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Exploring facilitators and barriers to using a person centered care intervention in a nursing home setting

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ABSTRACT

Person-centered care (PCC) interventions have the potential to improve resident well-being in nursing homes, but can be difficult to implement. This study investigates perceived facilitators and barriers reported by nursing staff to using a PCC intervention consisting of three components: assessment of resident well-being, planning of well-being support, and behavioral changes in care to support resident well-being. Our explorative mixed method study combined interviews ($n = 11$) with a longitudinal survey ($n = 132$) to examine which determinants were most prevalent and predictive for intention to use the intervention and actual implementation 3 months later ($n = 63$). Results showed that perceived barriers and facilitators were dependent on the components of the intervention. Assessment of resident well-being required a stable nursing home context and a detailed implementation plan, while planning of well-being support was impeded by knowledge. Behavioral changes in nursing care required easy integration in daily caring tasks and social support.

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Introduction

Improving the well-being of nursing home residents is a central aspect of the nursing home culture-change movement. Some strategies include empowering nursing staff, making nursing homes more home-like, and providing person-centered care (PCC).^{1,2} PCC can be understood as connecting with residents as unique individuals and recognizing that they have their own subjective experiences and preferences.^{3–5} PCC can be beneficial not only for the well-being of nursing home residents,⁶ but also for nursing staff⁷ as it enables staff to deliver the care they want to provide.⁸ However, it can be challenging for nursing staff to implement PCC interventions in the high pressure environment of the nursing home.⁹ The current study investigates perceived facilitators and barriers reported by nursing staff (i.e., all staff who provide physical care to nursing home residents) for using a PCC intervention aimed at assessing and supporting well-being of nursing home residents.

The effectiveness of any intervention depends on whether the intervention is used as intended, but intervention studies often overlook the

influence of the users delivering the intervention (e.g., their motivation), and practical implementation difficulties on intervention uptake (e.g., time constraints).¹⁰ Insight into such factors can guide intervention planning and facilitate effective implementation.¹¹ Based on a systematic review of implementation studies and a Delphi study with implementation experts,¹² and pooled data on empirical studies, Fleuren et al.¹³ developed an Implementation Framework of Innovations in the health-care setting. This framework categorizes 29 determinants related to [1] the intervention itself (e.g., relevance for the resident), [2] features of the user (e.g., experiencing social support), [3] features of the organization (e.g., adequate staffing), and [4] the socio-political context (i.e., legislation and regulations).¹² Users may perceive such determinants as either hindering or facilitating intervention usage.¹⁴ A differentiation is made here between the decision or *intention* to use an intervention, and the actual usage or *implementation* of the intervention.

In recent times, researchers have begun to investigate the implementation processes of PCC interventions in the nursing home. A variety of determinants are said to be important, such as improved relationships with residents, teamwork and leadership, as well as a range of organizational factors like staffing, workload, flexibility of the organization and availability of a clear implementation plan.^{15–18} Many of these studies emphasized the effect of nursing staff attitudes towards the intervention,^{15,19} as nursing staff are often the primary change agents carrying out the intervention in their day-to-day

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routines. Thus, the current study specifically examines the perspective of nursing staff regarding potential determinants for the implementation and continued use of an intervention.

Implementation studies on PCC in the nursing home often adopt interview or focus-group methods,^{20,21} which provide valuable detailed information on determinants experienced as important facilitators or barriers. However, such qualitative methods limit the comparability of determinants regarding the degree to which each determinant is present, and the extent to which they are associated with either the intention to use or actually implement interventions. Only a few studies in the nursing home context have additionally used quantitative methods to measure the prevalence of facilitators and barriers,²² still disregarding opportunities to analyze the relationships between determinants and intervention usage as seen in other healthcare contexts (e.g., childhood obesity, child protective services, regional health services, and multidisciplinary chronic pain rehabilitation).^{23–26}

Combining qualitative and quantitative methods can provide valuable information regarding how staff experience facilitators and barriers, as well as their prevalence and relationship to PCC intervention uptake. Furthermore, nursing staff may perceive different facilitators and barriers depending on the kind of activity they have to carry out. A quantitative method enables the comparison of intervention components that require different activities. This may lead to a more specific and effective implementation plan to support nursing staff.

The new PCC intervention used in this study was aimed at promoting positive aspects of residents' mental well-being. The intervention consisted of three components. (1) In *assessment* of well-being, nursing staff observed residents for two weeks to assess their current state of happiness and engagement (being absorbed in an activity). (2) In *Planning Support* of well-being, nursing staff formulated a tailored action plan to improve the satisfaction of resident autonomy, relatedness or competence. This is based on the Self-determination theory which states that satisfaction of the basic psychological needs for autonomy, relatedness and competence leads to well-being,²⁷ all of which are relevant for older adults living in nursing homes.^{28,29} (3) *Daily Support* of well-being was also based on the Self-determination theory, in which nursing staff made

small behavior changes during daily contact moments to support the basic psychological needs of their residents.

