers burden' in daily practice. The leadership training has the objective to develop leadership practices and equip nurses to increase their impact and role in adopting new knowledge. To design the program, we used several concepts, such as the action spirals derived from Action Research, expansive learning, and reflection as a primary learning strategy. However, developing an educational program combining different theoretical points of view also has potential challenges.

First, we propose a learning intervention with theoretical underpinnings for district nurses and their teams, which is simultaneously an approach to conducting action research. The emphasis on the theoretical outline of the program in this paper with a pre-arranged design for both the team learning program and the leadership training may be interpreted as a set program that cannot be altered. This may

appear to contradict the fundamental principles of action research, emphasizing the practical application and emergent character following the phases of plan, do, observe, and reflect (Greenwood & Levin, 2007). However, the design outlined here is not set in stone and can be adapted based on learning processes, team dynamics, and new insights. Nevertheless, this design supports the structuring, understanding, and documenting of the process, which makes the process insightful and systematic, but without losing the emergent character of action research (McNiff, 2017). Combining a theoretical outline of a learning program with action research can build a bridge between theory and practice and help translate abstract concepts into concrete actions (Parker et al., 2017). This is particularly valuable in action research since practical changes are sought for complex real-world problems.

Second, we combined Engeströms' perspective on expansive learning (2011) with action research (Greenwood & Levin, 2007) instead of Engeström's change laboratory (2015). We chose action research because it offers great flexibility in method selection, allowing the facilitator to tailor the learning program to those particular participants in that specific context. Moreover, although both change laboratory and action research involve active stakeholder engagement, change laboratory builds on dialogue, which may lean towards expert participation because of the emphasis on analyses (Engeström, 2015). In contrast, action research enables other forms of analysis, such as creative ways to express feelings or thoughts (McCormack et al., 2017), potentially leading to a more inclusive approach with a broader range of involved stakeholders. This is particularly important in district nursing care teams since this group ranges from helping aides to district nurses. Giving equal voice to all of them, other forms than dialogue, may be helpful in enabling learning to work with a guideline in daily practice.

CONCLUSION

This protocol described the theoretical underpinnings and the design of a learning program for district nursing teams that aims to work with guidelines and support a learning attitude. The LEARN program is developed based on the foundations of action research, combined with the concept of expansive learning, and reflection as the primary learning strategy to create new knowledge and contribute to

meaningful change in daily district nursing practice. The program consists of a team learning intervention that focuses on learning how district nursing teams can work with the guideline 'loneliness' or 'caregivers burden' in daily work practice and alternates face-to-face meetings and on-the-job learning elicited by a tailored questionnaire via a mobile phone application. The second component of the LEARN program is the leadership training for district nurses to enable district nurses to work on their leadership development and equip them better to impact improvements in work activities. Our next step will be to evaluate how guideline-use perspectives, and practices unfold during a learning program for district nurses and their teams.

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AUTHOR'S CONTRIBUTION

Inge Wolbers: conceptualization, methodology, visualisation, writing original draft. **Arjan van Os:** methodology, resources, writing – review and editing. **Pieterbas Lalleman:** methodology, supervision,

writing – review and editing. **Lisette Schoonhoven:** methodology, supervision, writing – review and editing. **Nienke Bleijenberg:** funding acquisition, methodology, supervision, writing – review and editing.

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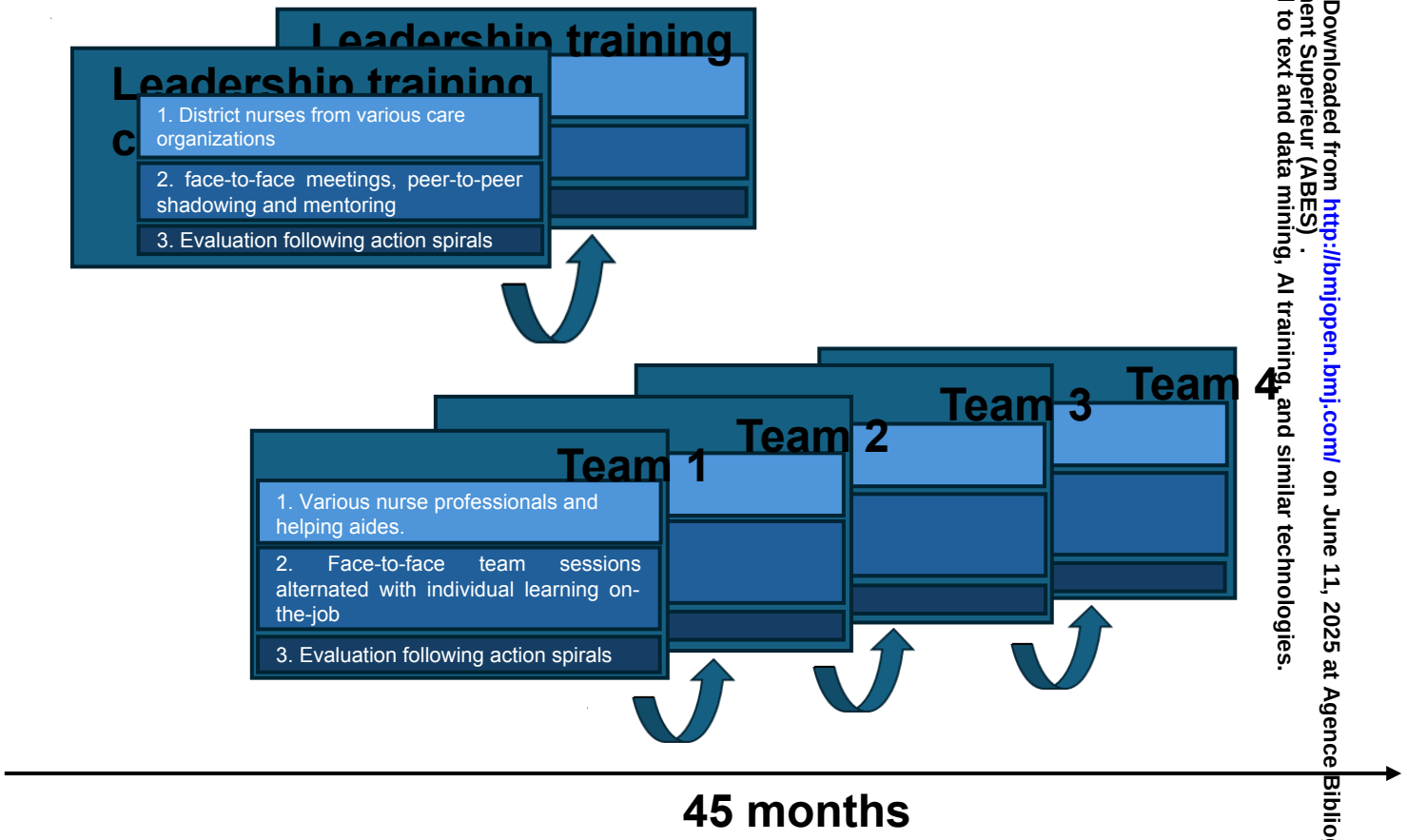
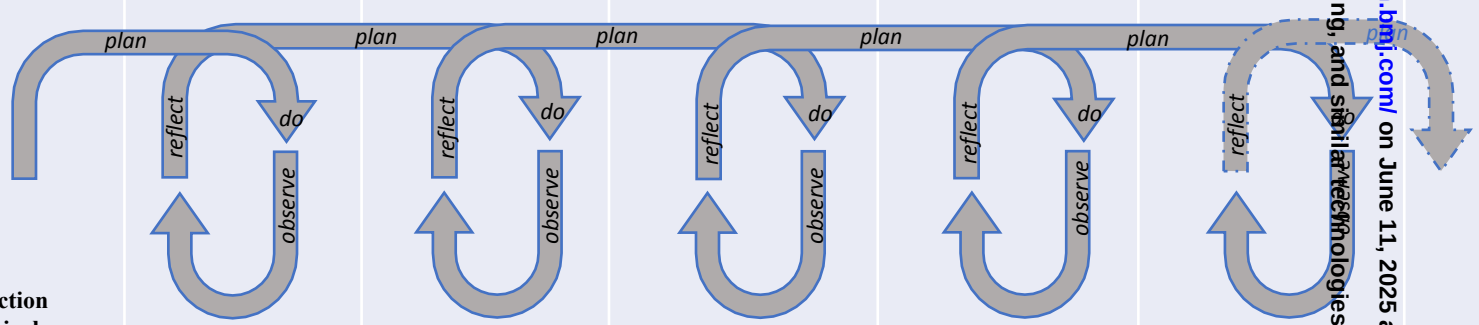
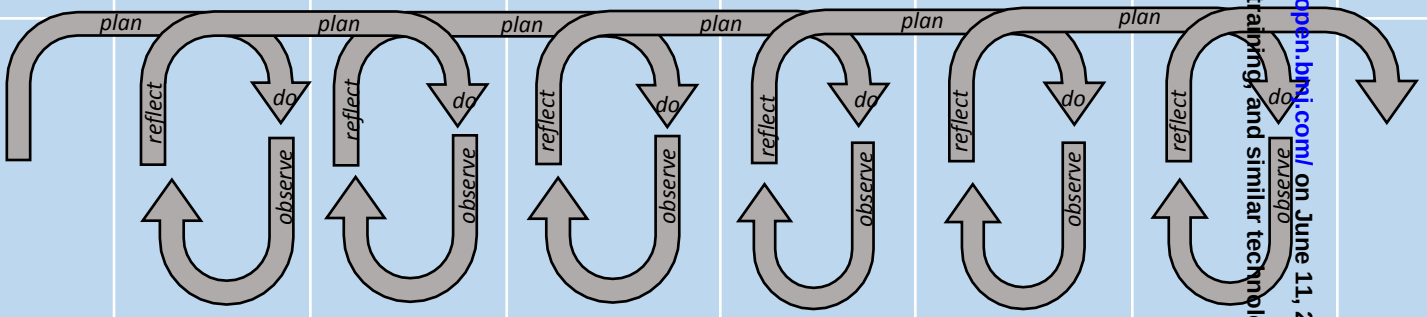
CONFLICT OF INTERESTS

None declared.



