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Improving shared decision-making in advance care planning: Implementation of a cluster randomized staff intervention in dementia care

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ABSTRACT

Objective: Increasing staff engagement level of shared decision-making in advance care planning for persons with dementia in nursing homes. Perceived importance, competence and frequency of staff members applying shared decision-making were measured. Additionally, facilitators and barriers in the implementation process were described.

Methods: In this pretest-posttest cluster randomized trial, 311 staff members from 65 Belgian nursing home wards participated. Key components of the intervention were knowledge on shared decision-making, role-play exercises and internal policies on advance care planning. Audio recordings of advance care planning conversations between residents, families and staff were compared before and after the intervention. Participants filled in questionnaires and provided feedback.

Results: Wards demonstrated a higher level of shared decision-making after the intervention ($p < 0.001$) while time spent on the conversations did not increase. This effect persisted at 6 months follow-up ($p < 0.001$). Participants perceived shared decision-making as more important ($p = 0.031$) and felt more competent ($p = 0.010$), though frequency of use did not change ($p = 0.201$). High staff turnover and difficult co-operation with GP's were barriers.

Conclusion: Nursing home staff benefits from this training in shared decision-making.

Practice implications: Learning shared decision-making in advance care planning for persons with dementia is possible and sustainable in the time-constricted context of nursing homes.

1. Introduction

The European Association for Palliative Care defines advance care planning (ACP) as a process which "enables individuals to define goals and preferences for future medical treatment and care, to discuss these goals and preferences with family and healthcare providers, and to record and review these preferences if appropriate" [1]. Since dementia gradually limits decision-making abilities, it is important to discuss goals and preferences at an early stage [2]. Several key events in the life of the person with dementia can act as triggers to engage in ACP. One such event is the transition to a nursing home [3–6]. A 2014 study by Vandervoort et al. [7], however, demonstrates that only 11.8 % of persons with dementia in Belgian nursing homes discussed their preferred end-of-life care.

End-of-life care decisions are rarely patient driven [8]. In recent years, the concept of shared decision-making (SDM) emerged to counter this trend [9,10]. Scholl et al. [11] define SDM as an approach where clinicians and patients communicate together using the best available evidence when faced with the task of making decisions [12]. Involving persons with dementia and their family members in the decision-making process yields several benefits, including an increased sense of worth and an improved quality of life [13–15]. Healthcare professionals report benefits in utilizing SDM as well, stating greater job satisfaction after the ACP conversation and a better understanding of the resident's life. [16,17]. Nevertheless, multiple barriers remain for a successful implementation of SDM in ACP conversations due to the complex interaction between resident and provider characteristics at both

Abbreviations: ACP, advance care planning; SDM, shared decision-making; GP, general practitioner.

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the clinical and the organizational level [18]. Health professionals indicate a lack of familiarity with SDM and a lack of self-efficacy in conducting ACP conversations [19]. Residents are often hesitant to initiate ACP discussions as well, instead relying on the initiative of the health professional. A lack of resident's knowledge on the topic of ACP and an unwillingness to discuss because they still feel healthy are indicated as reasons [20].

Meanwhile, at the organizational level, a sustainable implementation of ACP can be hindered or facilitated by (a lack of) guidance from policy and a reluctance from nursing home managers to encourage conversations [21,22]. It is because of these interactions at multiple levels that Mariani et al. [16] state that, in order to improve SDM in nursing homes, both training in communication skills for professionals and involvement of the management in the implementation process are required [22–24]. In addition, it is necessary to increase the involvement of residents with dementia and their families [25,26].

Interventions that solely teach SDM skills will most likely fail if the professionals do not perceive themselves to be competent or knowledgeable enough to engage in ACP conversations [27,28]. This applies to the perceived importance of SDM as well. Indeed, a lack of self-efficacy is one of the main barriers for health professionals to engage in SDM. Mariani et al. [16] give the example of Italian interviewees who fear that their colleagues, without being given sufficient information, will only perceive SDM as a burdensome addition to their workload. Thus, it is important that professionals consider SDM crucial for any intervention to be successful.