This study employs a mixed methods approach to investigate perceived facilitators and barriers to the use and implementation of a PCC intervention using the Implementation Framework of Innovations in the healthcare setting. The qualitative information will be used to explore the importance of determinants and the quantitative information will be used to examine the prevalence of determinants. Both qualitative and quantitative information will be considered in relation to the intention to use and implement the PCC intervention. This will add to what is currently known about implementation of innovative interventions. Two explorative research questions are investigated: (1) which determinants facilitate or impede the use of a PCC intervention aimed at assessing and supporting well-being? and (2) which determinants are most important for the intention to use and implement the separate intervention components?

Materials and methods

Sample and procedure

This explorative mixed methods research design included an interview study and a longitudinal survey study. All nursing staff providing physical care to residents within 17 nursing homes of one Dutch care organization received a mandatory training in assessing and supporting resident well-being (see Fig. 1 for flowchart of participation). A description of the intervention components is presented in Table 1. The three components of the intervention were introduced in a training consisting of four two-hour interactive face-to-face meetings in groups of about 14 participants. The sessions were guided by one of three professional trainers from an education facility for nursing staff. During the kick-off meeting nursing staff participated in group discussions about their current experience with resident well-being. Each of the subsequent three meetings covered one of the three intervention components and nursing staff practiced the activities by evaluating photos and video fragments related these aspects and observing the residents in their unit.

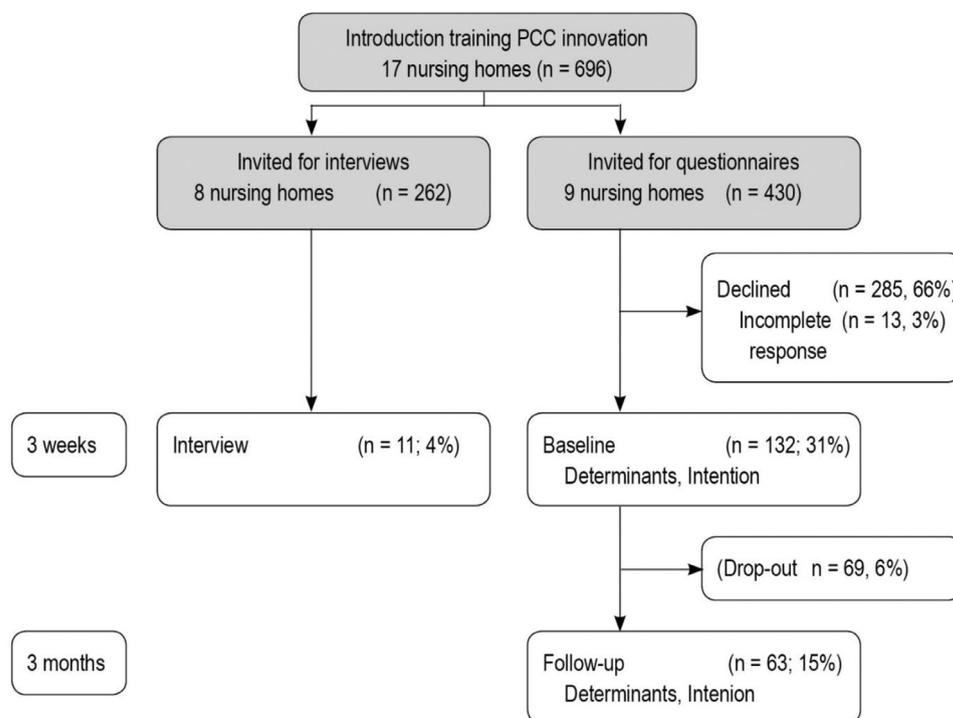


Fig. 1. Flowchart of participants in the interview study and the survey study.

Table 1
Overview of the PCC intervention components.

1. Assessment	
Goal	Facilitating documentation of resident well-being
Rationale	Resident well-being documentation is lacking (Broderick & Coffey, 2013) and may be improved through nursing staff proxy assessments of well-being
Method	1. Nursing staff observe the well-being of their residents for two weeks 2. Nursing staff then assign an assessment score of happiness and engagement for each of their residents 3. Happiness and engagement assessment scores are discussed among colleagues and documented in client reports
Tool	Two 5-point assessment scales of happiness and engagement with detailed descriptions of indicators for each score, for example: <i>Happiness 5:</i> Usually feels excellent; enjoys life to the fullest; exudes vitality; is relaxed and calm; is open to the environment and adapts easily; has self-confidence and shows resilience; feels good about themselves; is in touch with themselves <i>Engagement 5:</i> Is usually continuously very concentrated; little distractible; approachable; alert; is completely absorbed, fascinated; is highly mentally active; fully utilizing their possibilities; pushes the boundaries of their ability; enjoys exploration
2. Planning Support	
Goal	Improving resident well-being
Rationale	Satisfaction of residents' basic psychological needs of autonomy, relatedness and competence leads to well-being (Ryan & Deci 2017)
Method	Nursing staff formulate a tailored action plan for a single resident, to improve the satisfaction of their autonomy, relatedness or competence. Action plan to support resident autonomy, relatedness, or competence
Tool	Six-part structured planning form specifying targeted need, detailed action, the timing, needed assistance, responsible nurse, and evaluation date, for example: <i>The timing:</i> At what time / times during the day or week do you want the plan to be undertaken?
3. Daily Support	
Goal	Improving resident well-being
Rationale	Satisfaction of residents' basic psychological needs of autonomy, relatedness and competence leads to well-being (Ryan & Deci 2017)
Method	Nursing staff make individual behavioral changes to support resident autonomy, relatedness, or competence during daily contact moments
Tool	Three small cards specifying supportive nursing staff behaviors, for example: <i>Autonomy:</i> respecting identity; stimulating their own opinion; providing choices; flexibility in contact; creating a dialog; asking for feedback; resident is central