Team learning program					
Session, Duration, and Participants	Session 1. 3.5 hours. Full team.	Session 2. 3 hours. Team representatives.	Session 3. 3 hours. Team representatives.	Session 4. 3 hours. Team representatives.	Session 5. 3 hours. Team representatives.
Title	*'The actual and desirable situation'*	*'When are we doing it right'?*	*'How do we do it now?'*	*'How are we going to do it?'*	*'What do we yield?'*
Preparing materials	▪ Educational blueprint. ▪ Focus group guide.	▪ Educational blueprint. ▪ Questionnaire via mobile phone.	▪ Educational blueprint. ▪ Questionnaire via mobile phone. ▪ Routine care data.	▪ Educational blueprint. ▪ Questionnaire via mobile phone.	▪ Educational blueprint. ▪ Focus group guide.
Action spirals as a base for the meetings					
Data collection	▪ Field notes. ▪ Written reflections. ▪ Focus group interview.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	Field notes. Written reflections. Focus group interview.

	Leadership training						
	Mentor meetings (max. 6)						
	Peer-to-peer shadowing (max. 3)						
Session	Training 1	Training 2	Training 3	Training 4	Training 5	Training 6	Evaluation
Theme	*'Introduction to the training'*	*'Leadership development'*	*'Learning from ECD data'*	*'Socratic conversation'*	*'Coaching of team members'*	*'Leadership practice'*	
	2 hours	3 hours	4 hours	4 hours	4 hours	4 hours	
Action spirals as a base for the Sessions							
Data collection	▪ Field notes ▪ Written reflections ▪ Focus group interview	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections • Focus group interview	• Focus group interview

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PROTOCOL FOR AN ACTION RESEARCH STUDY: A LEARNING PROGRAMME FOR ON-THE-JOB REFLECTION ON GUIDELINE USE IN DISTRICT NURSING PRACTICE.

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TITLE

PROTOCOL FOR AN ACTION RESEARCH STUDY: A LEARNING PROGRAMME FOR ON-THE-JOB REFLECTION ON GUIDELINE USE IN DISTRICT NURSING PRACTICE.

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Conflict of interest: None.

Ethical considerations

The study was approved by the Ethical Committee Research of the HU University of Applied Sciences Utrecht (reference number 165-001-2022 and reference number 157-001-2022). All participants will be informed that they can withdraw from the study at any time and will be asked to provide their written consent.

Keywords: District nursing, learning programme, team learning, leadership development, guideline use, action research

Word count: 425 (abstract including strengths and limitations of this study); 4513 (main text).

ABSTRACT

Objective: To enhance district nursing teams working with guidelines and support a learning attitude, we designed the LEARN programme: Learning And Reflection for Nurses. This protocol aims to describe the programme's development and components, as well as our approach to evaluation.

Design: An Action Research approach will be used to develop and evaluate the learning programme and bring it into practice. By doing so, we will follow the action spirals, with the consecutive phases of planning, acting, observing, and reflecting to adapt the programme to the particular situation. Expansive learning is the lens through which we examine learning, emphasizing reflection as the primary learning strategy.

Setting: The study will be conducted in collaboration with three district nursing care organisations in the urban environment of Utrecht (360.000 inhabitants), The Netherlands.

Participants: Four district nursing teams will be selected. The composition and size of the participating district nursing teams depend on the district's size, population density, the demographic characteristics of its inhabitants, and the concurrent shortage of healthcare professionals. Moreover, district nurses working in the designated teams will be invited to the leadership training.

Interventions: The learning programme will be designed in two distinct learning interventions, with the district nurse serving as the connecting link between them. The first intervention targets district nurses and their teams, focuses on working with guidelines, and supports a collective learning attitude. Five sessions will be designed following the action research spirals, where the district nurse will be invited in the reflection and planning phases to tailor the programme to the specific needs of the team. This team-based learning intervention will span approximately 13 hours over five months. The second intervention specifically targets district nurses who are part of the teams and are from various care organisations. It will focus on leadership training to enhance district nurses' capacity to increase their impact and role in adopting new knowledge. This intervention will also include a peer-to-peer shadowing component and a mentoring trajectory to strengthen their influence and impact. The total duration is estimated at 20 hours.

Outcome measures/ results: This research will provide relevant, evidence-based guidance on learning to work with guidelines in district nursing practice. Findings will be disseminated as a continuous process throughout the research and will target the following audiences: (1) participating organisations and their nursing staff, (2) (district) nurses, policymakers, and strategic decision-makers in the Netherlands, and (3) the academic community.

Ethics and dissemination: Ethics approval from the Ethical Committee Research of the HU University of Applied Sciences Utrecht has been obtained (reference number 165-001-2022 and reference number 157-001-2022).

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This article describes a study protocol that combines a scientific research design with a practical learning programme that aims to enhance district nursing teams working with guidelines.
- We will develop two learning interventions that draw on Action Research theory, in which expansive learning is induced by reflection as the primary learning strategy.
- Using an Action Research approach for evaluation, we will iteratively adapt the learning interventions to the particular situation to optimise learning and support working with guidelines.
- Although we proposed a learning intervention with theoretical underpinnings, the programme is not set in stone but can be adapted based on learning processes, team dynamics, and new insights, which may lead to improved guideline use in daily work practice.

INTRODUCTION

The global demand for care delivery at home is increasing due to a focus on ageing populations, a focus on ageing at home, complex care needs, shorter hospital stays, and cost control. [1, 2] Patients with diverse physical and psychological diseases and comorbidities strive to live at home as long as possible. District nurses (European Qualification Framework [EQF] level 6) play a pivotal role in the community and work in teams together with vocational nurses (EQF level 4), certified nurse assistants (EQF level 3), and, in some teams, health and welfare assistants (EQF level 1 and 2). [3] These teams, with varied staff levels, skill mix, and differences in contract hours [4], deliver district nursing care – technical, medical, supportive, or rehabilitative interventions or personal care to patients at home. [5] Guidelines can support the teams in care delivery and enhance consistency to maintain or improve quality.

Guidelines are developed to support evidence-based decision-making in nursing, paramedics, and medicine. [6, 7] and are considered key tools for translating knowledge into daily practice. [8, 9] Nurses, the largest professional group in healthcare, are central to applying guidelines and working on

care quality [10], and therefore, an increasing number of nursing guidelines have been developed globally [11] and nationally to support nurses in routine care provision. [12, 13] In the Netherlands, several monodisciplinary nursing guidelines have recently been developed to address nursing problems that are frequently encountered by older patients who live at home, such as loneliness. [14] and caregiver burden. [15] However, guideline development alone is insufficient for evidence-based decision-making, as adherence by nursing teams remains suboptimal. [16, 9]

Active involvement of end-users has proven to be a necessary step in integrating guidelines into daily practice. [17], and education is often used as a key strategy to engage nurses and enhance guideline use. [8, 9] Jun et al. [18] emphasized the importance of education at the start and throughout implementation. Education facilitates understanding routines, procedures, and how systems work in a particular context, potentially leading to a change in nurses' work practice. [19] For instance, district nursing teams can learn to work with guidelines and adapt elements to their particular context. Although Jun et al. [18] mentioned education as essential, their integrative review overlooked the team-based nature of district nursing, where care decisions are team-oriented but executed by individual team members. Thus, education should target both individuals and teams to be effective. Nonetheless, how team-level education contributes to guideline use remains underexplored.

Facilitation is a technique where an individual makes things easier for others. [20] It can be seen as the active ingredient that aligns the guideline to the teams involved and their work context. Facilitators balance improvement goals with developing teamwork and building capacity. [20] They help teams learn and adapt their thinking and practices [9, 21] by using various educational strategies, such as reflection, described as "looking for the meaning of an event or history". [22, 23] Furthermore, nursing leadership is another essential aspect of facilitation and may be important to support guideline use. [24] Leadership can be seen as a relational practice in which nurses engage with others to set directions, show agency, and get things moving. [25]

So far, little is known about how an educational programme can support guideline use in district nursing. We, therefore, designed the LEARN programme: Learning And Reflection for Nurses to

enhance district nursing teams working with guidelines and support a learning attitude. This protocol aims to describe the programme's development and components, as well as our approach to evaluation.

