Received: 17 December 2021 | Revised: 5 May 2022 | Accepted: 14 September 2022

DOI: 10.1002/nop2.1389

RESEARCH ARTICLE

NursingOpen Open Access WILEY

Dementia care in acute hospitals: A framework for practice development and theory-based evaluation

Melanie Karrer[1,2] | Adelheid Zeller[2] | Hanna Mayer[3]

[1]Department of Nursing Science, University of Vienna, Vienna, Austria

[2]Department of Health, Competence Center Dementia Care, Institute of Applied Nursing Sciences, OST Eastern Switzerland University of Applied Sciences, St. Gallen, Switzerland

[3]Department of General Health Studies, Division Nursing Science with focus on Person-Centred Care Research, Karl Landsteiner University of Health Sciences, Krems, Austria

Correspondence
Melanie Karrer, Department of Nursing Science, University of Vienna, Vienna, Austria.
Email: melaniekarrer@outlook.com

Funding information
Stiftung Pflegewissenschaft Schweiz

Abstract

Aim: The aim was to generate a framework for dementia care in acute hospitals.

Design: Framework development with logic modelling.

Methods: In phase one, we identified relevant elements of the framework by analysing several sources and by critically discussing them within the research team. We created the framework with logic modelling. In phase two, we adapted the framework in expert workshops and by reanalysing the included sources. We used the first stage of CReDECI 2 checklist for reporting.

Results: The framework describes necessary activities within four main bundles of measures: "developing structures and processes," "developing competences and attitudes," "building relationships" and "ensuring a social environment and adequate stimulation." The overarching outcome is a person-centred hospital culture, manifesting itself on different levels. The framework illustrates the necessity of an organization-wide person-centred culture for achieving positive outcomes for people with dementia, their relatives and health professionals.

KEYWORDS
acute care, dementia, framework, hospital, logic model, practice development, theory-based evaluation

1 | INTRODUCTION

People with dementia have a significantly higher risk of a hospital admission than those without dementia (Shepherd et al., 2019), frequently due to orthopaedic, respiratory or urological crises (Toot et al., 2013). A study in German hospitals showed that 20% of older patients on normal wards had dementia (Bickel et al., 2018). Simultaneously, acute care hospitals are institutions with strong traditions and rigid structures that concentrate on medical interventions and less on psychosocial care (Parke & Chappell, 2010; Turner et al., 2017). This conflicts with the needs of people with dementia as psychosocial interventions are especially important for them (Kitwood, 2019; Parke & Chappell, 2010). Furthermore, staffing levels, skill mix and skill deficits are hindering adequate care for people with dementia in the hospital setting (Røsvik & Rokstad, 2020; Scerri et al., 2020).

2 | BACKGROUND

Acute care delivery for people with dementia in general hospitals can be challenging for all persons involved—for people with dementia, relatives and health professionals. Due to communication difficulties, distressed behaviours and disorientation, health professionals

in acute care hospitals find it difficult to care for people with dementia (Turner et al., 2017). Relatives of people with dementia worry about inadequate hospital environments and consequences of inappropriate care (Burgstaller et al., 2018). People with dementia experience the physical environment as unstable, chaotic and unsafe (Scerri et al., 2020). This might result in anxiety, fear and worry (Reilly & Houghton, 2019). Staying in an acute hospital might have negative consequences for people with dementia. Decreased cognitive function and a higher level of dependence (Alzheimer's Society, 2009) are possible consequences. Nursing home admission at discharge (Fogg et al., 2017) or a high risk of delirium (Margiotta et al., 2006) might be further negative effects.

There are many initiatives to change this situation. Among these are expert-based recommendations, guidelines and pathways intending to improve acute care of people with dementia (Australian Commission on Safety and Quality in Health Care, 2014; Royal College of Nursing, 2013).

Furthermore, there are efforts to scientifically develop and evaluate single interventions, such as educational interventions (Abley et al., 2019), special care units (Goldberg et al., 2013), the use of "dementia specialist nurses" (Griffiths et al., 2015) or involving volunteers in acute care (Bateman et al., 2016). Publications addressing these interventions show only few effects on patient outcomes. Furthermore, the interventions have some positive effects but do not result in significant long-term improvement (Karrer et al., 2021). Reasons for this may be associated with the high complexity of such interventions, different influencing factors, personal characteristics of the persons involved and organizational culture (Craig et al., 2021). Furthermore, most of the existing interventions do not sufficiently address the complexity of the hospital environment and its multiple effects on people with dementia (Craig et al., 2021). Interventions are often fragmented, for example focussing exclusively on the education of health professionals or on involving volunteers (Karrer et al., 2021).

Due to the absence of a theory or model indicating the impact of interventions on specific outcomes, it is not clear, whether existing interventional studies measured appropriate outcomes.