The intervention of 'We Decide' [We Discuss End-of-life Choices] intends to increase the level of SDM in ACP conversations as well as the perceived competencies, the importance and frequency of SDM in the context of dementia care in nursing homes [26]. First results showed that the context of the team, as well as the involvement of persons with dementia and families, could be either facilitating or hindering factors in the implementation of the training [22]. In the current study, the 'We Decide' intervention was optimized by stimulating the discussion of SDM in teams and by involving families and persons with dementia more actively in the communication. The main research questions concern the effects of the intervention on (1) the level of SDM in ACP for persons with dementia in nursing homes, (2) the perceived importance, competence and frequency of staff members concerning SDM and (3) the facilitating and hindering context elements for the sustainability of the training results. For a more comprehensive elaboration on the design, intervention, materials, implementation, data collection and analysis, we refer to the study protocol [29].

2. Methods

2.1. Design

'We DECide optimized' encompassed a cluster randomized controlled design with clusters at ward level. Since our intervention targeted both the clinical and organizational level, and organizational factors might influence outcomes at the clinical level, we preferred a clustered approach to the randomization of individual health professionals. Like 'We DECide', 'We DECide optimized' was based on the three-talk model for SDM by Glyn Elwyn and colleagues [30]. The latter model was created in order to assist patients in making (medical) choices and was guided by complex intervention and implementation theories on patient autonomy, self-determination and the concepts of equipoise and deliberation [26,31–34]. It provides three steps to SDM: creating insight into the availability of multiple options (Choice Talk), providing information on these options (Option Talk) and discussing preferences while working towards a decision (Decision Talk). The intervention consisted of 2 workshops of 4 hours each, in which 3 modules were introduced, and was followed by implementation support. The two workshops were separated by one month. The modules were: (1) theoretical information on ACP and SDM, (2) role play exercises and (3) reviewing the internal ACP policy. A homework assignment between sessions let the participants practice the three-talk model during daily conversations with residents with dementia and their family members (see Fig. 1).

2.2. Outcomes

The primary outcome was the level of SDM during formal ACP conversations. Audio recordings of conversations between residents, families and staff were compared before and after the intervention. Convergent with existing literature, we assessed whether participants perceived themselves as competent in utilizing SDM skills and considered SDM more important and more frequently used after the intervention.

Furthermore, barriers and facilitators in the long-term implementation of the intervention were realized.

2.3. Implementation support

Two experienced trainers with a background in palliative care and education conducted the training sessions. At the organizational level, nursing home management committed to implement the intervention by participating themselves and by being prepared to review and update their internal ACP policies. Additionally, by inviting professionals from all backgrounds to participate in the training, we ensured the intervention received broad support at the clinical level. Finally, telephone interviews at 3 and 9 months after the last training session assessed the long-term implementation of the intervention and assisted nursing wards in updating their ACP goals for the future. To assure all wards gained the same benefits of participating, wards in the control group received training after all measurements were conducted.

The intervention provided supporting materials to all participants in order to facilitate the assimilation of the model. These included a postcard listing 12 pointers to increase SDM in ACP

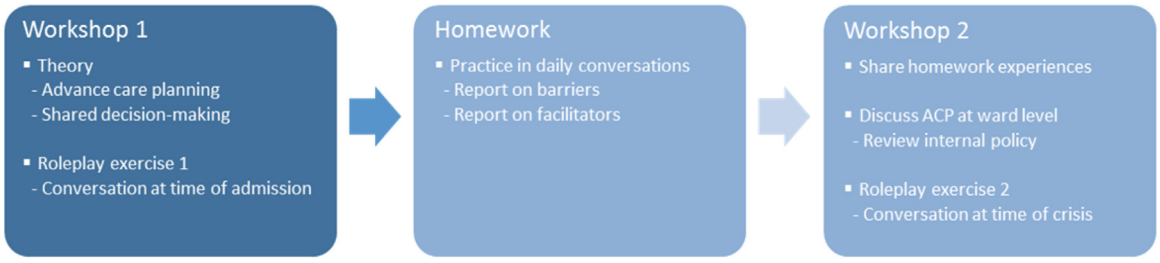


Fig. 1. Training modules.

conversations, a page long document listing 10 recommendations to achieve person-centered care at ward level, and the PowerPoint presentation used during the workshops. Finally, an information campaign titled "Shared decision-making. Your choice, our care." informed residents and families of ACP and of why SDM is important. Pocket cards, stipulating three possible questions to ask health professionals, and posters, inviting all stakeholders to participate in SDM, accompanied the campaign.

2.4. Data collection

2.4.1. Characteristics of the participants

Participants provided their age, gender, educational level, profession, job tenure and if they received any previous training on SDM. The training intentionally included all types of staff since they are all involved in the care. This means that all of them can have communications about end of life, or preferences for future care, since they live with the person with dementia 24/7 and not just at the time of one formal conversation on ACP.