METHODOLOGY

We will use action research to develop the learning programme. Before describing the action research design, we consider some learning theories underpinning it.

LEARNING THEORIES

Engeströms' activity theory offers a framework for understanding how teams collectively learn and innovate their practice. [26] In this framework, learning is perceived as 'expansive learning', which refers to a collective, multi-voiced learning process in which an activity system, e.g., a district nursing team, resolves its pressing internal contradictions by creating new forms of knowledge and activity. [15] For example, district nursing teams discuss and negotiate their common activity around the care for lonely patients and learn what elements from the guidelines suit their patients and how to shape it for usability in daily practice. The vital concept of expansive learning is derived from Vygotsky's Zone of Proximal Development. [27] This theory focuses on what a learner can achieve, accompanied by actively engaging others, compared to what they can achieve independently. Moreover, expansive learning emphasizes a community of learners, not the individual learner. According to activity theory, expansive learning is the result of social-human interactions within a particular material, cultural, and historical context of work practices and can be seen as the driving force for meaningful change. [28] Therefore, perceiving learning as 'expansive learning' suits a learning programme that aims to support district nursing teams in how to work with guidelines.

Moreover, as reflectivity is crucial in Action Research, we will emphasize reflection as the primary learning strategy in both learning interventions to catalyze the collaborative exchange of experiences and learn from them. Reflexivity can be seen as a self-including mental activity in which an individual monitors and reflects on social interactions involving oneself and others and stems from the person's ongoing internal dialogue. [29, 30] A particular mode of reflexivity is meta-reflexivity, which

encompasses the individual's inner professional and private dialogue mingled with others within a social surrounding. [31] The dialogue may be mediated by interpersonal trust and other positive emotions among team members [32], making it a valuable learning strategy in team and leadership interventions. Furthermore, it can be seen as a powerful learning strategy and a social mechanism. This social mechanism created by human interaction through inner dialogues with the self and others will when repeatedly placed on itself, clarify, analyse, and refine one's understanding of the experienced complex difficulties [33] faced by district nursing teams around the care themes 'loneliness among older people' or 'overburdened caregivers'. Moreover, to use collective reflection as a learning strategy, one's and others' experiences can be shared and discussed to induce and revive expansive learning cycles. [33, 34]

DESIGN

This study will be designed as a learning intervention to support district nursing teams in developing a learning attitude and contribute to meaningful change in guideline use in daily work practice. We will choose an Action Research (AR) approach to develop, adjust, and evaluate the LEARN programme. *"AR can be described as social research carried out by a team that encompasses a professional action researcher and members of an organisation seeking to improve the situation. AR promotes broad participation in the research process and supports action leading to a more just, sustainable, or satisfying situation for the stakeholders"*. [35] The AR approach is suitable for this study for several reasons. First, by 'doing' AR, members of district nursing teams are supported to develop a learning attitude and contribute to meaningful change. This bottom-up procedure promotes active collaboration, learning, and practical organisational problem-solving. [36] It comprises a learning process for everybody involved, and it makes this research, thus, an educational intervention. [37] Additionally, AR allows us to observe and understand the process of how teams learn to work with a guideline while working. [37] Finally, the action spirals with the characteristic consecutive phases of (pre-)orientation, planning, action and observation, and evaluation and reflection [37] will enable us to navigate the learning intervention, making it context-specific. [17]

The learning intervention follows a cyclic process involving (pre-)orientation, followed by planning, acting, observing, evaluating, and reflecting. [37] During preorientation, access to a district nursing team in a care organisation will be arranged, the research focus will be determined, information about the research will be shared, and agreements with managers and the district nurse will be made. The orientation phase will emphasise relationship building with the district nursing team and obtaining approval. Also, the current and desired work routine around a pre-determined care theme will be examined. The planning phase will involve defining goals and possible actions. In the acting and observing phase, the team will execute formulated actions. The process will be systematically reviewed in the evaluation and reflection phase [37], and possible new actions will be planned.

SETTING AND PARTICIPANTS

Our study will be conducted in three district nursing care organisations in the urban environment of Utrecht (360.000 inhabitants), The Netherlands. The district nursing care organisations are all part of a formal network in the region [Academische Werkplaats in de wijk] that connects care organisations in the district with the University of Applied Sciences Utrecht and the University Medical Center Utrecht for research and innovation purposes. [38] Our research focuses on district nursing care teams and district nurses in particular. The teams will be selected with help from managers who work in the care organisations. They will also invite district nurses in the designated teams to attend the leadership training. The composition and size of the participating district nursing teams depend on the district's size, population density, and the demographic characteristics of its inhabitants. Another essential factor that shapes the team composition is the concurrent shortage of healthcare professionals. [39] Teams are compelled to rely increasingly on temporary nurses, including bank nurses, float nurses, agency nurses, or nurse students.

PATIENT AND PUBLIC INVOLVEMENT

District nurses will be involved in the study when their team is invited to participate in the team learning intervention. Their input is crucial, as they possess in-depth knowledge of team dynamics, work

practices, and contextual factors. They will contribute to the orientation, planning, and reflection phases. Furthermore, as the team learning program progresses, district nurses will actively engage in the study by co-creating activities, such as facilitating group discussions to practice leadership skills.

RESEARCH PLAN AND GOVERNANCE

We will develop two learning interventions for this study. The main intervention targets district nursing teams, focuses on working with guidelines and supports a collective learning attitude. The second learning intervention supports the former and specifically targets district nurses (EQF 6) from various care organisations and will consist of leadership training to equip them to increase their impact and role in adopting new knowledge. Elements of this programme are derived from a previously executed nationwide leadership programme for district nurses in the Netherlands. [40] We will add peer-to-peer shadowing [41] and a mentoring trajectory [42] alongside the leadership training.

The entire study will be undertaken in 45 months, from March 2021 to January 2025. As illustrated in Figure 1, the total duration of the data collection process will take two years. The team learning intervention will be sequentially deployed and evaluated in four district nursing teams in three different care organisations. The duration of one team learning intervention will be approximately five months. The leadership training will be executed and evaluated in two cohorts, and the duration of a cohort will be approximately 5 months. As a prerequisite for a team to participate in the team learning intervention, at least one of the team's district nurses must have participated in the leadership training. Each intervention in the team learning programme and the leadership training will follow the structure of an action spiral, with the learning outcomes from the previous intervention carried over to the next.

In the preorientation phase of the team learning intervention, we will collaborate closely with a local manager within every care organisation to adapt the programme to their organisational context, discuss the practical relevance of the research, and address potential issues that may arise. During the intervention, which follows the orientation and subsequent phases of the action spiral, we will closely

collaborate with the district nurse who is already participating in the leadership training. The goal is to build relationships, discuss practical matters related to the team, and use the district nurse's inside expertise to plan and develop the preparatory materials for the team sessions.

The research team (including a professor in proactive eldercare, a professor in leadership, a professor in nursing science, and a lecturer in nursing with a focus on care ethics) will design the preliminary LEARN programme. During the team learning programme and the leadership training, lecturer AvO and researcher IW will take on the facilitator's role. In parallel with the execution of the team learning programme and the leadership training, data collection and analysis will be carried out by the research team and the district nurse. Findings will inform the redesign of the learning interventions, the application, and the evaluation.

<Figure 1>

DESCRIPTION OF THE LEARNING INTERVENTIONS

Considering the learning objectives, the theoretical frameworks, and our previously gained insight about a leadership development programme for district nurses, we designed a team learning programme for district nursing teams and leadership training for district nurses. We will first describe the team learning programme and zoom in on the content. Second, the leadership training will be described, and the individual mentoring trajectory and peer-to-peer shadowing will be addressed accordingly. The initial programmes were designed in the spring of 2021.

The team learning programme

The learning objective of the team learning programme for district nursing teams is to learn how to work with the guideline 'loneliness' or 'caregiver burden.' The team learning programme will include five sessions totaling thirteen hours for approximately five months. The team sessions will be held within the care organisation and during working hours to lower the threshold for the team members. District nursing teams will be the target group, including district nurses, vocational nurses, certified nursing

assistants, and helping aids. The format combines face-to-face sessions and learning on the job. Learning on the job is encouraged by sending a questionnaire via a mobile phone application at the end of the working week. Figure 2 illustrates the programme's design. Ideally, the whole district nursing team should attend all the sessions, but due to cost constraints and the current nursing shortages, the entire team will be invited only for the first session. At the end of the first session, a core team encompassing 4-6 participants will be compiled based on voluntariness and motivation and will participate in subsequent sessions. They participate on behalf of the whole team and are asked to inform other team members actively.

<Figure 2>

Content of the team learning programme

Before the series of sessions start, an announcement in the form of an e-mail with the programme's content and the appropriate nursing guidelines, accompanied by a video about the guidelines, will be sent to everyone who embodies the district nursing team. This gives them a first impression of the learning programme and the chosen guidelines. Every session (except for the first session) should start with a summary of the previous session and end with a preview of the next session and an invitation to the team members to share their input for the next meeting.