The studies were carried out in accordance with the Declaration of Helsinki and approved by the ethics committee of the Faculty of Behavioral, Management and Social Sciences at the University of Twente: no. 15016 and no. 17731. As we did not want to overburden the nursing staff, they were either invited to participate in the interview study, or in the survey study. Participation was voluntary and data was only included upon informed consent. Participants were assured that their answers would be treated confidentially.

Interview study

To recruit participants for the interview study, a written request was placed on a private web page of eight (of the 17) nursing homes of the care organization, employing $n = 262$ nursing staff. Eleven nursing staff (4%) volunteered to participate in the study and were sent an email containing the interview questions concerning facilitators and barriers. The individual semi-structured interviews were conducted by telephone by the first author (female postgraduate psychologist) 2–11 weeks after the last training session ($M = 4$ weeks). Participants were aware of the interviewer's involvement in intervention design and research, and were assured that both positive and critical feedback would be welcomed. The interview was conducted at a time convenient to the participant, and no relationship was established prior to the study. The interviews were audio recorded (duration 15–29 min) and transcribed verbatim.

Survey study

The 430 nursing staff of the other nine nursing homes were invited by email to participate in the survey study three weeks after the last training session. A baseline questionnaire was completed by 132 nursing staff (31%), and covered potential determinants and the intention to use the intervention. A follow-up questionnaire was completed by 63 nursing staff (15%) three months later to measure the actual implementation of the intervention.

Interview protocol

Of all semi-structured interviews that were conducted with nursing staff, half covered *Assessment* of well-being ($n = 6$) and the other half covered *Support* of well-being (both *Planning* and *Daily Support*; $n = 5$).

This method was selected to ensure collection of sufficiently rich information on each topic with relatively short interviews. Assignment to one of these topics was at random. However, if participants discussed other parts of the intervention this was not excluded from the analysis. The interview started with general implementation questions (e.g., 'Do you want to implement/what is holding you back from implementing [the activity]?'). The other questions regarded the core elements of the Measurement Instrument for Determinants of Interventions,³⁰ namely: the Intervention (e.g., 'What are positive points/points of improvement of [the activity]?'), the User (e.g., 'What do you need from colleagues to start working with [the activity]?'), and the Organization (e.g., 'What do you need from the organization to start working with [the activity]?').

Survey measurements

Dependent variables

Intention to use the intervention, and actual implementation were included as dependent variables.

Intention to use the intervention at baseline was measured with three items, one for each activity (i.e., Assessment; Planning Support and Daily Support of well-being), with answer options reported on a scale ranging 1 *completely disagree* to 5 *completely agree*. An example item is: 'I intend to use the happiness and engagement assessment form in the coming period'.

Actual implementation at follow-up was also measured with three items, one for each activity (i.e., Assessment; Planning Support and Daily Support of well-being). An example item is: 'In the past four weeks, I used the happiness and engagement assessment form', with answer options reported on a scale ranging 0 for no resident to 7 for every resident.

Determinants of intention and implementation

Availability of critical determinants that may affect the intention to use and implement the intervention was measured based on the Measurement Instrument for Determinants of Innovations (MIDI),³⁰ The 17 most relevant potential determinants for the current intervention were selected by nine experts who were involved in designing and implementing the method (i.e., four research psychologists, two teachers, two directors and an educational expert of the

participating care organization). Survey participants were informed at the top of each questionnaire page that the determinants covered the entire intervention (i.e., assessments of resident well-being, planning of well-being support, and behavioral changes to support resident well-being) and the wording of some items was adapted to fit the current intervention (see Supplementary Data for exact wording of questionnaire items).

Most determinants were measured using single items on a scale ranging 1 *completely disagree* to 5 *completely agree*. Seven determinants were related to the *Intervention* (Table 4). Nine determinants were related to the *User* (Table 5), of which three measured the *ability to implement* the intervention components, and three measured *personal drawbacks*. The personal benefit of experiencing *more meaningful work* was measured using four items (α 0.92). Finally, five determinants were measured in relation to the *Organization* (Table 6), of which two (i.e., *implementation coordinator* and *unstable context*) were measured with *yes* and *no* answer options.

Additional variables

Demographic information and work-related information was gathered at baseline. In addition, staffs' level of attention for supporting well-being was measured on a percentage Visual Analogue Scale, asking 'During your daily work, what percentage of the time do you think you are concerned with [(1) happiness and engagement/(2) the three basic psychological needs] of the residents?'.

