

Person-centred practice and technology - a complex intervention study in two Norwegian nursing homes

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Research note

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Abstract

Objective: The overall objective is to explore how the implementation of person-centred practice and use of technology affects patients' and relatives' perceptions of care quality and healthcare personnel's job satisfaction, as well as shed light on nursing students' experiences when performing person-centred interventions. In this paper, the interventions used to assure implementation of person-centredness and use of technology in relation to patients are described to facilitate an increased understanding of the study's future results.

Results: A person-centred practice framework was introduced and facilitated in three phases. These included: 1) Establishing a project group consisting of ward leaders and researchers. Workshops and meetings were held with the healthcare personnel to inform and discuss the concept of person-centred practice, use of technology and the interventions: "one-to-one-contact", collection of life stories, advanced care planning, and point prevalence of wounds, including pressure ulcers, incontinence associated dermatitis and developing a skin care bundle. 2) A twelve months' intervention period including facilitated innovation groups for personnel and leaders and conducting the four interventions. 3) Discussion of results with personnel. Inhibitors and promoters for the continuation of interventions will be highlighted. Strategies will ensure the further development of person-centred practice and use of technology in nursing homes.

Introduction

A systematic person-centred approach to healthcare in nursing homes has proven to have positive effects on patients' perceptions of care quality and satisfaction and their quality of life, as well as healthcare personnel's job satisfaction (1–3). However, previous studies show that interaction based on person-centred principles can be challenging, because the nursing homes' routines take precedence over the patients' individual needs (4, 5).

Another challenge to a person-centred approach to care may be the introduction and use of technology in care for older people, which may lead to changes in treatment and healthcare. It can promote the person's individual needs but also create barriers to it (6). Healthcare supported by technology may also be experienced as simultaneously supportive and contributing to an increased distance between persons (7). It is important to explore the different users' needs, experiences and perspectives (7), and digital competence among healthcare personnel is still a challenge (8–10). In addition, one study found that the most important barriers to introducing technology in nursing homes for persons with dementia were unstable technology and lack of support. This included a lack of collaboration between the technological support service and healthcare personnel in contributing to create common values (11).

Existing studies focus mainly on single elements of person-centred care, and studies that focus on an implementation of person-centred practice are scarce. Further, less is known about the impact of technology on person-centred practice and healthcare quality in nursing homes. Therefore, the overall objective of this intervention study was to explore how the implementation of person-centred practice and use of technology affects the patients' and relatives' perceptions of care quality, healthcare personnel's job satisfaction, and nursing students' experiences of performing person-centred interventions.

Main Text

Person-centred care means that patients are seen as persons and treated like persons (12). It is rooted in Roger's work concerning client-centred therapy (13). During the 1980s and 1990s, Kitwood (13) introduced the concept of person-centred work in the treatment and care of persons with dementia (14). McCormack and McCance (15, 16) developed The Person-centred Practice Framework (PCP framework), which sees person-centredness in a broader perspective and captures the complexity of person-centredness in nursing and healthcare work. The PCP Framework is used as the theoretical basis for the intervention study and is comprised of five constructs: 1) macro context, concerning political and strategic influences; 2) prerequisites, focusing on the attributes of the staff; 3) care environment, focusing on environmental factors of the context; 4)

person-centred processes, focusing on care; and 5) person-centred outcomes, that is, the expected results of effective person-centred practice (16, 17).

Context and sample

The study was conducted in two nursing homes in Norway. The nursing homes were conveniently chosen based on previous collaboration and the head administration's interest in participating in the study. Nursing home 1 (NH1), which conducted all four interventions, was located in new buildings with updated technological solutions and consisted of four long-term wards for persons with dementia housing 96 patients. A total of 130 healthcare personnel, including registered nurses (RN), learning disability nurses, auxiliary nurses, nursing aides, and physicians were included in the study, as well as 16 nursing students doing their clinical placement.

Nursing home 2 (NH2) comprised one sheltered ward with three to four patients with dementia and eight healthcare personnel, including RNs, learning disability nurses and auxiliary nurses; it conducted two of the interventions.