The **first** session will focus on the gap between the actual and desired situation around the guidelines' care theme. In AR, it is common to investigate the actual situation first, then the desired situation, and then explore the gap between them. [37] The actual situation will be first examined with a group conversation in the form of a focus group. Different questions will be asked, such as whether nurses recognize the guidelines' care theme/subject of the guideline in daily work practice, what kind of nursing interventions they usually undertake, and the experienced helping or hindering factors. This allows the facilitators to analyze how the district nursing team perceives the actual situation. Subsequently, the desired situation will be clarified by examining the team members' underlying values

that are perceived as important given the subject of the guideline. The desired situation will be defined by values and reformulated as the team's 'collective ambition.'

In the **second** session, the core team will deal with the question of what the team's new standard around the chosen care theme would be. To answer this question, the core team will be asked to explore the guidelines and the described actions and, in turn, relate this to their actual situation and the formulated collective ambition. With this in mind, the team will be challenged to give practical meaning to the collective ambition and will eventually come to a new standard for the team. Subsequently, they are invited to think about the practical steps for the team and the organisation to reach their standard and, more practically, how they will come to this. The facilitators support them in examining the nursing guidelines to shape and prioritize the subsequent steps.

The **third** session will focus on the team's steps to reach their new standard. Within this session, several parts of their daily work will be related to the guideline, such as how the team members document in the electronic patient record around the care theme and what they can learn from it. Also, by doing the marshmallow challenge [43], attention will be paid to how team members collaborate. Subsequently, new insights will be obtained by using group reflection. As a result of this reflection, additional steps that should be taken to achieve their new standard will be voiced. If necessary, the team can also adjust the collectively formulated new standard.

The **fourth** session focuses on the future and practicalities that can help or hinder reaching the teams' new standard. A plan of action for the whole district nursing team will be initiated for the long term. Using various educational methodologies, such as group discussion and mind mapping, the team will explore how the new standard can fit into existing work routines and what steps they can undertake to seduce every team member to align with the new standard.

Ideally, the **last** session will be about the team's learning achievements. Guided by a focus group with sticky notes and sheets on the wall, the core team will mention the successes and changes in how the work is changed regarding the guidelines' care theme. They are asked how the guideline's content is integrated into existing work structures and routines.

The leadership training

The leadership training aims to equip district nurses to increase their impact and role in adopting new knowledge. We hypothesize that the leadership training can work as a catalyst for change and better equip district nurses to support teams to actively change the daily work practice around the guidelines 'loneliness among older people' or 'caregivers burden'. Moreover, since LEARN is only temporary, we wish to continue the movement to induce change and equip district nurses who either work in the team or the organisation to develop leadership practices.

The leadership training is a six-month inter-organisational expansive learning programme for district nurses from different organisations. The training contains six face-to-face meetings with a total duration of 20 hours. The training is held outside the organisations to enable nurses to step back, zoom out from their daily work practice, and create headspace for learning and reflection. At every meeting, an expert will be invited to explore a theme using varied educational methodologies and start a discussion. District nurses will be invited to participate in expert meetings, related assignments, and group reflections. Figure 3 illustrates the design and content of the training.

<Figure 3>

The starting point of the training will rely on the district nurses' experiences in daily work practice. Content areas of the meetings include leadership development, learning from patient data, learning from questioning, and coaching team members. The content areas are determined in advance, but the educational methodology will be tailored to the group's learning needs, and the leadership training's inter-organisational nature offers opportunities for mutual enrichment.

Individual mentoring trajectory

Alongside the leadership training, an individual mentoring trajectory will be initiated, inspired by the mentoring programme of Hafsteinsdóttir et al. [42] The goal of the mentoring programme is to support

the ongoing leadership development of the individual district nurse. The district nurses' actual learning needs will guide the individual mentoring trajectory, and the district nurse can meet the mentor six times (6 hours). The project team matches the individual district nurse with a specific mentor. The appointed mentors are experts in nursing and work as educators or researchers in subjects about district nursing care and long-term care or have an affinity to coaching. The appointed mentors are informed about the leadership training but will receive no further education to shape the mentoring trajectory.

Peer-to-peer shadowing

The leadership training allows peer-to-peer shadowing to encourage mutual enrichment and learning. Peer-to-peer shadowing focuses on variation in daily work practice and clinical leadership, reflection on roles, problem-solving strategies, and trigger learning processes that support leadership development. Lalleman et al. [41] found that peer-to-peer shadowing facilitates collective reflection-in-action and enhances an 'investigate stance' while acting for both the one who shadows and the one who is being followed. In the leadership training, peer-to-peer shadowing will occur at three different moments. The first encounter with peer-to-peer shadowing will be in meeting two, where participants receive information and instruction. The first moment of peer-to-peer shadowing runs for one hour, wherein the participants will be asked to shadow a peer participant from a different organisation for one hour in daily practice in a moment with multiple contacts. The second moment of peer-to-peer shadowing is with the same peer-participant and runs for a half workday. The third moment of peer-to-peer shadowing is with another peer participant from another organisation and runs again for a half workday.

EVALUATION

The evaluation will involve all the qualitative data collected from March 2021 to January 2025. Qualitative methods will enable a better understanding of the contexts and how a learning programme unfolds and identify relevant hindrances or helping factors to enhance working with guidelines. As the sessions of the learning interventions take place in a short time frame, the collected data will be analyzed

quickly and used as input for the next session. For the final analysis, we will adopt a process-oriented temporal evaluation approach.

Data collection

In the team learning intervention and the leadership training, data will be gathered through diverse methods. During all the phases of the action spirals, data will be collected through shadowing. [44] It provides an understanding of how district nursing teams learn to work with the guideline 'loneliness' or 'caregiver burden.' The observations during the sessions will focus on dialogue, verbalized perceptions, and participation. During the observations, written notes will be made (i.e., keywords, situations, quotes, short sentences) [45], which will be structured into fieldnote reports afterwards and treated as data. Moreover, after every session, written reflections will be made by the researcher and the nurse lecturer [IW, AvO] to understand the observations better and will serve as a diary. We will use focus groups at the start and end of both interventions to explore experiences with loneliness, caregiver burden, and guideline use, and evaluate the impact of the learning interventions. Focus groups enable in-depth team discussion and effectively explore values, beliefs, and systems. [46] In the team learning programme, we will additionally distribute a brief, tailored questionnaire through a mobile phone application [47] following the time-based sampling method [48] during the weeks between the sessions. This diary method will provide insight into team members' learning moments on the job and the appliance of the guideline. At the beginning of the second, third, and fourth team sessions, attention will be paid to highlight some of the answers given. This highlighting will potentially spark the conversation about a current work situation that may be used as a case during that team session.

Data analysis

Data analysis occurs in two steps. First, data will be collected and analyzed in parallel, gradually evolving along the learning intervention. Collaborative analysis with the facilitators [IW, AVO], the district nurse, and the research team [PL, LS, NB] will take place during various meetings and provide

the foundation for reflection on patterns, underlying causes, and themes. [49] As the reflection is part of the action spiral [33], this informs the preparatory materials for the next team learning session and leadership training. Second, we will use a longitudinal qualitative approach [50] to identify the unfolding of learning processes over time in a district nursing team and evaluate the impact of this learning intervention. We will reconstruct the timeline and group the related observational reports, reflections, and transcripts. The analysis and sensemaking will follow the six steps described by Braun & Clarke. [51]

ETHICS AND SAFETY

The study has been approved by the Ethical Committee Research of the University of Applied Sciences Utrecht (reference number 165-001-2022 and reference number 157-001-2022). All participants will be asked to provide their written consent before participating in either the team learning programme or the leadership training. All participants will be informed that they can withdraw from the study at any time.

DISSEMINATION PLAN

Dissemination will be undertaken as a continuous process throughout the research. We will develop workshops, presentations, and summary documents to make them accessible to different audiences. For the participating organisations and their staff, we will organize a symposium to summarize our research activity and output and provide guidance on how to best incorporate expansive learning in daily work practice. We will develop user-friendly versions of our findings for the general Dutch nursing audience. For the academic community, we will produce research articles in peer-reviewed journals and conference presentations. Preliminary findings will also be regularly presented within the research centres (University of Applied Sciences Utrecht and University Medical Center Utrecht).

DISCUSSION

This article outlines the LEARN programme, a research and educational intervention for district nurses. It describes the development of the LEARN programme for district nurses and their teams, which is a research programme and an educational intervention simultaneously. It supports district nursing teams in learning how to use the guideline 'loneliness,' or caregivers burden' in daily work practice, and it comprises a leadership programme to enhance district nurses' impact in adopting new knowledge. Nevertheless, this design has potential challenges.

First, this protocol, with a strong emphasis on the theoretical concepts and design for both the team learning programme and the leadership training may be interpreted as a set programme that cannot be altered. This may contradict action research principles. [35] However, the design outlined here is preliminary, and the alternating phases of data collection and analysis will inform the next steps, making it responsive to context. [17] Moreover, the design enables researchers to go beyond improving practice and develop theories on strategies that enhance district nursing teams' guideline use in daily practice. [52]

Second, the LEARN programme relies on end-user involvement, including district nurses and district nursing teams, and is a prerequisite for achieving the programme's goals. Therefore, time and resources are required to build authentic and trusting relationships between the research team and the end users. [53] The pitfall will be prioritising speed over engagement and collaboration. [17]

Although this study protocol focuses on improving guideline use in district nursing practice, some elements of the LEARN programme may be transferred to allied health practices. A systematic review by Goorts, Dizon, and Milanese [54] showed that an implementation strategy for allied healthcare professionals to use guidelines should be adaptive to the context, comprise educational meetings, and support clinicians. Therefore, the team learning programme and the leadership training may also be converted to other health professionals.