Analyses

Quantitative data were analyzed with IBM SPSS 24. All tests were two-tailed and the alpha level was set to 0.05. For the survey, only data from participants who completed the entire questionnaire were included, omitting baseline data of 13 participants from analyses. Differences between drop-outs and completers at follow-up in demographic variables and baseline intention to use the intervention were analyzed using χ^2 tests and logistic regression analyses.

The interview data were analyzed using Atlas.ti 8.0. Based on a first analysis of all interviews an initial code scheme was created deductively by the first and second authors using the core elements of the MIDI determinant list (i.e., Intervention, User, Organization).¹³ Secondly, subcategories were created inductively through independent coding by the first and second authors, which were discussed until a consensus was reached. Finally, these subcategories received MIDI determinant labels when applicable. All interviews were then reanalyzed using the final code scheme.

The interview and survey data were analyzed concurrently. To investigate which determinants facilitated or impeded the use of this PCC intervention (research question 1), we combined information on determinant importance, prevalence, and the relationship to intention/implementation. First, we considered determinants to be important when they were discussed in the interviews. Second, we considered determinants to be present when a majority of $\geq 60\%$ of survey participants responded 'agree/ totally agree', and determinants to be absent when $\geq 40\%$ of survey participants responded totally 'disagree/disagree'. These cut-offs are comparable, albeit slightly more lenient, to the methods used by Verberne and colleagues.³¹ Third, we considered the significance of the Pearson correlations of the determinants with baseline intention to use the intervention and actual implementation at follow-up. Correlations were calculated for each activity separately, with correlations of $r \leq 0.29$ interpreted as weak, $r \leq 0.49$ as moderate, and $r \geq .50$ as strong.³² In the current study, *facilitators* are those determinants that were important, present, and significantly positively related to outcome measures. *Barriers* are those determinants that were either important, present, and significantly negatively related to outcome measures, or important, absent and significantly positively related to outcome measures (although technically this can also be considered absence of a facilitator).

To establish the most important determinants for the intention to use and implement the intervention components (research question 2), we investigated the unique relationship between determinants and both intention and implementation. Six multiple regression analyses were conducted on the survey data for intention and for implementation of each of the three components separately, including only determinants that were significantly correlated to the relevant outcome measure in the previous analyses for the first research question.

Results

Participants and drop-out

Characteristics of participants in both the interview study and the survey study are presented in Table 2.

Interview study

A total of 11 professional nursing staff participated in the interviews, reporting a mean age of 42.5 years (range 22–58 years). All participants identified as female. Seven of the participants worked as licensed practical nurses, four worked as registered nurses, and all worked 17–40 h per week. On average, the participants had 13.3 years of experience (range 2–33 years) working in a nursing home, and were employed in four different nursing homes, although most participants ($n = 6$) worked in the same nursing home.

Survey study

The 132 participants (31%) who completed the baseline questionnaire had a mean age of 47.5 years ($SD = 10.7$). On average, they reported 19.6 years of experience ($SD = 10.6$) working in nursing homes. A total of 122 participants identified as female, 112 worked as licensed practical nurses, and all but one worked 9–40 h per week. At baseline, participants estimated they spent a large percentage of worktime on happiness and engagement, and on the basic psychological needs. A total of 63 participants (48% of baseline sample) completed the follow-up questionnaire. Follow-up completers did not differ significantly from drop-outs on any of the demographic variables or baseline intention to use the intervention (not in Table).

Table 2

Characteristics of participants in the questionnaire study and the interview study.

	Interview sample ($n = 11$)	Survey sample	
		Baseline ($n = 132$)	Follow-up ($n = 63$)
Age, M (SD)	42.5 (12.6)	47.5 (10.7)	49.1 (9.5)
Gender, n (%)			
Female	11 (100)	122 (92)	58 (92)
Male	0	10 (8)	5 (8)
Work experience, M (SD)	13.3 (9.6)	19.6 (10.6)	21.4 (10.6)
Caregiver function, n (%)			
Registered nurse	4 (36)	15 (11)	7 (11)
Licensed practical nurse	7 (64)	112 (85)	53 (84)
Nurse assistant	0	2 (2)	1 (2)
Student	0	2 (2)	2 (3)
Unknown	0	1 (1)	0
Hours working per week, n (%)			
>40	0	1 (1)	0
33–40	2 (18)	11 (8)	6 (10)
25–32	5 (46)	38 (29)	15 (24)
17–24	4 (36)	66 (50)	34 (54)
9–16	0	15 (11)	7 (11)
1–8	0	0	0
0	0	1 (1)	1 (2)
% of work time spend on			
Happiness and engagement	–	77.0 (19.0)	77.3 (17.7)
M (SD)			
Basic psychological needs	–	73.3 (22.5)	72.6 (22.6)
M (SD)			

Intention to use the intervention and actual implementation

Interview study

Six interviewees specifically discussed their intention to use the intervention. Two of them intended to use the intervention, two did not, and two were not sure. All interviewees discussed the actual implementation of the intervention, of whom only three stated they had continued to use the intervention after the training ended.