These conditions highlight the need for a multilevel approach reflecting the complexity of the situation to improve hospital care for people with dementia in a noticeable way (Naef et al., 2018; Scerri et al., 2020).

3 | AIM

We intended to develop a framework for dementia care in acute hospitals reflecting the complexity of this field. We aimed at defining necessary bundles of interventions to ensure optimal hospital care for people with dementia and to describe related outcomes.

4 | METHODS

Caring for people with dementia in acute hospitals can be regarded as a complex intervention since it involves several interacting components and involved healthcare professionals must respond in a highly flexible way to varying needs of patients and situations. Furthermore, collaboration between different professions in various settings is required, and many different relevant outcomes are possible (Craig et al., 2021).

Thus, when developing a framework for dementia care in acute hospitals, the high complexity must be considered. To develop complex interventions, different sources should be included. Corry et al. (2013) recommend a problem identification by analysing needs, practice and policy and synthesizing existing empirical evidence. We followed this recommendation when defining relevant sources for the development of the framework. To synthesize the sources

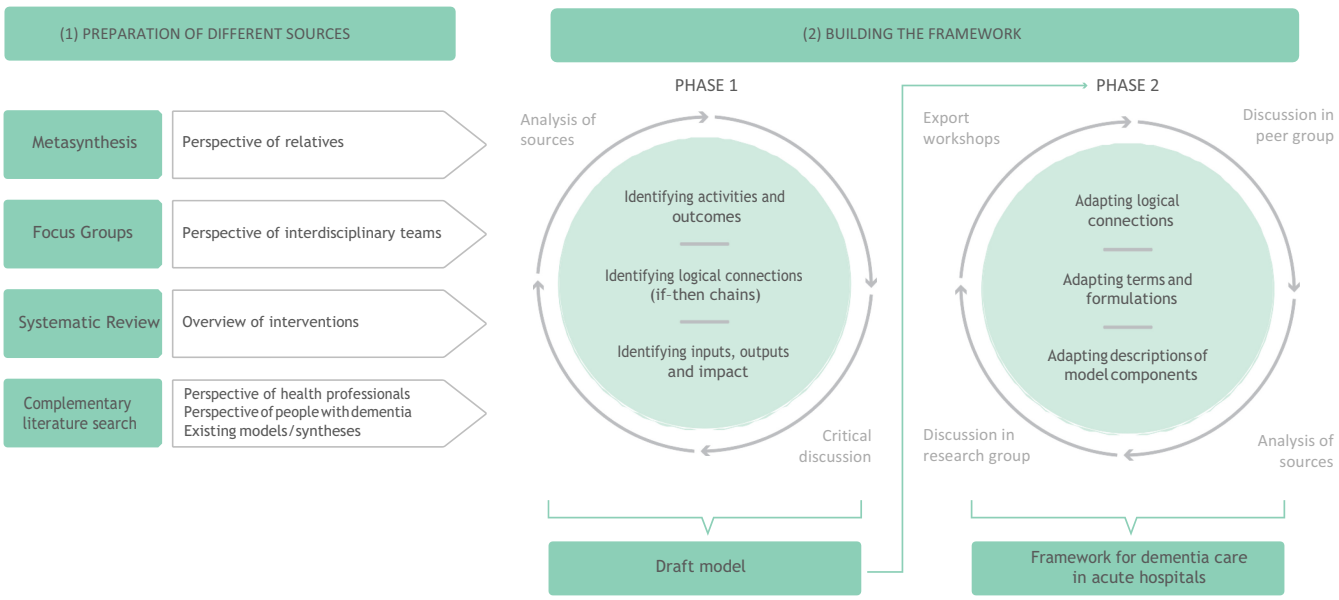

FIGURE 1 Framework development process.

and to develop the framework, we used logic modelling (Knowlton & Phillips, 2013; W.K. Kellogg Foundation, 2004). Figure 1 gives an overview of the framework development process.

4.1 | Sources for the framework

Following the model of Corry et al. (2013), we performed different studies to fill existing research gaps and to consider all relevant perspectives. Table 1 provides an overview of our previously conducted studies. They served as sources for developing the framework (Table 1).

Furthermore, our research was accompanied by an ongoing and complementary literature search to consider all relevant perspectives when developing the framework. Thus, we reviewed existing literature syntheses and models in the development process, for example literature syntheses and studies addressing the perspective of people with dementia (Featherstone et al., 2019; Reilly & Houghton, 2019) and the staff perspective (Houghton et al., 2016; Turner et al., 2017). We also considered reviews and models about the quality of acute hospital care for people with dementia (Handley et al., 2019; Naef et al., 2018; Yamaguchi et al., 2019).