Figure 1: Study overview

Figure 2: Team learning invention overview combined with data collection methods

Figure 3: Leadership training overview combined with data collection methods

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AUTHOR'S CONTRIBUTION

Inge Wolbers: conceptualization, methodology, visualisation, writing original draft. **Arjan van Os:** methodology, resources, writing – review and editing. **Pieterbas Lalleman:** methodology, supervision, writing – review and editing. **Lisette Schoonhoven:** methodology, supervision, writing – review and editing. **Nienke Bleijenberg:** funding acquisition, methodology, supervision, writing – review and editing, guarantor.

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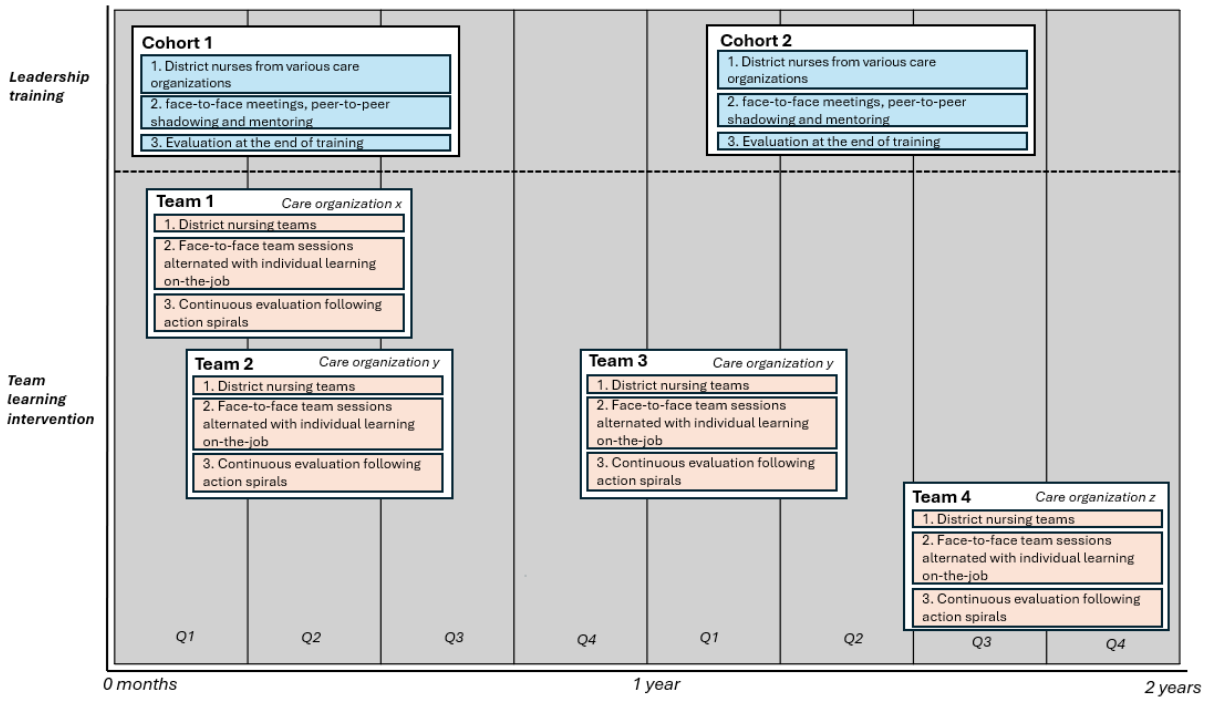
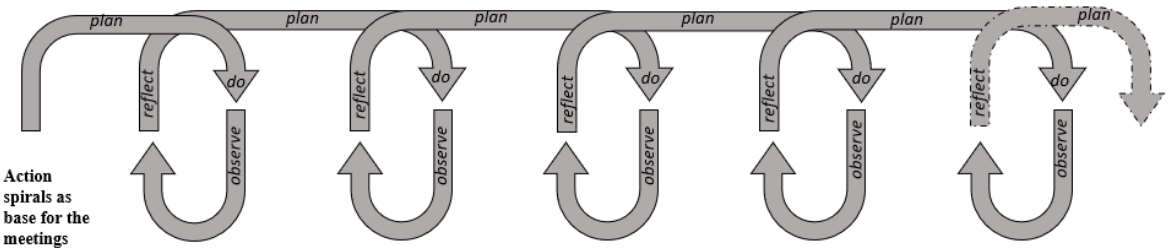
CONFLICT OF INTERESTS

None declared.



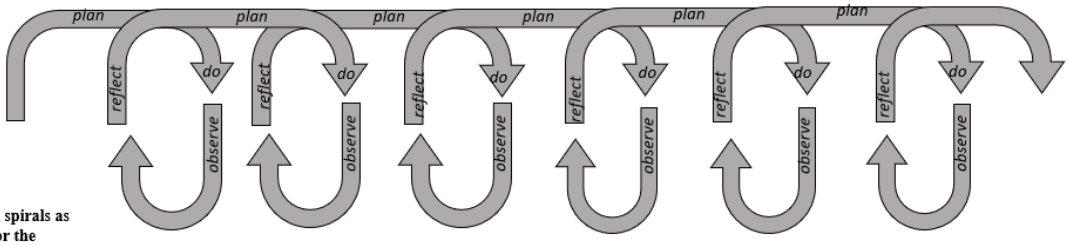
Team learning program

Session **Duration**	Session 1. 3.5 hours.	Session 2. 3 hours.	Session 3. 3 hours.	Session 4. 3 hours.	Session 5. 3 hours.
Participants	Full team.	Team representatives.	Team representatives.	Team representatives.	Team representatives.
Title	*'The actual and desirable situation'*	*'When are we doing it right'?*	*'How do we do it now?'*	*'How are we going to do it?'*	*'What do we yield?'*
Preparatory materials	▪ Educational blueprint. ▪ Focus group guide.	▪ Educational blueprint. ▪ Questionnaire via mobile phone.	▪ Educational blueprint. ▪ Questionnaire via mobile phone. ▪ Routine care data.	▪ Educational blueprint. ▪ Questionnaire via mobile phone.	▪ Educational blueprint. ▪ Focus group guide.
Action spirals as base for the meetings					
Data collection methods	▪ Field notes. ▪ Written reflections. ▪ Focus group interview.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	Field notes. Written reflections. Focus group interview.

Leadership training

Mentor meetings (max. 6 hours)

Peer-to-peer shadowing (max. 3 times)

Session	Training 1	Training 2	Training 3	Training 4	Training 5	Training 6	Evaluation
Theme	*'Introduction to the training'*	*'Leadership development'*	*'Learning from ECD data'*	*'Socratic conversation'*	*'Coaching of team members'*	*'Leadership in practice'*	
	2 hours	3 hours	4 hours	4 hours	4 hours	4 hours	
Action spirals as base for the training							
Data collection methods	▪ Field notes ▪ Written reflections ▪ Focus group interview	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections • Focus group interview	• Focus group interview

BMJ Open

PROTOCOL FOR AN ACTION RESEARCH STUDY: A LEARNING PROGRAMME FOR ON-THE-JOB REFLECTION ON GUIDELINE USE IN DISTRICT NURSING PRACTICE.

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Primary Subject Heading:	Nursing
Secondary Subject Heading:	Nursing
Keywords:	Nurses, Protocols & guidelines < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, EDUCATION & TRAINING (see Medical Education & Training)

TITLE

PROTOCOL FOR AN ACTION RESEARCH STUDY: A LEARNING PROGRAMME FOR ON-THE-JOB REFLECTION ON GUIDELINE USE IN DISTRICT NURSING PRACTICE.

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Conflict of interest: None.

Ethical considerations

The study was approved by the Ethical Committee Research of the HU University of Applied Sciences Utrecht (reference number 165-001-2022 and reference number 157-001-2022). All participants will be informed that they can withdraw from the study at any time and will be asked to provide their written consent.

Keywords: District nursing, learning programme, team learning, leadership development, guideline use, action research

Word count: 395 (abstract including strengths and limitations of this study); 3854 (main text).

ABSTRACT

Introduction. The rising global demand for district nursing care necessitates effective strategies to support evidence-based decision-making. Despite the extensive development of nursing guidelines, adherence by district nursing teams remains suboptimal, revealing a gap between guideline development and daily practice. The LEARN programme aims to bridge this gap by enhancing guideline use and fostering a learning attitude among district nursing teams. This protocol outlines the programme's development, components, and evaluation approach.