Survey study

At baseline, only about a third of survey participants intended to implement Assessment of well-being and Planning Support of well-being, while a majority of participants intended to use Daily Support of well-being (see Table 3). At follow-up, most nursing staff had not used Assessment of well-being or Planning Support of well-being in their everyday care of residents. However, most nursing staff used Daily Support of well-being for at least half of the residents in their care. Intention to use the intervention was related to implementation only for Daily Support of well-being.

Facilitators and barriers for using the intervention

Below, we discuss the determinants related to the intervention, the user and the organization. The facilitators and barriers are described in terms of importance, prevalence, and relation to intention/ implementation of the intervention.

Determinants related to the intervention

Table 4 shows the interview and survey results for determinants regarding the intervention.

Importance. The interviews showed three main themes of important determinants related to the intervention: compatibility, effectiveness and ease of use. The intervention was described as *compatible* to the participants' work context and complemented other approaches that were used to promote well-being (e.g., using life history information), although it required additional work and interviewees generally disliked the extra paperwork. The intervention was especially relevant for new residents, or in the case of well-being problems, although stimulating residents was not always desirable for people with dementia.

M207: "I think it fits well in our unit. We are already focusing on happiness and engagement of residents and to ensure that this is as optimal as possible. I think it fits well in our unit."

Table 3

Survey data of baseline usage intention and actual implementation at follow-up of the three activities.

	Assessment	Plan support	Daily support
Baseline intention			
Scale	1–5	1–5	1–5
M (SD)	3.2 (0.8)	3.2 (0.7)	3.7 (0.8)
Agree/Totally Agree (%)	37	36	68
Neutral (%)	47	52	25
Totally disagree/disagree (%)	16	12	7
Follow-up Implementation			
Scale	0–7	0–7	0–7
M (SD)	1.5 (1.1)	1.6 (1.3)	4.8 (2.6)
(Almost) all residents (%)	–	2	33
About half/ majority (%)	3	2	27
A few/ minority (%)	14	14	14
No/ one resident (%)	81	83	25
Correlation			
Intention*Implementation (r)	.14	–0.14	.30*

* p < .05.

Table 4

Determinants related to the intervention: interview codes (n = 11), and survey study means, SDs, frequencies, and Pearson correlations with intention (n = 132) and actual implementation (n = 63).

Interview codes	Survey determinants	(totally)						Assessment		Planning support		Daily Support		Conclusion
		M (SD)	Disagree (%)	Agree (%)	Intention (r)	Implementation (r)	Intention (r)	Implementation (r)	Intention (r)	Implementation (r)	Intention (r)	Implementation (r)		
Compatibility	is compatible with working method	3.6 (0.6)	2	62	.23**	.07	.27**	–0.02	.35**	.22	.35**	–	Facilitator	
	is relevant for client	3.6 (0.6)	3	59	.19*	.05	.11	–0.13	.22*	.35**	–	–	–	
Effectiveness	has observable resident outcomes	3.1 (0.7)	16	29	.27**	.09	.22*	–0.11	.23**	.23	.23**	–	–	
	improves resident satisfaction	3.4 (0.7)	7	43	.09	–0.01	.17	–0.20	.23**	.09	.23**	–	–	
Ease of use	improves resident well-being	3.2 (0.6)	5	26	.29**	.24	.30**	.06	.25**	.08	.25**	–	–	
	consists of clear procedures	3.5 (0.7)	8	56	.16	.01	.25**	–0.24	.25**	.11	.25**	–	–	
	is too complex	2.8 (0.9)	37	23	–0.20*	.18	–0.20*	.18	–0.23**	–0.29*	–0.23**	–	–	

Note: Scale of 1–5, % neither agree nor disagree not included in the table.

* p < .05, ** p < .01.

Regarding *effectiveness*, all but one interviewee discussed already focusing on resident well-being, or that the intervention was too similar to existing methods. However, everyone agreed that the intervention was effective for improving systematic well-being observations, and for gaining more insight in supporting residents' needs and well-being.

M210: "With this, you can very well draw a conclusion about how a resident feels and what you can do."

Finally, the intervention was described as clear and *easy to use*. However, several interviewees struggled with deciding where to report results in the client reports, and indicated they would prefer a digitalized form for *Assessing well-being*.

M208: "Well exactly how you put that, under what heading, how you should place that. [...] yes well, you have autonomy and participation and mental well-being. Hey then you go look a bit like well I'll put it under there. But is that the right place where you mention something?"

Prevalence. More than 60% of survey participants agreed that the intervention was *compatible* with their current daily work (Table 4), and 59% of participants agreed that the intervention was *relevant for residents*. Participants were somewhat more neutral regarding the *observability of resident outcomes*, and the probability of the intervention leading to *improved well-being*, or to *satisfied residents*. While 56% of participants indicated that the intervention consisted of *clear procedures*, they were divided in their opinion of the *complexity* of the intervention.

