Supplement 2 to

Expanded nursing competencies to improve person-centred care for nursing home residents with complex health needs (Expand-Care): study protocol of an exploratory cluster-randomised trial

Description of the Expand-care intervention components and implementation strategies based on the TIDieR template (Template for Intervention Description and Replication, Hoffmann et al. 2014[1])

In the following, the Expand Care intervention is presented in terms of the rationale, the target group, the way of implementation and the materials used. The intervention is defined as a new role profile for nurses with expanded competencies for person-centred care. This role is specified by intervention components (activities) at a resident-related and an organisation related level, which are additionally differentiated as core and optional elements (Fig. 1, Table 1).

Additionally, strategies to ensure the implementation of the intervention are presented according to the same scheme (Table 2).

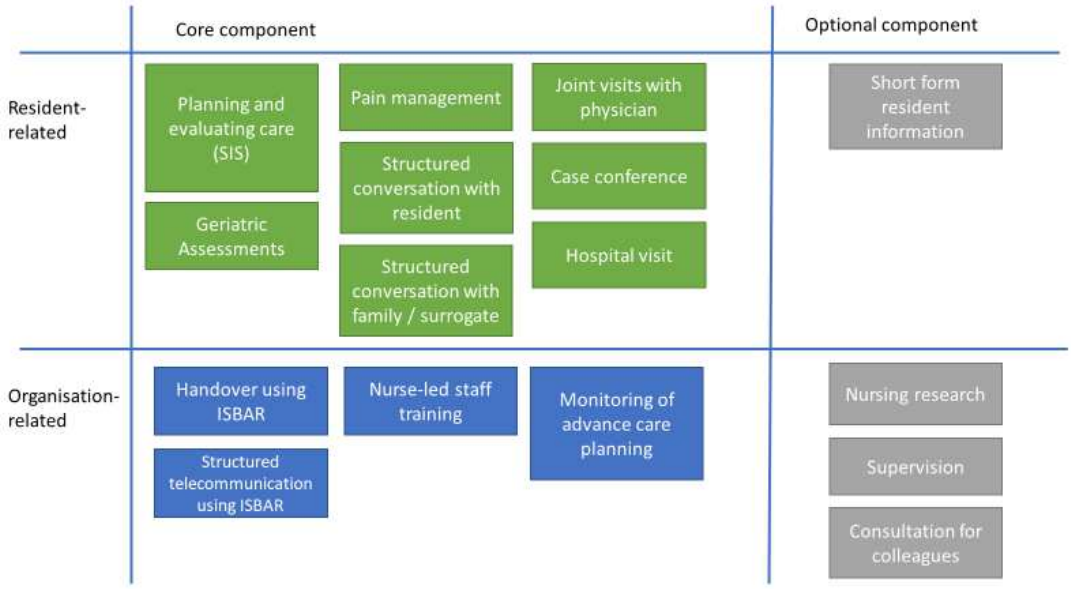

Figure 1: Core and optional components of the Expand-Care intervention. SIS: Structured Information Collection®.

[1] Hoffmann TC, Glasziou PP, Boutron I, Milne R, Perera R, Moher D, et al. Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. BMJ. 2014;348:g1687.

TIDieR Expand-Care

Table 1: Intervention components

Intervention component	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
Resident-related activities						
Planning and evaluating care	Residents Place: nursing home (NH)	Through targeted planning that considers the long-term course of defined events, changes in the condition are better perceived and activities/services can be derived in advance and initiated or adapted in a timely manner. The planning and evaluation of the care situation is the central element for deciding on the use and linkage of different intervention components. Structured according to the SIS® [strukturierte Informationssammlung] (structured assessment plan), all elements of a complex nursing assessment are mapped and the component is linked to the existing system of care planning so that integration is supported.	PEPA	PEPA carries out planning and evaluation of care by means of a decision algorithm. Based on the results, nursing measures (as well as intervention components such as assessments or structured conversations) are implemented or medical measures are initiated. Guiding points for the decision algorithm are key events that are defined on the basis of the resident's transition through the course of care in the care facility (e.g. moving in, settling in, increase in care needs, health deterioration, hospitalisation).	Defined by (key) events related to the individual situation of the residents (e.g. moving in, settling in, increase in care needs, health deterioration, hospital stay).	SIS-based decision algorithm: planning and evaluation tool
Structured conversation with resident	Residents Setting: NH (residents' room or counselling room)	Structured discussions ensure that residents have the opportunity to reflect and express their needs and that these are considered in their care. Residents perceive that their right to make decisions is taken seriously.	PEPA	Personal structured conversation with residents in an undisturbed setting. Topics are life in the facility; self-care, chronic illnesses; nursing care; communication with	At regular intervals and at key events defined in the SIS-based decision algorithm (e.g. moving in, deterioration in health, hospitalisation).	Interview guide for structured conversation with residents (linked to the SIS).