Methods and analysis. An Action Research approach will be used to develop, adjust and evaluate the LEARN programme. The programme includes two interventions: a team learning intervention focusing on guideline use and collective learning, and a leadership training intervention for district nurses to enhance their impact and role in adopting new knowledge. The team learning intervention will be

sequentially deployed and evaluated in four district nursing teams across three care organisations, each lasting approximately 5 months. The leadership training will be conducted and evaluated in two cohorts, each lasting about 5 months. Participation in the team learning intervention requires at least one district nurse to participate in the leadership training. Each intervention will follow an action spiral structure, with learning outcomes from previous interventions carried over to the next. Data will be collected through observations, written reflections, focus groups and questionnaires via a mobile app. Data analysis will occur in two steps: parallel data collection and analysis during the intervention, followed by a longitudinal qualitative approach to identify learning processes over time and evaluate the intervention's impact.

Ethics and dissemination. Ethics approval has been obtained from the Ethical Committee Research of the HU University of Applied Sciences Utrecht has been obtained (reference number 165-001-2022 and reference number 157-001-2022). Findings will be disseminated continuously throughout the research via workshops, presentations, and summary documents for district nurses and their teams, care organisations, strategic policymakers, and the academic community.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- Two learning interventions will be designed based on Action Research theory, using reflection as the primary strategy to induce expansive learning.
- Although this learning intervention is proposed with Action Research and learning theories, the programme is not set in stone but can be adapted based on learning processes, team dynamics, and new insights, which may lead to improved guideline use in daily practice.
- End-user involvement is crucial for achieving the programme's goals, necessitating significant time and resources to build authentic and trusting relationships.

INTRODUCTION

The global demand for care delivery at home is increasing due to a focus on ageing populations, a focus on ageing at home, complex care needs, shorter hospital stays, and cost control. [1, 2] Patients with diverse physical and psychological diseases and comorbidities strive to live at home as long as possible. District nurses (European Qualification Framework [EQF] level 6) play a pivotal role in the community and work in teams together with vocational nurses (EQF level 4), certified nurse assistants (EQF level 3), and, in some teams, health and welfare assistants (EQF level 1 and 2). [3] These teams, with varied staff levels, skill mix, and differences in contract hours [4], deliver district nursing care – technical, medical, supportive, or rehabilitative interventions or personal care to patients at home. [5] Guidelines can support the teams in care delivery and enhance consistency to maintain or improve quality.

Guidelines are developed to support evidence-based decision-making in nursing, paramedics, and medicine. [6, 7] and are considered key tools for translating knowledge into daily practice. [8, 9] Nurses, the largest professional group in healthcare, are central to applying guidelines and working on care quality [10], and therefore, an increasing number of nursing guidelines have been developed globally [11] and nationally to support nurses in routine care provision. [12, 13] In the Netherlands, several monodisciplinary nursing guidelines have recently been developed to address nursing problems that are frequently encountered by older patients who live at home, such as loneliness. [14] and caregiver burden. [15] However, guideline development alone is insufficient for evidence-based decision-making, as adherence by nursing teams remains suboptimal. [16, 9]

Active involvement of end-users has proven to be a necessary step in integrating guidelines into daily practice. [17], and education is often used as a key strategy to engage nurses and enhance guideline use. [8, 9] Jun et al. [18] emphasized the importance of education at the start and throughout implementation. Education facilitates understanding routines, procedures, and how systems work in a particular context, potentially leading to a change in nurses' work practice. [19] For instance, district nursing teams can learn to work with guidelines and adapt elements to their particular context. Although Jun et al. [18] mentioned education as essential, their integrative review overlooked the team-based nature of district nursing, where care decisions are team-oriented but executed by individual team

members. Thus, education should target both individuals and teams to be effective. Nonetheless, how team-level education contributes to guideline use remains underexplored.

Facilitation is a technique where an individual makes things easier for others. [20] It can be seen as the active ingredient that aligns the guideline to the teams involved and their work context. Facilitators balance improvement goals with developing teamwork and building capacity. [20] They help teams learn and adapt their thinking and practices [9, 21] by using various educational strategies, such as reflection, described as "looking for the meaning of an event or history". [22] Furthermore, nursing leadership is another essential aspect of facilitation and may be important to support guideline use. [23] Leadership can be seen as a relational practice in which nurses engage with others to set directions, show agency, and get things moving. [24]

So far, little is known about how an educational programme can support guideline use in district nursing. We, therefore, designed the LEARN programme: Learning And Reflection for Nurses to enhance district nursing teams working with guidelines and support a learning attitude. This protocol aims to describe the programme's development and components, as well as our approach to evaluation.

METHODOLOGY

Action research will be used to develop the learning programme. Before describing the action research design, some underpinning learning theories will be considered.

LEARNING THEORIES

Engeströms' activity theory provides a framework for understanding collective learning and innovation within teams. [19] In this framework, learning is perceived as 'expansive learning', a collective, multi-voiced process where an activity system, such as a district nursing team, resolves internal contradictions by creating knowledge and activities. [15] For instance, district nursing teams discuss and negotiate their care practices for lonely patients, determining which guideline elements are suitable and how to adapt them for daily use. The concept of expansive learning is rooted in Vygotsky's Zone of Proximal

Development [25], which emphasises what learners can achieve with the support of others compared to what they can achieve independently. Expansive learning focuses on a community of learners rather than individual learners. According to activity theory, expansive learning results from social-human interactions within specific material, cultural, and historical contexts of work practices and drives meaningful change. [26] Thus, viewing learning as 'expansive learning' aligns with a programme that aims to support district nursing teams in how to work with guidelines.

Reflectivity is crucial in action research, and reflection will be emphasised as the primary learning strategy in both learning interventions to catalyse the collaborative exchange of experiences. Reflexivity involves a self-including mental activity in which an individual monitors and reflects on social interactions involving oneself and others and stems from the person's ongoing internal dialogue. [27, 28] Meta-reflexivity, a specific mode of reflexivity, encompasses professional and private dialogues mingled with others within a social context. [28] The dialogue, mediated by interpersonal trust and other positive emotions among team members [29], is valuable in team and leadership interventions. Furthermore, reflexivity is a powerful learning strategy and a social mechanism. Through repeated human interaction and inner dialogues, individuals can clarify, analyse, and refine their understanding of complex difficulties [30] district nursing teams face, such as loneliness among older people or overburdened caregivers. Moreover, collective reflection as a learning strategy allows sharing and discussing experiences to induce and revive expansive learning cycles. [30, 31]

DESIGN

This study will be designed as a learning intervention to support district nursing teams in developing a learning attitude and contribute to meaningful change in guideline use in daily practice. We will employ an Action Research (AR) approach to develop, adjust, and evaluate the LEARN programme. AR is described as social research conducted by a team comprising a professional action researcher and members of an organisation seeking improvement. AR promotes broad participation in the research

process and supports actions leading to a more just, sustainable, or satisfying situation for stakeholders. [32] The AR approach is suitable for this study for several reasons. First, by engaging in AR, district nursing team members will be supported in developing a learning attitude and contributing to meaningful change. This bottom-up procedure promotes active collaboration, learning, and practical organisational problem-solving. [33] It comprises a learning process for all involved, making this research an educational intervention. [34] Additionally, AR allows us to observe and understand how teams learn to work with guidelines in practice. [34] Finally, the action spirals, with their characteristic phases of (pre-)orientation, planning, action and observation, and evaluation and reflection [34], will enable us to navigate the learning intervention, making it context-specific. [17]

The learning intervention will follow a cyclic process involving (pre-)orientation, followed by planning, acting, observing, evaluating, and reflecting. [34] During preorientation, access to a district nursing team in a care organisation will be arranged, the research focus will be determined, information will be shared, and agreements with managers and the district nurse will be made. The orientation phase will emphasise relationship building and obtaining approval while examining current and desired work routines around a predetermined care theme. The planning phase will involve defining goals and possible actions. During the acting and observing phase, the team will execute formulated actions. The evaluation and reflection phase will systematically review the process [34], followed by possible new actions.

SETTING AND PARTICIPANTS

This study will be conducted in three district nursing care organisations in the urban environment of Utrecht (360.000 inhabitants), The Netherlands. These organisations are part of a formal regional network [Academische Werkplaats in de wijk] connecting care organisations with the University of Applied Sciences Utrecht and the University Medical Center Utrecht for research and innovation purposes. [35] Our research focuses on district nursing care teams, particularly district nurses. The teams will be selected with the help of managers from the care organisations, who will also invite district nurses in the designated teams to attend the leadership training. The composition and size of the participating teams depend on the district's size, population density, and demographic characteristics.

Another crucial factor that shapes the team composition is the shortage of healthcare professionals. [36], compelling teams to rely increasingly on temporary nurses, including bank nurses, float nurses, agency nurses, and nurse students.

PATIENT AND PUBLIC INVOLVEMENT

None.

RESEARCH PLAN AND GOVERNANCE

Two learning interventions will be developed for this study. The main intervention targets district nursing teams, focuses on working with guidelines and supports a collective learning attitude. The second learning intervention supports the first and specifically targets district nurses (EQF 6) from various care organisations and will consist of leadership training to equip them to increase their impact and role in adopting new knowledge. Elements of this programme are derived from a previous nationwide leadership programme for district nurses in the Netherlands. [37] A mentoring trajectory [38] and peer-to-peer shadowing [39] will be added alongside the leadership training.