Relationship. *Compatibility* was weakly to moderately positively related to baseline intention to use all three intervention components. All other determinants were weakly to moderately related to baseline intention to use one or more intervention components, and two determinants (i.e., *relevance for client* and *complexity*) were related to actual implementation at follow-up of one component (i.e., Daily Support).

Facilitators and barriers. All things considered, *compatibility with working method* was a facilitator for using the intervention.

Determinants related to the user

Table 5 shows the interview and survey results of user-related determinants

Importance. The interviews showed two themes of determinants related to the user: the importance of the team, and possible users of the intervention. The importance of the *team* (consisting of nursing staff that work together in a nursing home unit of about 10 residents) was described in two ways. Firstly participants outlined that a collective team decision was needed before using the intervention, and secondly, that team support and team discussions of resident well-being were required for accurate implementation.

M204: "Yes, well, of course that everyone supports it. That you don't, yes, that you start doing it together, such a project."

The intervention was described as especially relevant for new colleagues, but nursing staff also described themselves and case managers as *possible users*, stating that improving resident well-being is an important *professional obligation* for nursing staff, but not their main task. Providing physical care or other daily tasks were sometimes prioritized, and activity supervisors or welfare employees (who do not provide physical care, but supervise older adults with daily creative

Table 5 Determinants related to the user: interview codes (n = 11), and survey study means, SDs, frequencies, and Pearson correlations with intention (n = 132) and actual implementation (n = 63).

Interview codes	Survey determinants		(totally)		Assessment		Planning support		Daily Support		Conclusion
	M (SD)	Disagree (%)	Agree (%)	Intention (r)	Implementation (r)	Intention (r)	Implementation (r)	Intention (r)	Implementation (r)		
Team	3.6 (0.7)	5	62	.12	.16	.12	-0.07	.15	.32*	.15	Facilitator
Possible user	3.8 (0.7)	4	72	-0.09	.04	.06	-0.26*	.15	.30*	.15	Facilitator and barrier
Nursing staff: ...											
experience support from colleagues	3.2 (0.8)	16	36	.31**	.16	.25**	-0.03	.11	.24	.11	-
have necessary knowledge	3.2 (0.8)	15	36	.26**	.16	.25**	-0.00	.18*	.33**	.18*	-
feel able to implement activities	3.6 (0.6)	3	54	.10	.07	.04	-0.04	.14	.33**	.14	-
Assessment	3.2 (0.8)	18	39	.37**	.14	.37**	-0.00	.18*	-0.03	.18*	-
Planning Support	3.3 (0.9)	17	15	-0.21*	-0.20	-0.20*	.01	-0.20	-0.15	-0.20	-
Daily Support	2.7 (0.9)	40	21	-0.27**	-0.04	-0.34**	-0.03	-0.38**	-0.14	-0.38**	-
experience more meaningful work	2.8 (0.8)	34	44	-0.21**	.04	-0.14	.01	-0.10	-0.27*	-0.10	-
experience personal drawbacks											
takes too much time											
takes too much energy											
less time for physical care											

Note: Scale of all determinants = 1–5; % neither agree nor disagree not included in the table.
 * p < .05.
 ** p < .01.

or physical activities) were appointed as better able to take action to improve well-being.

M201: “Yes, because I am busy with yes, I would say the [physical] care. The other things, the daily stuff.”

Prevalence. More than 60% of participants experienced *social support from colleagues* when needed, and indicated they had the *knowledge* to implement the intervention (Table 5). Participants felt most *able* to implement Daily Support of well-being, compared to the other intervention components. Overall, the participants were undecided about *experiencing more meaningful work*, as well as about the experienced *personal drawbacks* that the intervention takes too much time, costs too much energy and distracts them from physical care.

Relationship. Having the necessary *knowledge* was negatively related to implementation of one component (i.e., Planning Support), and positively related to implementation of another (i.e., Daily Support). Almost all other determinants, including *experiencing support from colleagues* were weakly to moderately related to baseline intention to use one or more intervention components, or to actual implementation of one component (i.e., Daily Support).

Facilitators and barriers. All things considered, *experiencing support from colleagues* (in particular, the importance of teamwork) was a user-related facilitator of using the intervention, while having the necessary *Knowledge* (in particular, relevance for new colleagues) had an ambiguous position as both a user-related barrier (for Planning Support) and facilitator (for Daily Support).

Determinants related to the organization

Table 6 shows the results of the interviews and the surveys of the determinants related to the organization.

Importance. The interviews revealed three important themes regarding determinants related to the organization: time, implementation planning, and training. Not receiving the necessary *time* to pay close attention to residents and improve their well-being was discussed as being frustrating, and as the most important barrier to implementing the intervention. It was unclear to interviewees how much time would be provided for this in the future due to organizational restructure.

M210: “But in this regard there is sometimes not enough time, so little time. That that is not always feasible and that such a form is very nice and you try it too, but it is not always feasible. And sometimes that does not feel right at all, really.”