4.2 | The process of building the framework

To develop the framework, we relied on logic modelling (Knowlton & Phillips, 2013). Logic models are visual presentations of the pathway from actions to results. They contain the following elements: resources/inputs, interventions/activities, outputs, outcomes and impact. Resources/inputs are essential for interventions/activities. Interventions are actions within the programme and are used to achieve the desired results. Outputs characterize the application of activities with specific participants. Therefore, outcomes are the results of the programme. Impact is the ultimate intended change manifesting itself in an organization, in a community or in a system (Knowlton & Phillips, 2013). Logic modelling allows a careful consideration of the relationship between interventions and results. It indicates what works and why. Furthermore, logic modelling serves to emphasize explicit outcomes and to identify variables to measure (Knowlton & Phillips, 2013).

The process of building the framework consisted of two phases.

4.3 | Phase 1: Identification of relevant framework elements

To identify relevant interventions and outcomes, we analysed the sources included with an inductive approach (Elo & Kyngäs, 2008). First, MK coded all text passages that were named as interventions or that referred to potential interventions and outcomes. Furthermore, potential impact was identified in the texts. MK then created categories within the identified interventions and outcomes by summarizing similar interventions and similar outcomes. The categories were discussed with AZ. We used MAXQDA 2018 for this stage of analysis. We described each category on the basis of the information in the articles. Afterwards, we searched for logical connections between identified interventions and outcomes. We created "if-then chains" connecting the different components. Each connection was justified by a logic argument. We defined outputs integrated in the description of the interventions. Afterwards, we defined the necessary inputs. We critically discussed the identified elements and connections within the research group and further adapted them by consulting the included sources once again. We repeated this process until we had completed a draft version of the framework. This draft comprised all relevant aspects and logical connections identified in our sources and within our discussions.

4.4 | Phase 2: Refining the draft version of the framework

We adapted and refined the draft version of the framework in several steps. As Corry et al. (2013) recommend, we consulted experts

TABLE 1 Sources for developing the framework

Source	Content	Methods	Reference
Meta-synthesis of qualitative studies	Experiences and needs of relatives of people with dementia in the acute hospital setting	*Data collection*: Systematic database search of existing qualitative studies *Data analysis*: Meta-ethnography	Burgstaller et al. (2018)
Qualitative focus group study	Perspective of interdisciplinary teams concerning the care of people with dementia in acute hospitals in Switzerland	*Data collection*: Focus group interviews with three interdisciplinary teams in Swiss acute hospitals *Data analysis*: Qualitative content analysis	Burgstaller et al. (2020)
Systematic review of interventional studies	Existing interventions targeting the care situation of people with dementia in the acute hospital setting and related outcomes	*Data collection*: Systematic database search of existing quantitative studies examining the effectiveness of interventions and programmes for dementia care in acute hospitals *Data analysis*: Narrative summary	Karrer et al. (2021)

to critically discuss whether all components, terms and formulations are clear and understandable and if the interrelations between the components are logical and comprehensible. We discussed the framework in a scientific peer group (dissertation colloquium). Afterwards, the research group adapted the framework by discussing the feedbacks of the peer group. Furthermore, we performed online workshops with 10 experts from Germany ($N = 2$), Austria ($N = 3$) and Switzerland ($N = 5$). Their field of expertise comprised dementia care in acute hospitals and/or logic modelling. We sent preparation material to the participants (the framework and a description of the framework, information about the development of the framework and questions for the discussion). We created two groups and each group participated in one workshop. The aim of the workshop was to discuss the components and the connections of the logic model as well as the terms and definitions within the model. Experts were identified from knowledge within the research team, known publications in the field and Internet searches. We discussed the following questions with the participants: Are all components (interventions, outcomes, inputs) understandable and clear? Which ones are not understandable and clear? Are the used terms and formulations clear and understandable? Which ones are not understandable and clear?

Are the connections between the components logical and comprehensible? Which ones are not logical? Are there any connections missing?

The workshops were organized virtually in June 2019 and lasted 3 hr each. Appendix S1 provides further information about the workshop participants. After the workshops, MK integrated the participants' comments in the framework. We discussed the modified version of the framework within the research group. During all steps of the development process, we consulted the included sources again.

5 | RESULT: FRAMEWORK FOR DEMENTIA CARE IN ACUTE HOSPITALS

We created a framework for dementia care in acute hospitals (Figure 2). The framework can inform the implementation of structures for optimal dementia care in acute hospitals. It also includes aspects that are important and meaningful for evaluation.