The study will span 45 months, from March 2021 to January 2025. As shown in Figure 1, data collection will take two years. The team learning intervention will be sequentially deployed and evaluated in four district nursing teams across three care organisations, each lasting approximately 5 months. The leadership training will be conducted and evaluated in two cohorts, each lasting about 5 months. For a team to participate in the learning intervention, at least one district nurse must have participated in the leadership training. Each intervention will follow the structure of an action spiral, with the learning outcomes from the previous intervention carried over to the next.

In the preorientation phase of the team learning intervention, the researchers will collaborate with a local manager in every care organisation to adapt the programme to their context, discuss the

research's practical relevance, and address potential issues. During the intervention, following the the orientation and subsequent phases of the action spiral, we will work closely with the district nurse participating in the leadership training. The goal is to build relationships, discuss practical matters, and use the district nurse's expertise to plan and develop preparatory materials for the team sessions.

The research team, comprising former nurses who are now professors in proactive eldercare, leadership, and nursing science, a PhD candidate and a lecturer in nursing focusing on care ethics, will design the preliminary LEARN programme. During the team learning programme and the leadership training, lecturer AvO and researcher IW will act as facilitators. Concurrently, data collection and analysis will be conducted by the research team and the district nurse. Findings will inform the redesign, the application, and the evaluation of the learning interventions.

<Figure 1>

DESCRIPTION OF THE LEARNING INTERVENTIONS

Considering the learning objectives, a team learning programme for district nursing teams and leadership training for district nurses were designed. First, the team learning programme and its content will be described. Second, the leadership training will be outlined, including the individual mentoring trajectory and peer-to-peer shadowing. The initial programmes were designed in spring 2021.

The team learning programme

The objective of the team learning programme for district nursing teams is to learn how to work with the guideline 'loneliness' or 'caregiver burden.' The programme will include five sessions totalling thirteen hours over approximately five months. Sessions will be held within the care organisation during working hours to lower participation barriers. The target group includes district nurses, vocational nurses, certified nursing assistants, and helping aids. The format combines face-to-face sessions and learning on the job, encouraged by a weekly questionnaire via a mobile phone application. Figure 2 illustrates the programme's design. Ideally, the entire district nursing team should attend all sessions,

but due to cost constraints and nursing shortages, only the first session will include the whole team. At the end of the first session, a core team of 4-6 motivated volunteers will be formed to participate in subsequent sessions. This core team will represent the whole team and actively inform other members.

<Figure 2>

Content of the team learning programme

Before the sessions begin, an e-mail detailing the programme's content and relevant nursing guideline, along with a video about the guidelines, will be sent to all district nursing team members. This provides an initial overview of the learning programme and the selected guideline. Each session (except the first) will start with a summary of the previous session and end with a preview of the next session, inviting team members to share their input for the next meeting.

The **first** session will address the gap between the actual and desired situations around the guidelines' care theme. In AR, it is common to investigate the actual situation first, then the desired situation, and then explore the gap between them. [34] The actual situation will be examined through a focus group discussion, asking questions such as whether nurses recognise the guidelines' care theme in daily work practice, the nursing interventions they typically undertake, and the factors that help or hinder them. This will allow facilitators to analyse the team's perception of the actual situation. Next, the desired situation will be clarified by examining the team members' underlying values related to the guideline's subject. The desired situation will be defined by values and reformulated as the team's 'collective ambition.'

In the **second** session, the core team will determine the new work standard for the chosen care theme. They will explore the guidelines and described actions, relating them to their actual situation and collective ambition. With this in mind, the team will give practical meaning to the collective ambition and establish a new standard. They will then consider practical steps for the team and the organisation to achieve this standard. The facilitators will support them in examining the nursing guidelines to shape and prioritise these steps.

The **third** session will focus on the steps to reach the new standard. This will include relating parts of their daily work to the guideline, such as documenting in the electronic patient record and learning from it. The marshmallow challenge [40] will be used to highlight collaboration. Group reflection will provide new insights, leading to additional steps that should be taken to achieve the new standard. If necessary, the team can adjust the collectively formulated standard.

The **fourth** session will focus on future steps and practicalities to help or hinder reaching the team's new standard. A long-term plan action plan for the entire district nursing team will be initiated. Using educational methodologies, such as group discussion and mind mapping, the team will explore how the new standard can fit into existing work routines and what steps they can take to align all team members with the new standard.

The **final** session will review the team's learning achievements. Guided by a focus group using sticky notes and sheets on the wall, the core team will highlight successes and changes in their work regarding the guidelines' care theme. They will discuss how the guideline's content is integrated into existing work structures and routines.

The leadership training

The leadership training aims to equip district nurses to increase their impact and role in adopting new knowledge. It is hypothesised that the leadership training will work as a catalyst for change, better equipping district nurses to support teams in changing the daily practices around the guidelines 'loneliness among older people' or 'caregivers burden'. Since LEARN is temporary, we aim to sustain the movement for change and equip district nurses to develop leadership practices within their teams or organisations.

The leadership training is a six-month inter-organisational expansive learning programme for district nurses. It includes six face-to-face meetings totalling 20 hours, held outside the organisations to allow nurses to step back from daily practice and create space for learning and reflection. Each meeting will feature an expert exploring a theme using varied educational methodologies and initiating

discussions. District nurses will participate in expert meetings, related assignments, and group reflections. Figure 3 illustrates the training's design and content.

<Figure 3>

The training will begin with the district nurses' experiences in daily work practice. Meeting content will cover leadership development, learning from patient data, learning from questioning, and coaching team members. While content areas are predetermined, the educational methodology will be tailored to the group's learning needs. The inter-organisational nature offers opportunities for mutual enrichment.

Individual mentoring trajectory

Alongside the leadership training, an individual mentoring trajectory will be initiated, inspired by Hafsteinsdóttir et al. [38] The goal is to support the ongoing leadership development of district nurses. The individual mentoring trajectory will be guided by the district nurses' actual learning needs, with each nurse meeting their mentor six times (6 hours). The project team will match each nurse with a mentor who is an expert in nursing and works as an educator or researcher in district nursing care, long-term care or has a coaching affinity. Mentors will be informed about the leadership training but will not receive additional education to shape the mentoring trajectory.

Peer-to-peer shadowing

The leadership training includes peer-to-peer shadowing to encourage mutual enrichment and learning. This method focuses on variations in daily practice and clinical leadership, reflection on roles, problem-solving strategies, and triggering learning processes that support leadership development. Lalleman et al. [39] found that peer-to-peer shadowing facilitates collective reflection-in-action and enhances an 'investigate stance' for both the observer and the observed. In the leadership training, peer-to-peer

shadowing will occur at three different times. The first encounter will be in meeting two, where participants receive information and instruction. The first shadowing session will last one hour, with participants shadowing a peer from a different organisation during a moment with multiple contacts. The second session, with the same peer, will last a half workday. The third session, with a different peer from another organisation, will also last half a workday.

EVALUATION

The evaluation will involve all qualitative data collected from March 2021 to January 2025. Qualitative methods will provide a better understanding of the contexts, how the learning programme unfolds, and identify relevant hindrances or helping factors for working with guidelines. As the learning interventions occur in a short time frame, data will be quickly analysed and used as input for the next session. For the final analysis, a process-oriented temporal evaluation approach will be adopted.

Data collection

In the team learning intervention and the leadership training, data will be gathered through various methods. During all phases of the action spirals, data will be collected through shadowing [41] to understand how district nursing teams learn to work with the guidelines ‘loneliness' or 'caregiver burden.' Observations during sessions will focus on dialogue, verbalised perceptions, and participation. Written notes (i.e., keywords, situations, quotes, short sentences) [42] will be structured into fieldnote reports and treated as data. After each session, the researcher and the nurse lecturer [IW, AvO] will write reflections to understand the observations, serving as a diary. Focus groups will be used at the start and end of both interventions to explore experiences with loneliness, caregiver burden, and guideline use and evaluate the impact of the learning interventions. Focus groups enable in-depth team discussion and effectively explore values, beliefs, and systems. [43] In the team learning programme, a brief, tailored questionnaire will be distributed via a mobile phone application [44] following the time-based sampling method [45] during the weeks between sessions. This diary method will provide insight into

team members' learning moments on the job and the appliance of the guideline. At the beginning of the second, third, and fourth team sessions, some answers will be highlighted to spark conversations about current work situations as cases during the sessions.

Data analysis

Data analysis will occur in two steps. First, data will be collected and analysed in parallel, evolving with the learning intervention. Collaborative analysis with the facilitators [IW, AVO], the district nurse, and the research team [PL, LS, NB] will take place during meetings, providing the foundation for reflection on patterns, underlying causes, and themes. [46] This reflection, part of the action spiral [30], will inform the preparatory materials for subsequent sessions. Second, a longitudinal qualitative approach [47] will be used to identify the unfolding of learning processes over time in a district nursing team and evaluate the intervention's impact. We will reconstruct the timeline and group the related observational reports, reflections, and transcripts. The analysis and sensemaking will follow the six steps described by Braun & Clarke. [48]

ETHICS AND SAFETY

The study has been approved by the Ethical Committee Research of the University of Applied Sciences Utrecht (reference number 165-001-2022 and reference number 157-001-2022). All participants will be asked to provide their written consent before participating in either the team learning programme or the leadership training. All participants will be informed that they can withdraw from the study at any time.