Interviewees described that the *implementation process* required some additional planning. Other care-related activities (e.g., providing physical care) received priority over the intervention, so interviewees indicated that the intervention should be specifically prioritized and practiced more. Several options for daily implementation planning were proposed, for example by staying behind after shifts, and assessing well-being three times a week. Continued implementation required more reminders, evaluation and continued education.

M209: “Yes of course one day you work less with it than the other. Because, for example, there are other priorities that day.”

Finally, concerning the *training* to introduce participants to the intervention, interviewees preferred “training on the job”, and disliked that other trainings were simultaneously planned. While one interviewee thought the training was not essential for implementing

Table 6 Determinants related to the organization: interview codes (n = 11), and survey study means, SDs, frequencies, and Pearson correlations with intention (n = 132) and actual implementation (n = 63).

Interview codes	Survey determinants	M (SD)	(totally)		Assessment		Planning support		Daily support		Conclusion
			Disagree (%)	Agree (%)	Intention (r)	Implementation (r)	Intention (r)	Implementation (r)	Intention (r)	Implementation (r)	
Time	The organization provides ...	2.7 (0.9)	43	17	.16	.33**	.27**	.06	.08	-.03	Barrier
	enough time	2.4 (0.8)	56	8	.17	.07	.29**	-.010	.15	.11	-
Implementation planning	adequate staffing	2.6 (1.0)	46	20	.26**	.42**	.27**	.03	.13	.07	Barrier
	clear implementation plan	0.8 (0.4)	16	84	.02	-.037**	.06	-.016	.09	.13	Barrier
	an unstable context ¹	0.5 (0.5)	54	46	-.007	.04	.11	-.012	.10	.23	-
Training	an implementation coordinator ¹										

¹Measured with dichotomous answer-options yes/no. Scale of all other determinants = 1–5.

% neither agree nor disagree not included in the table.

* p < .05.

** p < .01.

the activities, they described that the training content was useful and informative, especially concerning the discussions with colleagues from other nursing homes.

M210: “[. . .] and also the experiences of other colleagues in other locations. [. . .] Yes, and that you think gosh, that it never occurred to me before. And then you try that in practice and then it sometimes seems to work.”

Prevalence. More than 40% of survey participants reported that there was not *enough time* available, and responded negatively in relation to *adequate staffing* and having a *clear implementation plan*. Further, participants outlined that they were not aware of a *coordinator* who was responsible for implementation of the intervention in their nursing home. Finally, over 60% of participants indicated that the *organization* was in the middle of an organizational restructure.

Relationship. Both *time* and a *clear implementation plan* were weakly positively related to baseline intention to use one or two of the intervention components (i.e., Assessment, Plan Support), and moderately positively related to actual implementation of one component (i.e., Assessment). The *unstable context* was moderately negatively related to actual implementation of that same component (i.e., Assessment). Finally, the other determinants were related to intention of one intervention component, or not related to any of the outcome measures.

Facilitators and barriers. Not having enough *time*, missing a *clear implementation plan*, and an *unstable context* (in particular, restructuring and simultaneous trainings) were organization-related barriers for using the intervention.

Unique relationship of determinants and intervention components

Assessing well-being

The previous analyses showed twelve determinants were significantly related to the *intention* to use well-being Assessments. When combined in one multiple regression analysis, only *experiencing more meaningful work* ($\beta = 0.39, p = .003$) was uniquely related to intention, explaining 25% of variance.

Combining the three determinants that were significantly related to the *actual implementation*, showed that only a *clear implementation plan* ($\beta = 0.28, p = .04$) and an *unstable context* ($\beta = -0.28, p = .02$) explained 25% of the variance in implementation of the activity of well-being Assessment.

Planning support

Combining the thirteen determinants that were significantly related to the *intention* to use Planning Support, showed that only *experiencing more meaningful work* ($\beta = 0.31, p = .01$) and the *drawback of taking too much energy* ($\beta = -0.25, p = .02$), were uniquely related, explaining 29% of variance.

Knowledge was the only determinant related to the *actual implementation* of Planning Support, explaining 7% of variance.

Daily support

Of the ten determinants that were significantly related to the *intention* to use Daily Support, only *compatibility* ($\beta = 0.25, p = .02$) and the *drawback of taking too much energy* ($\beta = -0.26, p = .008$) were uniquely related, explaining 22% of variance.

Finally, when combining all seven determinants that were related to the *actual implementation* of Daily Support of well-being, *collegial support* was the only unique significant predictor ($\beta = 0.27, p = .03$), explaining 28% of implementation variance.

Discussion

This study investigated perceived facilitators and barriers reported by nursing staff in relation to using a PCC intervention to assess and support nursing home resident well-being. Combining information on determinant importance, prevalence, and the relationship with intervention usage showed three facilitators related to the intervention (*compatibility with working method*) and to the user (*support from colleagues; knowledge*). Four barriers were identified related to the user (*knowledge*) and the organization (not enough *time*, missing a *clear implementation plan*, *unstable context*). When examining unique relationships of determinants to baseline intention to use the intervention and follow-up implementation, the facilitators and barriers seem to differ considerably depending on intervention component and outcome measure. Below, we discuss in greater depth the most important determinants, namely, those that were revealed as being both a facilitator and barrier, as well as determinants that were identified to have a unique relationship to one of the three intervention components.