The patients in the two nursing homes were included if their mental and physical health made it ethically justifiable to participate and by giving their written and/or verbal consent. The patients' relatives in both nursing homes were also included in the study.

The interventions

The research team that initiated the interventions had in-depth knowledge of person-centred care, person-centred practice and experience conducting research on person-centeredness and technology. Technology was installed in the nursing homes and ready for use. It comprised safety alarms for patients to wear, sensor alarms on doors, internet and tablets in the patients' rooms and electronic patient journals.

To facilitate the development of person-centred practice, the following four interventions were planned and conducted. 1) *Collecting patients' life stories* (NH1 and NH2) using a standardised form developed by The National Centre for Aging and Health comprising the person's values, interests and social network, and what is of importance for the individual person (18). 2) *Conducting Advanced care planning* (ACP) (NH1) using a form developed by University of Oslo (19). ACP is a process that enables the persons to plan their future health care and way of living based on what is important for them. 3) *Conducting "One-to-one contact" patient – carer* (NH1 and NH2) 30 minutes twice a week. This form of companionship comprises activities the patients choose and determines whether less than 30 minutes alone with one carer is sufficient (20). 4) *Develop and implement "skin care bundle"* (NH1) based on the healthcare personnel's knowledge of and attitude towards pressure ulcers (PUs) and incontinent associated dermatitis (IADs) and the results of a point prevalence survey among patients concerning wounds (21–25).

Table 1
Overview of the four interventions

Intervention	Target persons	Frequency of intervention	Responsible for conducting the intervention
One-to-one contact	Patients	30 minutes twice a week	All healthcare personnel and nursing students
Life story conversation	Patients	Conversations until the form is filled with the information needed for person-centred care	Primary carer and nursing students
Advanced care planning	Patients and relatives	One planned meeting	The primary physician and primary carer and/or leader of the ward
Skin tissue and wound care bundle	Patients	Continuously as part of daily care	All healthcare personnel

The phases of the study

The study was divided into three phases and lasted for a total of 24 months.

Phase 1. Planning the study, conducting baseline measure preparations and workshops with the healthcare personnel

A person-centred practice approach, according to McCormack and McCance (15, 16), was facilitated through a process involving the patients, their relatives, healthcare personnel, leaders and nursing students. During the first six months, several meetings took place between the researchers and leaders of the nursing home wards to prepare for the interventions and discuss how the technology could be used to facilitate and promote the interventions. Baseline data was collected from patients, healthcare personnel, leaders and relatives.

The researchers arranged one workshop for the healthcare personnel, including the physicians, and another for the leaders, in addition separate meetings with the nursing students before they began their clinical placement. The purpose of the process was to familiarise the healthcare personnel, leaders and nursing students with the underpinning principles of a person-centred practice and the four interventions, as well as make it possible to discuss how to perform them. Together with the researchers, the healthcare personnel and leaders engaged in how their work space could become more person-centred. This process started with identification of personal values related to the provision of care and the development of a shared vision for the nursing home. Further, the researchers visited each of the wards to meet the personnel after the workshop to further clarify and tailor the content of the interventions. In addition, the researchers presented and discussed the project with patients and their relatives at a dinner meeting in the nursing home.

Two binders for each ward were prepared. One binder contained descriptions of each of the four interventions, including the teaching material presented during the workshop and a guideline developed for the intervention “one-to-one contact” to guide the personnel in conducting the interventions. The second binder contained documents needed for documenting the interventions concerning each patient, that is, “one-to-one contact”, advanced care planning and life story.