DISSEMINATION PLAN

Dissemination will be a continuous process throughout the research. Workshops, presentations, and summary documents will be developed for different audiences. A symposium will be organised for the participating organisations and their staff to summarise our research activity and output, providing

guidance on incorporating expansive learning in daily practice. User-friendly versions of our findings will be developed for the Dutch nursing audience, care organisations and policy makers. For the academic community, research articles in peer-reviewed journals will be written, and conference presentations will be held. Preliminary findings will also be regularly presented within the research centres at the University of Applied Sciences Utrecht and University Medical Center Utrecht.

DISCUSSION

This article outlines the LEARN programme, a research study and educational intervention for district nurses. It supports district nursing teams in learning how to use the guideline 'loneliness,' or caregivers burden' in daily work practice, and it comprises a leadership programme to enhance district nurses' impact in adopting new knowledge. Nevertheless, this design has potential challenges.

First, the protocol's strong emphasis on theoretical concepts and design for both the team learning programme and the leadership training may be seen as a set programme that cannot be altered. This may contradict action research principles. [32] However, the design outlined here is preliminary, and alternating phases of data collection and analysis will inform the next steps, making it responsive to context. [17] Moreover, the design enables researchers to go beyond improving practice and develop theories on strategies that enhance district nursing teams' guideline use in daily practice. [49]

Second, the LEARN programme relies on end-user involvement, including district nurses and district nursing teams, and is a prerequisite for achieving the programme's goals. Therefore, time and resources are required to build authentic and trusting relationships between the research team and the end users. [50] The pitfall will be prioritising speed over engagement and collaboration. [17]

Although this study protocol focuses on improving guideline use in district nursing practice, some elements of the LEARN programme may be transferred to allied health practices. A systematic review by Goorts, Dizon, and Milanese [51] showed that an implementation strategy for allied healthcare professionals to use guidelines should be adaptive to the context, include educational meetings, and support clinicians. Therefore, the team learning programme and the leadership training may also be converted to other health professionals.

Figure 1: Study overview

Figure 2: Team learning invention overview combined with data collection methods

Figure 3: Leadership training overview combined with data collection methods

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AUTHOR'S CONTRIBUTION

Inge Wolbers: conceptualization, methodology, visualisation, writing original draft. **Arjan van Os:** methodology, resources, writing – review and editing. **Pieterbas Lalleman:** methodology, supervision, writing – review and editing. **Lisette Schoonhoven:** methodology, supervision, writing – review and editing. **Nienke Bleijenberg:** funding acquisition, methodology, supervision, writing – review and editing, guarantor.

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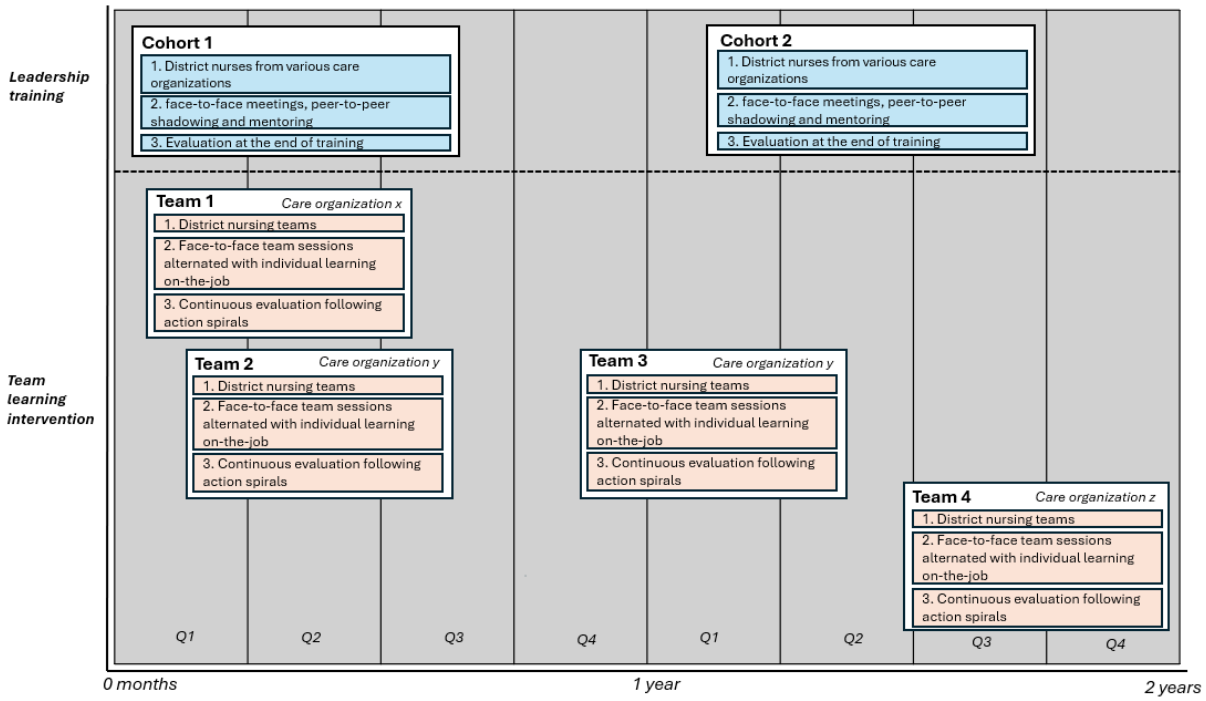
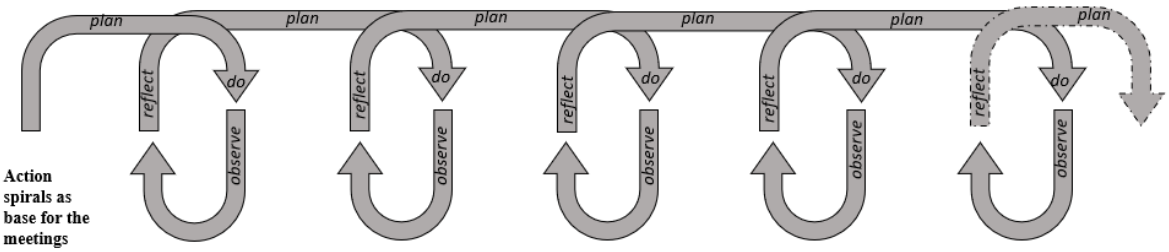
CONFLICT OF INTERESTS

None declared.



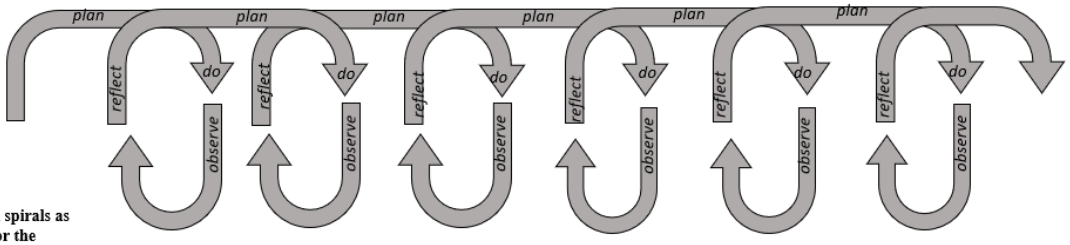
Team learning program

Session **Duration**	Session 1. 3.5 hours.	Session 2. 3 hours.	Session 3. 3 hours.	Session 4. 3 hours.	Session 5. 3 hours.
Participants	Full team.	Team representatives.	Team representatives.	Team representatives.	Team representatives.
Title	*'The actual and desirable situation'*	*'When are we doing it right'?*	*'How do we do it now?'*	*'How are we going to do it?'*	*'What do we yield?'*
Preparatory materials	▪ Educational blueprint. ▪ Focus group guide.	▪ Educational blueprint. ▪ Questionnaire via mobile phone.	▪ Educational blueprint. ▪ Questionnaire via mobile phone. ▪ Routine care data.	▪ Educational blueprint. ▪ Questionnaire via mobile phone.	▪ Educational blueprint. ▪ Focus group guide.
Action spirals as base for the meetings					
Data collection methods	▪ Field notes. ▪ Written reflections. ▪ Focus group interview.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	▪ Field notes. ▪ Written reflections. ▪ Questionnaire data.	Field notes. Written reflections. Focus group interview.

Leadership training

Mentor meetings (max. 6 hours)

Peer-to-peer shadowing (max. 3 times)

Session	Training 1	Training 2	Training 3	Training 4	Training 5	Training 6	Evaluation
Theme	*'Introduction to the training'*	*'Leadership development'*	*'Learning from ECD data'*	*'Socratic conversation'*	*'Coaching of team members'*	*'Leadership in practice'*	
	2 hours	3 hours	4 hours	4 hours	4 hours	4 hours	
Action spirals as base for the training							
Data collection methods	▪ Field notes ▪ Written reflections ▪ Focus group interview	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections	• Field notes • Written reflections • Focus group interview	• Focus group interview