2.4.2. Level of SDM in ACP conversations

Wards sent in two audio files of formal ACP conversations to assess the level of SDM at the pretest stage as well as 3 and 6 months after the intervention. Wards could choose which audio recordings to send in. The participating clinician who was most frequently in charge of conducting ACP conversations was chosen for data capture. The Dutch language version of OPTION-12 by Elwyn et al. [35,36] was used to determine the level of SDM as it is a valid and reliable instrument to observe resident and family involvement by clinicians [22,26]. The instrument lists twelve items that are based on the three categories 'Choice Talk', 'Option Talk' and 'Decision Talk' of the three-talk model [30]. These items were scored by two blinded researchers on 5-point Likert scales ranging from 'the behavior is not observed' to 'the behavior is exhibited to a very high standard'.

2.4.3. Perceived importance, frequency and competence in using SDM skills

Ampe et al. [36] developed IFC-SDM for 'We DECide'. The self-report questionnaire measures how important health professionals consider SDM to be, how frequent they use SDM skills in ACP conversations, and how competent they perceive themselves in doing so. The questionnaire is based on the three-talk model of Elwyn et al. [30] and was pilot tested in 'We DECide'. IFC-SDM comprises of nine behavioral aspects needed to engage in SDM in three situations: during time of admission, during crises and during daily conversations. Items were scored on 5-point Likert scales at pretest, 3 months after the last training session and 6 months thereafter.

2.4.4. Barriers and facilitators in the implementation of 'We DECide optimized'

Structured telephone interviews with members of management who participated in the training explored the impact of the intervention at 3 and 9 months after the last training session. We used this information to compile a list of barriers and facilitators both at the clinical and at the organizational level. Recommendations for further improvement of the intervention were collected as well. A standardized form ensured interviewers conducted the conversations in a similar manner (see Appendix A).

2.5. Sample size

311 staff members from 65 wards (46 Flemish nursing homes, Belgium) participated in the intervention. Participants included care and non-care professionals, including members of management. None of the participants were compensated or given an incentive to participate. Wards were allocated at the nursing home level to avoid contamination between teams in a single nursing home. This resulted in 31 wards in the control group and 34 wards in the intervention group. See Fig. 2 for a flow chart of the study. For a full description of the recruitment process, including the inclusion criteria, and the power estimation on which our sample size was based, we refer to the study protocol [29].

2.6. Statistical analysis

We used Linear Mixed Modelling (LMM) to analyze our longitudinal data for comparisons between the three repeated measures [37]. By incorporating both fixed and random effects, LMM allowed us to control for baseline, participant characteristics and clusters at both ward and nursing home level. Maximum likelihood estimates were used to handle missing data. Analyses were conducted in SPSS 25, with only the significant predictors being retained in the final model. Additionally, we retested the pretest-posttest results of IFC-SDM with Generalized Estimating Equation (GEE) in STATA 14.1 to check whether the categorical nature of IFC-SDM did not influence the results. This was not the case as both tests yielded the same results.

2.7. Research ethics

We received ethical approval from the social and societal ethics committee of the university. All participants of the intervention and all persons whose conversations were recorded, gave their written informed consent.

3. Results

3.1. Characteristics of the participants

Table 1 displays an overview of participant characteristics. These characteristics did not differ at baseline across groups, except for job tenure ($t = 2.316$, $P = 0.021$).

3.2. Level of SDM in ACP conversations

We received 170, 85 and 61 audio recordings at pretest, 3-months follow-up and 6-months follow-up respectively. Reasons for sending in one recording instead of the requested two were: (1) not receiving informed consent from the resident with dementia or family members, (2) absence of opportunity to discuss ACP due to no new admissions or crises, and (3) difficulties with recording the conversation. The intra-class correlation coefficients at each time point were 0.89, 0.98 and 0.99 respectively. Table 2 gives an overview of OPTION-12 scores in the control and intervention group at different time points. Both groups did not differ at baseline (Coef.=-0.867, 95 % CI=[-6.02,4.29], $P = 0.738$). The level of SDM increased significantly in the intervention group compared to the control group 3 months after the last training session when controlling for all relevant factors (see Table 3). This effect was sustained at 6-months follow-up. None of the participants' characteristics had a significant influence on the model. The cluster at nursing home level did not influence the model either.