Phase 2. The implementation – 12 months

The researchers facilitated professional innovation groups of up to seven persons for the healthcare personnel, with six meetings a month. Additionally, a separate innovation group was facilitated for the leaders, who met once a month. The aim was for the personnel and leaders to be able to discuss both inhibitors and promoters concerning the interventions, share their experiences and learn from each other. All personnel were to conduct “*one-to-one-contact*” 30 minutes, twice a week alone with each patient that consented to this. Deviation from the intervention, including the reason why, was documented by the individual carer. The *life stories* were to be collected by primary carers and nursing students during conversations with the patients and documented in the binder. The *advanced care planning* was conducted in pairs by the physician and patients’ primary carer along with the patient and their relatives. This was then documented in the patient’s electronic journal. The *point prevalence survey of wounds* was conducted by one RN in all wards during the first month of the intervention period. Based on both the results of the point prevalence survey and questionnaire comprising the knowledge and attitudes of PU and IAD, all healthcare personnel received education sessions about the “skin care bundle” intervention, including risk assessment, skin assessment, repositioning, skincare, and nutrition during months five and six of the intervention period. A point prevalence survey of all patients was repeated in months seven and twelve.

During the implementation phase, one of the researchers visited each ward once a fortnight to answer possible questions concerning the interventions and motivate the personnel to conduct them. The research team and leaders met to discuss the interventions once a month during the intervention period to increase the possibility of sustainment.

Phase 3. Dissemination of results and sustainment of interventions

Results from the implementation will be presented and discussed with the leaders and healthcare personnel in workshops at the nursing homes. Inhibitors and promoters for continuing to conduct the interventions will be highlighted as well as the strategies developed to continue person-centred practice in the nursing homes. Moreover, new possible projects based on the results of this study will possibly be discussed. Healthcare personnel will be invited to present the results from this study at conferences together with the researchers and participate as authors in publications.

Evaluation

Both qualitative and quantitative methods will be used to evaluate the interventions (26). See Table 2 for an overview of evaluation methods in relation to each specific aim, sample and nursing home.

Table 2
Overview of evaluation methods in relation to specific aims and sample

Aims	Sample	Evaluation methods
To explore the impact of person-centred practice and use of technology on patients' perceptions of healthcare quality	Patients in the nursing home NH1	Individual interviews using the questionnaire Quality from the Patients' Perspective – Dementia Care (QPP-DC) including items regarding the use of technology as a baseline and after the intervention period.
To explore the impact of person-centred practice and use of technology on patients' use of medicine and admission to hospital	Patients in the nursing home NH1	Point prevalence of medicine use as a baseline and the intervention period, and mapping of hospital admissions continuously during the 12 month's intervention period.
To explore the impact of person-centred practice on the patients' physical health	Patients in the nursing home NH1	Skin assessment using a point prevalence protocol based on a modified version of the Norton Scale and classification of pressure ulcers (PU), incontinence associated dermatitis (IAD), skin tears and other wounds as a baseline, at six months and after the intervention period.
To explore the impact of person-centred practice on healthcare personnel's job satisfaction and psychosocial work environment	Healthcare personell NH1 and NH2	The Psycosocial work environment and job satisfaction questionnaire as a baseline and after the intervention period.
To describe healthcare personnel's experiences of person-centred care, attitudes and experiences with technology, and knowledge and attitudes of PU and IAD	Healthcare personell NH1 and NH2	The Person-centred Care Assessment Tool (P-CAT), inclusing items concerning use of technology, Pressure Ulcer Knowledge Assessment Tool (PUKAT) and The Attitude towards the Prevention of Incontinence-associated Dermatitis instrument (APrIAD) as a baseline and after the intervention period.
To explore the healthcare personells' initial thoughts and perceptions of life stories, advanced care planning and «one-two-one contact» as operationalisation of person-centred practice, including their thoughts of person-centred care in relation to the technology, and their experience of working in an organisation that facilitate person-centred practice	Healthcare personell NH1	Focus group interviews as a baseline and after the intervention period.
To explore the leaders' initial thoughts and perceptions of life stories, advanced care planning and «one-two-one contact» as operationalization of person-centred practice, including their thoughts of person-centred care in relation to the technology, and their experience of facilitating person-centred practice	Leaders NH1	Focus group interviews as a baseline and after the intervention period.
To explore the physicians' and primary carers' experiences of conducting advanced care planning	Physicians and primary carers NH1	Pair-interviews after the intervention period.
To explore how the relatives experiences that implementation of person-centered practice and use of technology have impacted on their role as relatives	Relatives NH1 and NH2	Individual interviews before the interventions and after the intervention period.