The first PCC intervention component used in this study consisted of nurse assessment of resident well-being using two 5-point scales of happiness and engagement. The results showed that missing a *clear implementation plan* and having an *unstable context* were the most important barriers for actual implementation of this component. Previous studies also found that nursing staff required detailed instructions regarding how to implement interventions,^{16,19} challenging the recommendation of using flexible implementation plans.³³ Others also reported the impeding effect of going through a restructure.¹⁵ Clarity within the organization thus seemed to be a prerequisite for nursing staff to implement regular well-being assessments.

Implementing the second component of the PCC intervention in which nurses completed a structured form to make a plan to support resident well-being was, somewhat surprisingly, impeded by *knowledge*. Nursing staff described the intervention as being most beneficial for staff with less experience and indicated that it was too similar to other methods. They also indicated that they were already investing a lot in resident well-being, in line with other literature.¹⁶ However, other researchers have described that healthcare professionals may say that they are practicing PCC, when they are not.²¹ Indeed, physical care was also described as being prioritized over well-being, which is a common finding in this context.¹⁵

In the third component, nursing staff made small behavioral changes during daily care moments to support resident well-being. *Compatibility with daily work* facilitated the intention to use this component, in line with a meta-analysis of qualitative research of psychosocial interventions for people with dementia.³⁴ *Support from colleagues* facilitated actual implementation of these small behavior changes, comparable to previous studies showing the facilitative effect of well-functioning teams,^{19,33} and the impeding effects of collaboration problems.¹⁵ Interviewees in our study indicated that the decision to implement an intervention was a team-endavor and outlined that entire units can exhibit PCC climate.³⁵ Therefore, it may be suitable for future studies to include team or unit-focused measurements of facilitators and barriers for similar interventions.

This study has several strengths and limitations. Combining various sources of information (i.e., importance, prevalence and relationship to intervention usage) provided a clear unified picture of facilitators and barriers. However, the exact criteria can be debated (e.g., relevance for residents was only just below the 60% criterion). The moderate correlations and limited explained variance³⁶ signify difficulty predicting nursing staff's intention and actual implementation. It is not possible to compare these results as we are unaware of other studies investigating this in the nursing home context. The limited number of interviews may not have led to saturation and the survey study did not reach the recommended number of participants,³⁶ highlighting the difficulty of recruiting nursing staff to

participate in scientific studies.³⁷ Unfortunately, we could not gather information on non-participation or drop-outs and the results should therefore be interpreted with caution. However, since the interviews were combined with the quantitative results we believe that this study still provides valuable insight into this subject. We included nursing homes in the Netherlands, which are rather advanced in their efforts towards providing PCC, which may also limit generalizability.

This is the first study to use the Measurement Instrument for Determinants of Innovations¹³ in the nursing home context. This provided suitable standardized questions for measuring determinant prevalence as well as a useful framework for analyzing the interviews. The applicability and adaptability of this instrument to the nursing home context would benefit from further evaluation. For example, training may need to be included as an additional determinant, as it was an important theme in our interview study and in previous studies.^{16,21,38} Other determinants that were not included in the current study may have also had an additional impact (e.g., professional obligation which was discussed in the interviews). A group of experts systematically selected the assessed determinants, but the feasibility of including more determinants¹³ without increasing participant burden should be investigated. Determinants were only measured at baseline, so possible changes in experienced facilitators and barriers over time were not accounted for. Finally, determinant items did not differentiate between the three intervention components, however, different relationships were still found to the intention to use and implement the three components.

Nursing staff were more inclined to make behavioral changes as opposed to using forms for the assessment, planning and support of well-being. Utilization of documentation may improve with continued experience³⁹ or integration in electronic client reports¹¹ as requested by the participants in this study. However, there is also something to be said for capitalizing on the natural interests of nursing staff. The current intervention was created in close collaboration between the university researchers and the care organization; nevertheless, integrating the perspective of nursing staff in all stages of intervention development and implementation could improve the implementation plan and implementation rates,^{22,40} resulting in an intervention that is person-centered towards both residents and nursing staff.^{8,41}

Conclusions

All in all, our results highlighted the general difficulty of implementing a PCC intervention in the nursing home,^{8,34} with staff reporting limited intention to use or implement the intervention. This underlines the importance of investigating perceived facilitators and barriers from the perspective of the people who use these interventions in practice. This study demonstrates the importance of designing an implementation plan that takes into account the specific PCC intervention component (i.e., assessments, planning, or behavioral changes). Implementation research in the nursing home does not often isolate these specific areas due to limitations surrounding the qualitative methods that are primarily used to explore such experiences.^{42,43} Therefore, including a quantitative element has added further insight into the process behind the success or failure of the implementation of interventions in this setting.

Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:[10.1016/j.gerinurse.2020.04.018](https://doi.org/10.1016/j.gerinurse.2020.04.018).

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