At item level, paired sample t-tests indicated participants in the intervention group scored significantly higher on all 12 items after 6 months, excluding listing options during the conversation (see Fig. 3). Most behaviors in SDM were performed slightly above the minimum skill level (score ≥ 2), as displayed by the OPTION-12 scores 6 months after the last training session. Participants were most adept at exploring residents' expectations about how

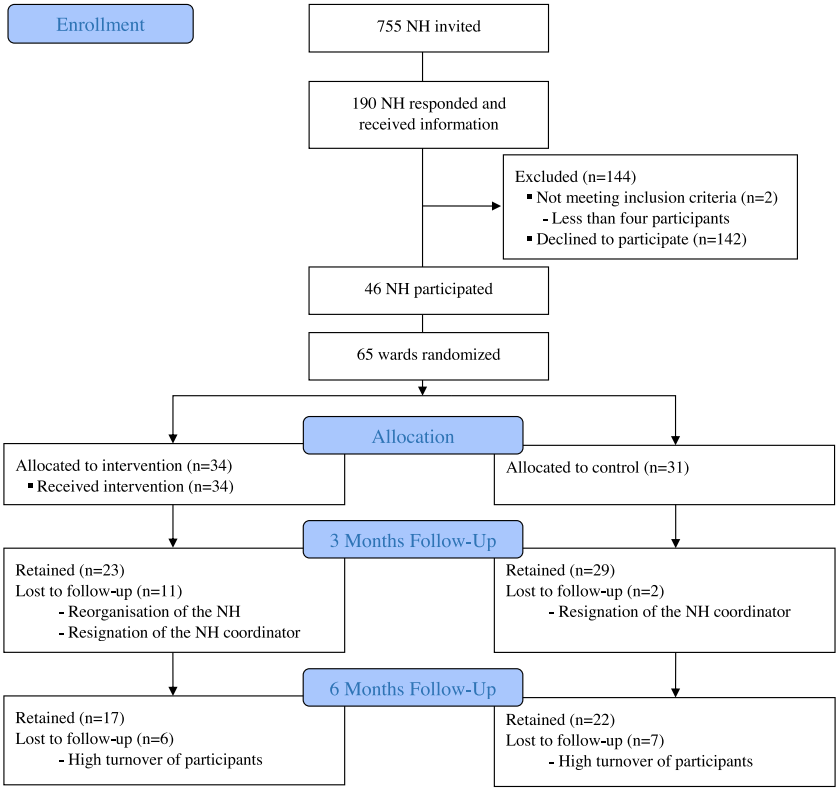


Fig. 2. Flow chart of the study.

problems were to be managed (item 6). However, four OPTION-12 items remained below the minimum skill level. Professionals rarely assessed residents' preferred approach to receiving information to assist decision-making (item 3). They also had difficulties in presenting more than one way to deal with a problem (item 2). Finally, professionals offered limited opportunities to ask questions during the ACP conversation, while disregarding the need to ask for the resident's preferred level of involvement in decision-making (items 9 and 10).

While the level of SDM increased in the intervention group, the average conversation time did not when compared to the control group and controlled for baseline conversation time (Coef. = 1.494, 95 % CI=[-2.94, 5.92], P = 0.508]). Conversations lasted 30 minutes on average (±22) at all three time points. Residents with dementia were present in 49 % (±3) of the conversations at all time points.

3.3. Perceived importance, frequency and competence in using SDM skills

280, 226 and 117 participants filled in the IFC-SDM questionnaire at pretest, 3-months follow-up and 6-months follow-up respectively. Reasons for not filling in the questionnaire were long-term illness, having left employment or having been transferred to a different ward. Table 2 gives an overview of IFC-SDM scores in the

Table 1
Characteristics of the participants in the control and intervention group.

Characteristic		Control n = 151	Intervention n = 160	Total n = 311	P value at baseline
Age (SD)	In years	40.12 (11.68)	42.06 (10.60)	41.12 (11.16)	0.127
Gender (%)	Male	19 (12.6)	20 (12.5)	39 (12.5)	0.762
	Female	132 (87.4)	140 (87.5)	272 (87.5)	
Educational level (%)	Secondary school	16 (10.6)	27 (16.9)	43 (13.8)	0.326
	College	117 (77.5)	113 (70.6)	230 (74.0)	
	University	18 (11.9)	20 (12.5)	38 (12.2)	
Profession (%)	Professionals	82 (54.3)	70 (43.8)	152 (48.9)	0.596
	- Nurse	55	30	85	
	- Nursing assistant	14	19	33	
	- Support roles	13	21	34	
	Middle management	61 (40.4)	75 (46.9)	136 (43.7)	
	- Chief nurse	35	37	72	
	- Medical director	2	3	5	
	- Specialist coordinator	24	35	59	
	Executive management	8 (5.3)	15 (9.3)	23 (7.4)	
	- Director	8	15	23	
Previous SDM training (%)	Yes	63 (41.7)	79 (49.4)	142 (45.7)	0.177
	No	88 (58.3)	81 (50.6)	169 (54.3)	
Job tenure (SD)	In years	12.77 (10.46)	15.59 (10.25)	14.13 (10.44)	0.021*