Aims	Sample	Evaluation methods
To explore the nursing students experiences of conducting life story conversations	Nursing students doing their clinical placement in the nursing home NH1	Focus group interview after their clinical placement.

The patients' experience of healthcare quality and the use of technology were measured by personal interviews – conducted both prior to the intervention period (baseline) and after – using the questionnaire "Quality from the patients' perspective – dementia care" (27), which included items concerning technology. Furthermore, a point prevalence was conducted on the patient's use of medication and number of hospitalisations, including the reason for admission, both prior to and after the intervention period. Finally, a skin assessment using a point prevalence protocol for PUs, IADs, skin tears and other wounds (24) was conducted as a baseline, at six months and after the intervention period.

Further baseline data was collected with questionnaires on *healthcare personnel's* job satisfaction and psychosocial work environment; experiences of person-centred care (28); attitudes and experiences with technology; and knowledge and attitudes of PUs and IADs (21–23, 25). Focus group interviews were conducted with the leaders of the wards and healthcare personnel, respectively, to describe baseline and initial thoughts and perceptions of life stories, advanced care plans, and "one-to-one contact" as an operationalisation of person-centred practice, including their experience of person-centred care in relation to the technology.

Individual interviews were conducted with *relatives* to capture their experiences of being included in their near ones' daily life and of technology at the nursing home.

In addition, pair-interviews were conducted with the *physician and primary carer* that conducted the advanced care planning conversations, and focus group interviews were conducted with the *nursing students* to learn about their experiences of collecting the patients' life stories and conducting "one-to-one contact" with patients.

All five interview guides were developed for this study. See Appendix for detailed descriptions.

Limitations

Firstly, even if most healthcare personnel attended the workshops, some were unable to. Attempts were made to address this by preparing binders for each ward with all necessary information. Secondly, nursing homes in Norway closed down in March 2020 due to the Covid-19 pandemic. Consequently, the researchers were not allowed into the nursing homes. However, the contact continued via digital communication. Thirdly, the researchers had limited control of how the interventions were conducted. However, the project leader was invited to monthly project meetings with the ward leaders, and facilitated innovation groups led by the researchers were run every fortnight with the personnel with the purpose of discussing how to conduct the interventions. Lastly, the researchers had no influence on the choice of technology in the nursing home since it was already in place when the project started.

List Of Abbreviations

IAD: incontinence associated dermatitis

NH1: nursing home 1

NH2: nursing home 2

PCP framework: The Person-centred Practice Framework

PU: pressure ulcer

RN: registered nurse

Declarations

Ethics approval and consent to participate

The study was approved by the Regional Committees for Medical and Health Research Ethics (REK 2019/41659), and the Norwegian Center for Research Data (NSD) (Ref. no.291463) was notified about the processing of personal data in the project. The head administration of the nursing home permitted the study to be conducted. Written information about the study, including the principle of the Helsinki declaration (29) and invitation to participate, were given to healthcare personnel, patients, relatives, and nursing students. Written consent was obtained from the healthcare personnel and students that participated in the focus group interviews, as well as from the relatives that agreed to participate in individual interviews. Verbal consent was obtained from the patients that agreed to participate in skin assessment, written consent was obtained from the patients that participated in the survey study, and completion of the questionnaires was regarded as informed consent in the survey studies among healthcare personnel (26).

Consent for publication

Not applicable

Availability of data and materials

Not applicable as no data analyses had been run during the submission of this paper.

Competing interests

The authors declare they have no competing interests.

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Authors' contributions

VAG, CAH, LBF, AKH, GR, LH, CB contributed to the design and planning of the study, and VAG, CAH and CB drafted the manuscript. All authors critically revised the manuscript, read and approved the final manuscript.

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