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TIDieR Expand-Care

Intervention component	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
		Guiding questions ensure that all relevant topics are considered. The component is linked to the SIS and thus to the existing system of care planning, so that integration is supported.		doctors, therapists, relatives; advance care planning (status).		
Structured conversation with relatives	Relatives / surrogates Setting: NH (residents' room or counselling room)	Structured discussions ensure that the perspective of relatives and important information from them are considered in care. The organisation of medical care and social support can thus be coordinated with the relatives. The conversation's structure is based on the structure of the conversation with residents, so that it is possible to link results with the documentation.	PEPA	Personal structured conversation with relatives, if necessary together with the resident.	At regular intervals and at key events defined in SIS-based decision algorithm (e.g. moving in, deterioration in health, hospitalisation).	Interview guide for structured conversations with relatives (linked to the SIS).
Joint visit with General practitioner (GP)	General practitioners and specialists Residents Relatives Setting: NH	By accompanying physicians' ward rounds, current observations, questions and needs of the residents can be clarified directly and more efficient communication (differentiated use of ward rounds, fax and telephone calls) can be promoted. The ISBAR scheme promotes the complete and focused transfer of information. The continuous and structured approach promotes regular evaluation and adjustment of the care situation. The	PEPA (or nurse in charge)	Time for joint visits is scheduled in the PEPA's or supervising professional's duties for visits that are scheduled in advance or regularly. Beforehand, the accompanying person compiles information based on the ISBAR scheme.	Depending on on-site visits by the supervising physicians	Template for structured transfer of information in handovers (ISBAR scheme, Identification, situation, background, assessment, recommendation).

TIDieR Expand-Care

Intervention component	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
		involvement of residents (and relatives) promotes regular communication between the parties involved. In addition to joint visits, the organisation, coordination and evaluation of the visit with GPs within the NH is beneficial for interprofessional collaboration.				
Case conference	Residents Relatives General practitioners and specialists Other parties involved in residents' medical care and nursing Setting: NH or virtual conference	Through direct communication of all those involved in resident's care, needs and care can be directly coordinated and timely and needs-based care can be ensured. Participation of residents and relatives supports the person-centred perspective of care. Residents perceive that their right to decide is taken seriously and that care measures address their own wishes. The care situation is evaluated and adapted interprofessionally. By taking a longitudinal view, undesirable events can be anticipated and preventive measures can be taken. The joint holistic and comprehensive view promotes the professional and personal competence of those involved.	PEPA	PEPA organises appointment and carries out preparatory care planning, collects information in advance if necessary, including current or long-term issues.	One case meeting per 6 months	Guideline for case conferences If applicable, video conferencing system and hardware
Hospital visit	Residents Acute care ward team	By visiting residents during inpatient treatment, questions that arise due to acute	PEPA or nurse in charge	Visit the clinic, obtain authorisation in advance to obtain	For hospital stays lasting longer than 3 days.	

TIDieR Expand-Care

Intervention component	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
	Setting: Hospital	changes in care after the hospital stay can be clarified and prepared in advance. The acute care ward team can be supported in dealing with residents' special needs.		information about the resident's care.		
Pain management	Residents Setting: NH	Residents' quality of life is promoted through the individual support of the pain therapy.	PEPA	Procedure and instruments according to the recommendations of the S3 guideline "Pain assessment in older people in full inpatient care for the elderly" (German Pain Society & German Centre for Neurodegenerative Diseases 2017)	According to the needs of the resident(s)	Templates for instruments according to the S3 guideline "Pain assessment in older people in full inpatient care for the elderly".
Geriatric assessments	Inhabitants:in Setting: NH	Through geriatric and nursing assessments, changes in residents' condition are recognised and documented at an early stage, can be adequately communicated and used to support the initiation and evaluation of individual measures.	PEPA or trained professional	Depending on the assessment method	Regularly depending on the assessment and on an ad hoc basis (according to the result of SIS-based decision algorithm)	Assessment tools, for example: • Mobility • Fall • Cognition • Delir • Nutritional status • Pain • Skin condition • Continence • Change in medication
Organisation-related activities						
Care handover according to ISBAR	Nursing team General practitioners and specialists	The ISBAR structure ensures complete and efficient communication about the current care needs of the	PEPA, professionals	The handover of care is structured using the ISBAR scheme.	At every care handover	ISBAR scheme and information materials explaining the application