5.1 | Overarching outcomes and impact

The framework results in the overarching outcome: *A person-centred hospital culture* manifesting itself (a) on the organization level, (b) on the level of health professionals and (c) on the level of people with dementia and their relatives.

a. The overarching outcomes on the organization level refer to a person-centred attitude in the whole organization (which means an organization-wide anchoring of person-centred values that manifest themselves in the attitude and behaviour of all organizational members), individualized processes and structures as well as a care environment fitted to the needs of people with dementia.
b. The overarching outcomes on the level of health professionals are related to a person-centred attitude of all health professionals. Furthermore, every professional should feel confident in caring for people with dementia.
c. The overarching outcomes on the level of people with dementia and their relatives refer to the experience of being involved, being satisfied with care and experiencing well-being in hospital.

The overarching outcomes and its manifestations are aimed at the final impact—the ultimately intended change: a hospital system in which people with dementia receive optimal health care. In this system, professionals provide adequate acute care *and* consider the specific needs of people with dementia. Thus, dementia care will be a self-evident part of acute hospital care, thereby ensuring the integrity of people with dementia.

5.2 | Strategies aimed at the overarching outcomes

To achieve the overarching outcome and to ensure the impact of intended cultural change, multiple interacting measures are necessary. The framework comprises two main strategies: Organization development and realization of person-centred care.

In the following, we describe the measures, the related outcome chains and the necessary inputs.

5.2.1 | Organization development

The context of care is a significant influencing factor for realizing person-centred care. Thus, the strategy of "organization development" is a basic prerequisite for building an appropriate context for dementia care in acute hospitals. The goal of organization development is a hospital culture recognizing the person and putting the person in the centre of care. Organization development is a continuous, never-ending process. Therefore, interventions have to be repeated, evaluated and permanently adapted.

Inputs for "organization development"

Several preconditions have to be fulfilled before implementing the measures. To change well-established structures and processes, the support of the hospital management is necessary. Thus, a person-centred vision and person-centred values of the hospital management are a prerequisite for all interventions. Providing an adequate staff-to-patient ratio and appropriate time and space is essential as well. There is a need for already existing knowledge in dementia care. Therefore, clinical experts, particularly nurses with specialized education in dementia care, are required. To ensure the reflection of organizational change, supervisors are needed. Adapting the