† Support roles include both allied health professions and pastoral care workers.
* $p < 0.05$.

Table 2
OPTION-12 scores and IFC-SDM scores in the control and the intervention group.

Instruments			Control		Intervention	
			x [SD]	M	x [SD]	M
OPTION-12†	Pretest (n = 170)		27.46 [11.74]	26.30	26.59 [9.36]	25.52
	After 3 months (n = 85)		24.98 [9.22]	25.00	53.49 [13.16]	54.17
	After 6 months (n = 61)		22.27 [9.33]	20.83	56.00 [11.57]	57.29
IFC-SDM‡	Pretest (n = 280)	Importance	4.50 [0.42]	4.58	4.46 [0.42]	4.52
		Frequency	3.56 [0.87]	3.78	3.45 [0.86]	3.63
		Competence	3.79 [0.48]	3.93	3.73 [0.52]	3.87
	After 3 months (n = 226)	Importance	4.49 [0.45]	4.59	4.64 [0.36]	4.67
		Frequency	3.48 [0.84]	3.67	3.67 [0.88]	3.89
		Competence	3.75 [0.38]	3.83	3.91 [0.31]	3.96
	After 6 months (n = 117)	Importance	4.56 [0.42]	4.67	4.62 [0.44]	4.78
		Frequency	3.59 [0.84]	3.76	3.75 [0.90]	4.00
		Competence	3.72 [0.46]	3.98	3.95 [0.48]	4.00

† Scores range 0–100, with a score ≥50 meaning the minimum skill level has been achieved ‡ Scores range 1–5, with a score ≥4 meaning the behavior was considered important, performed frequently or performed with perceptions of competence.

Table 3
Comparison of posttest scores controlled for baseline, participants' characteristics and cluster effects.

Instruments		After 3 months				After 6 months			
		Control	Intervention	Cluster-adjusted		Control	Intervention	Cluster-adjusted	
		x [SD]	x [SD]	Coef. [95 % IC]	P	x [SD]	x [SD]	Coef. [95 % IC]	P
OPTION-12†		24.98 [9.22]	53.49 [13.16]	28.851 [23.13, 34.58]	0.000***	22.27 [9.33]	56.00 [11.57]	34.133 [27.64, 40.62]	0.000***
IFC-SDM‡	Importance	4.49 [0.45]	4.64 [0.36]	0.120 [0.01, 0.23]	0.031*	4.56 [0.42]	4.62 [0.44]	0.063 [-0.11, 0.24]	0.458
	Frequency	3.48 [0.84]	3.67 [0.88]	0.142 [-0.08, 0.36]	0.201	3.59 [0.84]	3.75 [0.90]	0.140 [-0.22, 0.50]	0.436
	Competence	3.75 [0.38]	3.91 [0.31]	0.172 [0.04, 0.30]	0.010**	3.72 [0.46]	3.95 [0.48]	0.213 [0.01, 0.42]	0.041*

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ † Scores range 0–100, with a score ≥50 meaning the minimum skill level has been achieved ‡ Scores range 1–5, with a score ≥4 meaning the behavior was considered important, performed frequently or performed with perceptions of competence.