TIDieR Expand-Care

Intervention component	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
	Other parties involved in residents' medical care and nursing Setting: NH	residents. Important information is prioritised.				
Structured (fax) communication	General practitioners and specialists Other parties involved in residents' medical care and nursing Setting: NH	Structured communication ensures that information is passed on in full and that there is an adequate basis for decision-making for GPs and physician specialists, so that decisions can be made more quickly.	PEPA, professionals	A pre-structured fax form is used for the transmission of information or enquiries to general practitioners and specialists.	For all fax communications with general practitioners and specialists.	Fax form with ISBAR scheme
Training (on ISBAR)	Nursing team Setting: NH	Through the training, the nursing staff members are introduced to the structured handover and the implementation is practised so that it can be adopted in the handovers without guidance.	PEPA	PEPA organises the training for nursing staff on ISBAR. The training includes information and exercise modules as well as supporting information materials	Once in the study period on the topic of ISBAR	ISBAR scheme and information materials explaining the application Training concept prepared by PEPA as part of the PEPA curriculum.
Monitoring of Advance Care Planning	Nursing team General practitioners and specialists Setting: NH	The monitoring of ACP should ensure that existing plans are documented and known. This will improve the conditions for implementing the wishes of the residents.	PEPA	The PEPA checks whether advance care planning or health care planning exists and is documented. PEPA checks the consistency of entries on ACP in the analogue and digital documentation. In case of discrepancies, their PEPA	Regularly and on an ad hoc basis, e.g. after a stay in hospital or health deterioration	Existing documentation of information on ACP in the facility (digital and analogue).

TIDieR Expand-Care

Intervention component	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
				initiates clarification, e.g. in cooperation with the ACP facilitator of the nursing home.		
Peripheral elements (optional)						
Participation in evidence-based practice development	Organisation / Facility Setting: NH	Through specified impulses from practice for research, questions relevant to the institution can be worked on in cooperation with nursing scientists. Thus, further development of nursing practice in an evidence-based manner can be supported and quality of care care can be improved.	PEPA	PEPA identifies needs for quality development or research and initiates cooperation with quality management or the University.	On demand.	
Supervision	Nursing team Setting: NH	The targeted discussion of cases from practice that are experienced as difficult on the one hand promotes learning from experience. On the other hand, situations experienced as stressful can be worked through in the team to enhance mutual support and reduce stress.	PEPA	PEPA offers supervision in the form of structured case discussions of about 1 hour. Cases that are experienced as difficult or stressful are selected.	On demand	Background information given as part of the curriculum. Guiding questions for structuring a supervision session.
Collegial counselling	Nursing team Setting: NH	Through the possibility of an individual conversation, topics can be addressed that are not suitable for supervision. In particular, professional uncertainties or one's own mistakes can be discussed and thus learnt from experience.	PEPA	PEPA is available for one-to-one meetings on an ad hoc basis with a focus on professional discussion.	On demand	Background information given as part of the curriculum.

TIDieR Expand-Care

Intervention component	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
Short info sheet	Care team, external health care providers Setting: when care is provided outside the NH, e.g. clinic	Important information about the resident is briefly summarised on an information sheet so that care outside the nursing home can be tailored to residents' individual needs.	Nursing team	The PEPA creates and presents the information sheet and makes sure that the nursing staff implement it.	Initially with all residents [of the study], then event-related (as part of the planning and evaluation of the care situation).	Information Sheet Template

GP: General practitioner; ISBAR: Information, situation, background, assessment, recommendation, template to ensure structured and complete information transfer in handovers; NH: Nursing home; PEPA: German acronym for nurse specialist with expanded competencies for person-centred care; PDL: nurse manager; SIS®: [Strukturierte Informationssammlung] structured plan for the professional assessment of residents' care needs, containing a broad question (What is important to you at the moment?) and six assessment topics (1. Cognitive and communicative abilities; 2. Mobility and agility; 3. Health related requirements and burden; 4. Self-care; 5. Living in social relationships; 6. Living environment) as well as a matrix for the assessment of nursing-sensitive risks within the assessment topics.