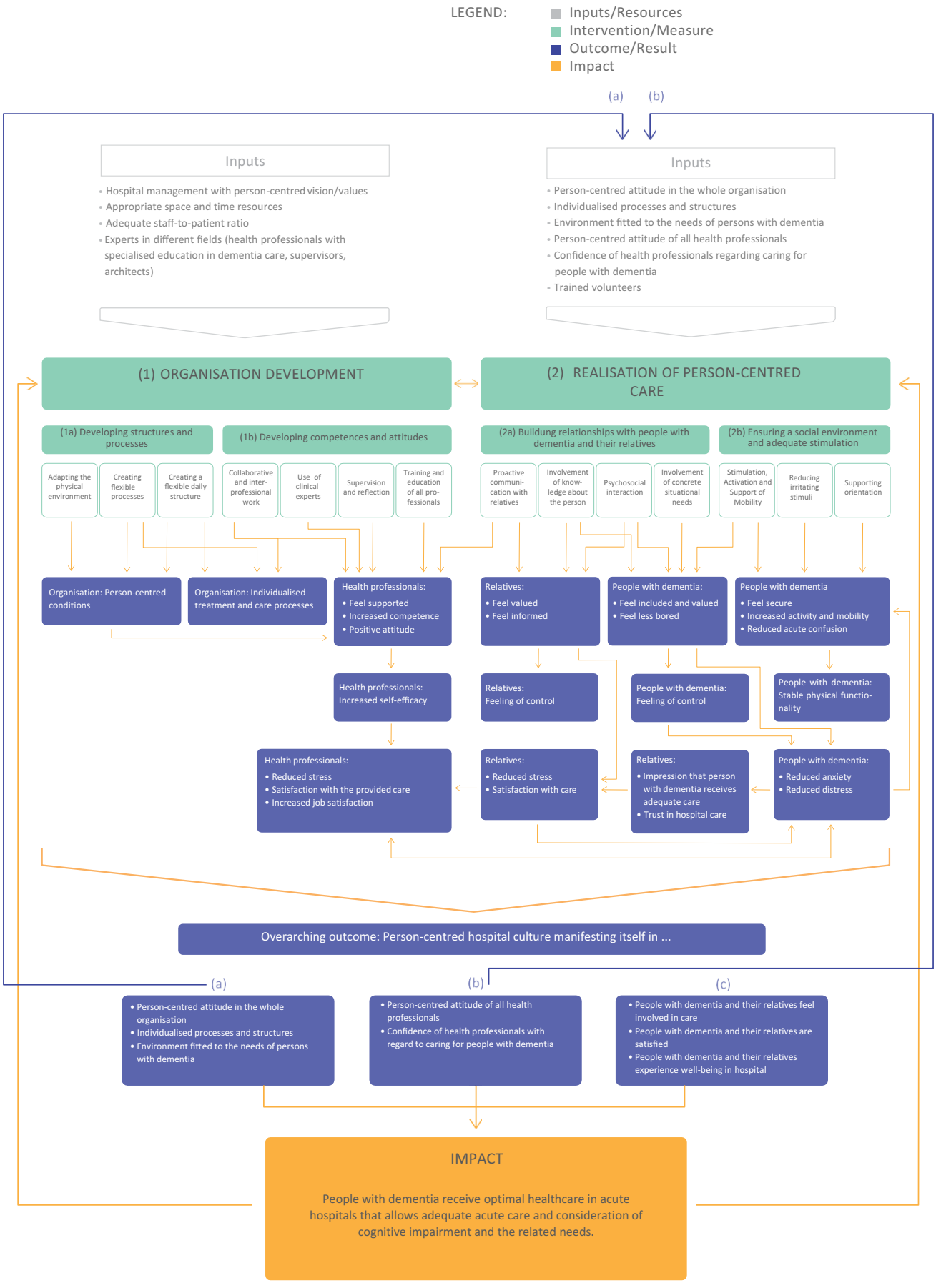

FIGURE 2 Framework for dementia care in acute hospitals.

physical environment of the hospital to the needs of people with dementia is necessary as well. Therefore, involving architects is also required.

Measures of "organization development"

Organization development consists of (1a) developing structures and processes within the hospital and (1b) developing competences and attitudes.

(1a) Developing structures and processes

Fixed routines are a major challenge when caring for people with dementia. Many people with dementia are not able to fit in fixed processes. Thus, there is a need for creating *flexible processes*. To ensure continuity of care, it is necessary to adapt hospital processes. Creating a *flexible daily structure* is required as well. It is necessary to reconsider rigid and fixed timed processes. *Adapting the physical environment* is also of importance. To design dementia-friendly rooms and spaces within the hospital, specialists and consisting guidelines should be involved. An adequate physical environment comprises, for example understandable signs in combination with verbal descriptions, appropriate lighting, friendly colours and floors. Aids for stimulation and orientation should also receive attention, for example an orientation board or dementia-friendly technology (radio and TV sets). The environment should allow moving freely and securely. Outside the patient rooms, attractively designed spaces should invite the person with dementia to relax.

(1b) Developing competences and attitudes

To develop competences for dementia care in acute hospitals, *regular and continuous training and education* of all health professionals is necessary. Thus, the entire staff should receive dementia-related education and training. Managers' participation in individual training sessions can be meaningful. Training should address different levels (awareness-campaigns for non-professionals, basic training for all professionals, special trainings for selected professionals). Person-centred care should be the focus of interactive didactics with integrated interprofessional sessions. To ensure a sustainable effect, regular repetitions, practical support and guidance are necessary. *Clinical experts* can offer practical support. They serve as contact persons for clinical staff in difficult situations with patients with dementia. Additionally, clinical experts can facilitate the transfer of newly acquainted knowledge into clinical practice.

To develop competences and to build a person-centred attitude, *supervision and reflection* are necessary. Caring for people with dementia in acute hospitals is often associated with demanding patient situations (e.g. associated with ethical dilemmas). In supervisions, health professionals have the possibility to reflect their experiences and to discuss their attitudes.

Collaborative and interprofessional work is also necessary for developing competence in dementia care. To address the complex needs of this patient group in the hospital setting, there is a need for more intensive communication between professionals (e.g. nurses and therapists) and clinical disciplines (e.g. between surgery and geriatrics). Therefore, it is necessary to develop structures for interprofessional exchange (e.g. case conferences and documentation systems). This allows professionals to learn from each other and to benefit from each other's experience. In regular interprofessional meetings, they can evaluate common goals. Collaborative work also comprises communication with health professionals outside the hospital (e.g. general practitioners and nurses in the nursing home).

Outcomes of "organization development"

All measures concerning the development of structures and processes (1a) result in person-centred conditions necessary to provide optimal care for people with dementia in acute hospitals. Structures and processes are more flexible, and the environment provides the possibility to implement person-centred care. Consequently, health professionals can address the individual needs of patients with dementia. Health professionals are able to set individual priorities, depending on the patients' needs and the situation. Under these circumstances, health professionals experience a supportive working environment. Due to enhanced flexibility and an intensified interprofessional collaboration, treatment and care processes are individualized.

Furthermore, all measures related to the development of competences and attitudes (1b) result in positive outcomes for health professionals. Their competence (knowledge and skills) in caring for people with dementia increases. Furthermore, their attitude towards caring for people with dementia is more positive. The entire professional team has a common understanding of caring for people with dementia since all received the same training with integrated interprofessional sessions. Increased knowledge and a positive attitude manifest themselves in increased attention for the needs of people with dementia. Thus, health professionals are adequately prepared to identify causes of changed behaviour and to respond adequately. Under these circumstances, health professionals value caring for people with dementia. They perceive it as important and are motivated to provide person-centred care. Furthermore, health professionals feel supported since they received necessary training and can rely on clinical experts in complex situations. Based on these preconditions, their burden in difficult situations decreases. Health professionals experience a benefit from intensified interprofessional collaboration and from the knowledge exchange between clinical disciplines. Under these circumstances, their self-efficacy increases. Due to feeling well-prepared and supported, health professionals trust themselves and feel competent to manage complex situations with people with dementia. As a result, health professionals experience less frustration and uncertainty in complex situations. Their stress level decreases, and they experience higher job satisfaction. In the long term, health professionals feel well-prepared for dementia care and practice a person-centred attitude.

Interventions addressing organization development and corresponding outcomes build the basis for realizing person-centred care. This does not mean that organization development is completed. All

measures should be continuously evaluated, adapted and repeated. The adaptation process of organization development particularly depends on experiences associated with the second main strategy "realization of person-centred care."

5.2.2 | Realization of person-centred care

This strategy follows after the process of organization development has been initiated. It describes which measures are necessary to implement person-centred care for people with dementia in the hospital setting. The implementation is dependent on the level of organizational development with regard to person-centred structures and processes.

Inputs for the "realization of person-centred care"

The overarching outcomes (a) and (b) are the inputs for realizing person-centred care. Thus, a person-centred attitude in the whole organization, individualized processes and structures, and a care environment fitted to the needs of people with dementia are necessary to realize person-centred care in acute hospitals. Furthermore, it is important that all health professionals have a person-centred attitude and that they feel confident in caring for people with dementia. Additionally, a pool of trained volunteers must be in place.

Measures for the "realization of person-centred care"

This strategy contains (2a) building relationships with people with dementia and their relatives as well as (2b) ensuring a social environment and adequate stimulation.

(2a) Building relationships with people with dementia and their relatives

Building relationships is central in the care of people with dementia. Thereby, it is necessary to perceive people with dementia and their relatives as one related system, rather than as single persons. For relatives of people with dementia, it is important that health professionals take the initiative for communication. Thus, health professionals should regularly contact relatives and inform them about the symptoms and the behaviour of the patient. Health professionals should keep relatives up to date with regard to ongoing care and treatment. Including relatives in a comprehensive assessment concerning, among others, cognition, pain and delirium is highly relevant. Health professionals should appreciate information provided by relatives. It is essential to value the relatives' presence in hospital. Discussing and negotiating roles with relatives is significant. It offers the opportunity to decide which role and function they prefer (e.g. actively participating in patient care or being a visitor). Furthermore, relatives should know how and when they can contact health professionals if they need further information. Relatives should have the possibility to talk about their concerns and psychosocial issues.

Building relationships contains the involvement of knowledge about the person with dementia. On the one hand, this knowledge is based on proactive communication with relatives and on the documentation of this information. On the other hand, health professionals gain knowledge by means of assessments and conversations with the person with dementia. The existing flexible and individualized hospital structures (as a result of organization development) offer the possibility to adapt routines based on the knowledge about the person. Involving people with dementia and their relatives in decision-making during the hospital stay is part of high-quality dementia care. Health professionals inform the person with dementia and explain different options (as far as her/his health status allows; if necessary, in the presence of relatives). People with dementia are welcome to express their wishes and preferences. Their decisions are taken seriously. If necessary, health professionals discuss patient preferences with relatives and other health professionals. Furthermore, health professionals recognize situational needs of the person with dementia. Such needs are often not directly expressed. Professionals should integrate these needs in patient care. In this context, psychosocial interaction with people with dementia and their relatives becomes relevant as well. Health professionals should take the initiative to talk about non-medical topics. They should offer conversations concerning psychosocial issues. Listening actively to the person with dementia and to their relatives is essential. Health professionals should show genuine interest in the conversation. They should interact in a personal and warm way.

(2b) Ensuring a social environment and adequate stimulation

Individualized structures and processes resulting from measures related to the "development of structures and processes" (1a) now serve as a basis for concrete interventions in practice. Within these structures and processes, health professionals should ensure adequate stimulation for people with dementia. Combining meaningful activities with social contacts (e.g. social dining, going for a walk, looking at and speaking about photographs) is essential. Occupational therapy or physiotherapy can contribute to this as a form of early rehabilitation. Furthermore, trained volunteers can interact with people with dementia after having received adequate training. Professionals should offer continuous support for volunteers. Under these pre-conditions, trained volunteers can provide one-to-one care for people with dementia. Trained volunteers might also play an important role in the mobilization of people with dementia. If people with dementia have a high risk of falling or feel unsecure outside the patient room, trained volunteers can accompany them. Since the hospital environment is now adjusted to the needs of people with dementia, there are more possibilities for mobilization as part of stimulating activities. Restricting free movement should be the last possible measure if no other intervention is effective.