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TIDieR Expand-Care

Table 2: Implementation strategies

Implementation strategy	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
Education						
PEPA Curriculum (training programme)	PEPA Setting: University of Lübeck, online, NH	The training programme ensures the PEPAs' knowledge of person-centred care. They are supported in developing their understanding of their role and develop competences for transferring the knowledge into care. The learning objectives and learning target checks are documented in the curriculum.	Lecturers from the participating universities, learning in working groups, supervision by the university.	Different learning formats according to the curriculum.	A total of 300 hours of teaching (10 ETC), consisting of contact time, self-study and on-the-job training. The qualification takes place in the first three months after randomisation.	Learning materials and tools according to the curriculum. Manual for documenting learning objectives, presentations, digital learning platform (Moodle), assignment descriptions, materials individually designed by lecturers.
Monitoring / Evaluation						
PEPA Handbook	PEPA Setting: University of Lübeck, NH	A detailed manual for documenting participation in courses and other learning activities, as well as for documenting learning objectives, increases the commitment to implementation and shows PEPAs their learning progress.	Study centres	The study centres introduce the handbook during contact time and provide a print version. Attendance is documented in the courses. PEPA maintains the handbook and collects the documentation.	According to curriculum. The handbook is kept during the three months of the training programme (implementation).	Print version of the manual.
Target agreement talks	PEPA Nurse manager (PDL) Setting: NH	The aim of the conversation is to talk about a shared idea of good care and how the intervention (role of PEPA) can support this. This will involve the PDL more in the project and thus support the implementation of the intervention components. Hindering and supporting factors	PEPA PDL If applicable, researchers from the university	PEPA and PDL meet to discuss study participation and implementation and document the outcome of the discussion in writing.	Meetings of 45-60 min, time points: 1. After randomisation, before the start of the training programme. 2. 4 weeks after randomisation.	Interview guide and protocol template.

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TIDieR Expand-Care

Implementation strategy	Target group Setting	Why?	Who implements?	How?	When and how much?	Materials
		are discussed and solutions are sought if necessary.				
Organisation						
Cooperation agreement with the NH	NH Universities Setting: University, NH	A formal declaration of commitment increases the binding nature of the respective tasks of the partners (nursing homes and universities) in the project and thus supports compliance with the project plan, in particular the recruitment of participants, granting PEPAs worktime to perform Expand-Care tasks and the implementation of the curriculum.	Study centres and NH	Study centres hold a cooperation agreement, authorised representatives of the university and the NH sign the agreement.	Before the recruitment of residents begins.	Draft contract for the cooperation agreement.
Adaptability of the intervention	NH, PEPA Setting: NH	The PEPA intervention comprises several sub-components, some of which can be implemented optionally, others are mandatory. The possibility to adapt the intervention to the individual circumstances and needs of the NH promotes identification with the intervention and subsequently implementation.	PEPA PDL Researchers at the university.	At the beginning of the implementation, it is determined which components the intervention should include in the respective NH (discussion with PEPA, PDL and university).	After randomisation. If necessary, further discussion during the study if it becomes apparent that there are deviations from the original planning.	Interview guide and protocol template.

GP: General practitioner; ISBAR: Information, situation, background, assessment, recommendation, template to ensure structured and complete information transfer in handovers; NH: Nursing home; PEPA: German acronym for nurse specialist with expanded competencies for person-centred care; PDL: nurse manager; SIS®: [Strukturierte Informationssammlung] structured plan for the assessment of residents' care needs, containing a broad question (What is important to you at the moment?) and six assessment topics (1. Cognitive and communicative abilities; 2. Mobility and agility; 3. Health related requirements and burdens; 4. Self-care; 5. Living in social relationships; 6. Living environment) and a matrix for risk assessment and care needs.

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