To prevent overstimulation, health professionals should make sure that the patient room is as calm as possible (without disturbing sounds, telephones and traffic noise).

Health professionals and trained volunteers should facilitate orientation on the ward for people with dementia. Thereby, they can rely on the already existing dementia-friendly environment (e.g.

understandable signs). People with dementia should receive information about using technology on the ward (e.g. radio or television). To ensure an individualized and familiar environment, people with dementia and their families are welcome to bring personal items and pictures.

Outcomes of the "realiation of person-centred care"

Measures associated with "building relationships" (2a) result in positive outcomes for people with dementia, their relatives and health professionals. Due to proactive communication, relatives feel well-informed. Relatives know, what happened when they were absent. If the condition of the person with dementia has changed, relatives receive information. Being informed results in feeling control over the situation. Therefore, relatives experience less stress and higher satisfaction with hospital care. Furthermore, people with dementia and their relatives feel valued as persons. Health professionals appreciate the information they receive from the patient and her/his relatives. Since health professionals actively seek their information and listen to them, patients and relatives feel understood. They note that their information is taken seriously and really has an impact on care. Proactive communication with relatives results in a benefit for health professionals as well. Continuous exchange of information is valuable for them and supports their work. Information from relatives about the patient with dementia can strengthen their competence in caring for the person with dementia. A more positive attitude towards the patient is possible. This leads to increased self-efficacy, reduced stress, higher satisfaction with care and elevated job satisfaction. These positive outcomes for health professionals are further supported when relatives are satisfied with the hospital care. Under this condition, relatives trust the health professionals, and they do not monitor the care. This positively influences the working atmosphere for the health professionals. Due to psychosocial interactions and recognition of their needs, people with dementia feel included, valued and more autonomous. Their mistrust in the hospital environment decreases. People with dementia experience less stress and anxiety. If this is the case, relatives have the impression that the person with dementia receives adequate care. The relatives' trust in the hospital system increases. Relatives experience less stress and higher satisfaction with care.

Measures related to "ensuring a social environment and adequate stimulation" (2b) mainly result in positive outcomes for people with dementia. Due to adequate stimulation and activation, people with dementia feel included, valued and engaged. Their boredom, anxiety and distress are reduced. In turn, their well-being increases. All measures related to (2b) (stimulation, activation, mobilization, reduction of irritating stimuli and orientation) result in a feeling of security. People with dementia experience an environment that is more understandable, and they feel continuously supported.

People with dementia are not left alone in an unfamiliar environment. By contrast, they become more active and mobile, experience trust the environment and have a better orientation. This contributes to stable physical functionality. If the environment is structured according to the people with dementia needs, this results in reduced acute confusion. Unfamiliar sounds are reduced and orientation increases. Due to this, patients with dementia experience less anxiety and distress. This reduces acute confusion. In consequence, they do not refuse care and more seldom express changed behaviour.

Our framework makes obvious that reduced anxiety and distress of people with dementia also decreases the distress of relatives and health professionals. As soon as relatives notice that the person with dementia is well-cared for without negative consequences, they are relieved. Since patients with dementia are less irritated or agitated, health professionals experience reduced stress. People with dementia and relatives notice that health professionals experience less stress and appear more satisfied since they have more possibilities to realize person-centred care.

6 | DISCUSSION

This work presents a framework, explaining the interrelations between inputs, measures and outcomes required for the care of people with dementia in acute hospitals.

We identified two main strategies. First, organization development is necessary. This includes the development of structures and processes of the hospital and the development of competences and attitudes of all health professionals. After organization development, person-centred care can be realized in a second step, including building of relationships and adequate stimulation. In sum, the measures are related to the overarching outcome of a person-centred hospital culture manifesting itself on three levels: on the level of the organization, on the level of the health professionals as well as on the level of the people with dementia and their relatives. The framework reveals that optimal dementia care in acute hospitals needs a person-centred hospital culture with person-centred structures and processes. McCance and McCormack (2017) also point out the necessity of organizational cultures enabling staff to experience person-centredness and to work in a person-centred way. The existence of a healthful culture is the key outcome of the "person-centred practice framework" (McCormack et al., 2021). In our framework, the overarching outcomes on the organizational level are a person-centred attitude in the whole organization, individualized structures and processes, and an environment that fits to the needs of people with dementia. These aspects support health professionals in practicing person-centred care as it is also described within the "person-centred practice framework" (McCormack et al., 2021). According to health professionals, culture and structure of the organization are important enabling or hindering factors regarding the realization of person-centred care (Brossard Saxell et al., 2021). Creating a person-centred hospital culture is associated with barriers and challenges. Hospitals have a strong curative focus, rigid structures, limited resources and a high efficiency pressure (Kirchen Peters & Krupp, 2019). This has to be considered when implementing interventions based on our framework. Furthermore, known facilitators are relevant for future interventions. Committed leaders, adequate resources, supportive persons in practice, involvement of

staff and of people with dementia and their relatives are examples of facilitating factors for implementing interventions in dementia care (Karrer et al., 2020).

In a programme theory for providing effective dementia care in acute hospitals, Handley et al. (2017) emphasize the necessity of adapting working practices and routines to ensure individualized care. Thus, all health professionals should organize their work around the patients' needs. This is closely linked to the skills of the professionals. In our framework, the development of competences and attitudes of all health professionals within the hospital is a precondition for optimal dementia care. According to Handley et al. (2017), it is necessary that health professionals recognize the benefit of working in a dementia-friendly way. By providing optimal dementia care, health professional should meet the expectations associated with their role (Handley et al., 2017). This seems to be an important aspect when developing competences and attitudes of health professionals. Clinical experts are a further important element of our framework for developing competences of health professionals. According to Handley et al. (2017), concentrating the responsibility for adequate dementia care exquisitely on experts could be a barrier to a person-centred culture. Naef et al. (2018) also point out the need for a competent workforce on a general and on a specialist level. This is in line with our framework as the role of clinical experts is embedded in the context of other measures (collaborative work, supervision and trainings) aiming at a person-centred attitude of all health professionals.

6.1 | Strengths and limitations

Our comprehensive research was the source of logic modelling. We developed the framework in the research group and discussed it critically with peers and experts. Experts were involved only at one time point. An ongoing inclusion of expert reviews could have been better in critically questioning the logic of the framework and to detect "blind spots." Furthermore, a more diverse group of experts form different countries could have shown further perspectives. Another point of criticism with regard to logic modelling is linearity in contrast to the complexity of the topic. Our framework is not linear. It reflects the complex interrelations between different measures and outcomes. However, this framework is preliminary. Refinements and testing should occur in practice. The framework describes the *optimum* of health care for people with dementia in hospitals. It offers an important theoretical base for intervention development, but it cannot be implemented directly into practice.

7 | CONCLUSION

We identified two main bundles of measures: organization development and realization of person-centred care. Thereby, the outcomes of organization development function as inputs for realizing person-centred care. The framework emphasizes that optimal dementia care in hospitals requires specific pre-conditions within the organization. The measures and overarching goals of the framework indicate that an organization-wide person-centred culture is necessary to achieve positive outcomes for people with dementia, their relatives and health professionals.

8 | RELEVANCE TO CLINICAL PRACTICE

The framework offers orientation about basic principles of providing optimal dementia care in acute hospitals. It serves as a theoretical basis for the development of concrete interventions. Thus, it can be used to systematically develop a dementia-friendly acute care practice. Furthermore, the framework explains related outcomes to be considered for theory-based evaluation. To apply the framework into practice, it can be well adopted to the respective context.

AUTHOR CONTRIBUTIONS

MK, AZ and HM were responsible for the study design. MK collected data. Data analysis and interpretation were performed by MK, AZ and HM. MK was responsible for writing a first draft of the paper. All authors substantially revised the manuscript critically for important intellectual content and finally approved it. All authors have agreed on the final version and meet at least one of the following criteria [recommended by the ICMJE (http://www.icmje.org/recommendations/)]:

- substantial contributions to conception and design, acquisition of data or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

ACKNOWLEDGEMENTS

We would like to thank all experts who took part in our workshops and critically discussed our framework. Open access funding provided by University of Vienna.

FUNDING INFORMATION

Funding for this study was obtained from the Nursing Science Foundation Switzerland (Stiftung Pflegewissenschaft Schweiz). The funding body had no influence on the study design, the collection and analysis process, the interpretation of the data or the writing of the manuscript.

ETHICAL APPROVAL

The Ethics Committee EKOS approved the study (BASEC-Nr.: Req-2017-00241). As no patients took part in our study, we have not needed to seek patient consent.

CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Melanie Karrer https://orcid.org/0000-0003-0031-2840

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Karrer, M., Zeller, A., & Mayer, H. (2023). Dementia care in acute hospitals: A framework for practice development and theory-based evaluation. *Nursing Open*, *10*, 1393–1403. https://doi.org/10.1002/nop2.1389