control and intervention group at different measuring points. Both groups did not differ at baseline for the three categories Importance (Coef.=-0.03, 95 % CI=[-0.21,0.15], P = 0.780), Frequency (Coef.=-0.117, 95 % CI=[-0.30,0.06], P = 0.201) and Competence (Coef. = 0.136, 95 % CI=[-0.02,0.30], P = 0.095). Participants in the intervention group thought SDM to be more important during ACP conversations compared to the control group 3 months after the last training session when controlling for all relevant factors (see Table 3). They also felt more competent in using SDM skills. Though SDM was still perceived as more important compared to baseline, this effect was no longer significant compared to the control group after 6 months. Perceptions of competence in using SDM skills however were. The perceived frequency with which participants used SDM skills did not differ significantly from the control group at both 3 and 6 months after the last training session. The cluster at nursing home level did not influence the model. Members of middle and executive management rated SDM as more important compared to professionals (Coef. = 0.308, 95 % CI=[0.04,0.58], P = 0.027). Participants who previously received training on SDM discussed ACP more frequently (Coef. = 0.191, 95 % CI=[0.02,0.36], P = 0.032). None of the other characteristics influenced the models. While participants initially thought SDM to be more important during crises than during daily conversations and conversations at time of admission, this difference was no longer significant after 6 months (One-way ANOVA $F(2,696) = 1.20$, $p = 0.303$; post-hoc Tukey mean difference 0.06 ± 0.04, $p = 0.274$).

3.4. Barriers and facilitators in the implementation of 'We DECide optimized'

We conducted structured interviews with 28/34 wards in the intervention group (82 % RR) three months after the last training session. 21/34 wards (62 %) responded to our call for a follow-up interview after nine months. Main reasons for loss of follow-up were the resignation of the nursing home coordinator and high turnover of participants, mostly of new employees, which hindered our attempts to contact a spokesperson. Table 4 gives an overview of the facilitators and barriers in the implementation of the intervention. When correspondents were asked what remained difficult during the ACP conversations nine months after the intervention, two specific situations were mentioned frequently: discussing euthanasia (52 %) and mediating between different opinions of family members (43 %). Both situations could be of interest to researchers for further exploration. Ideas for improving the intervention were the inclusion of video material to demonstrate how to apply the different SDM skills and adding a train-the-trainer component so nursing homes could train future employees themselves.

4. Discussion and conclusion

4.1. Discussion

4.1.1. Effects of the intervention

This study shows that We DECide optimized, an intervention based on the three-talk model of Elwyn et al. [28], increased the level of SDM in ACP conversations with nursing home residents with dementia and family members. Participants in the intervention group created more awareness to the availability of different care options (Choice Talk), provided more information on these topics (Option Talk) and guided residents and family members more towards a decision in line with their own preferences (Decision Talk). The intervention contributed to an increase in OPTION-12 scores up until six months after the last training session. Furthermore, participants in this training described themselves as more competent in using SDM skills and considered

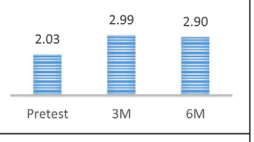
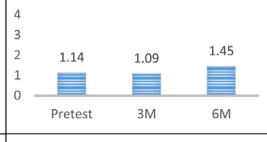
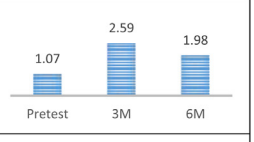
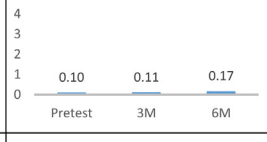
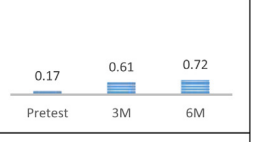
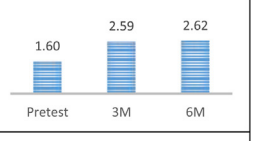
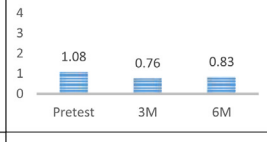
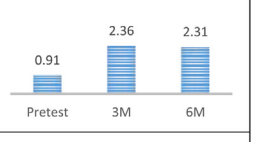
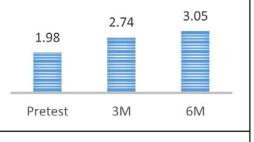
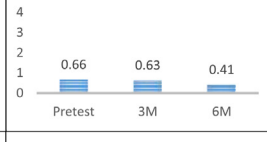
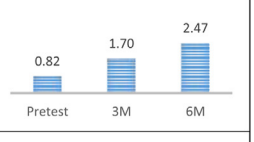
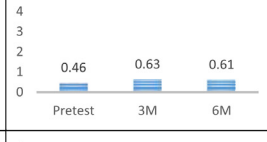
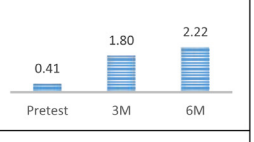
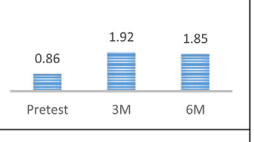
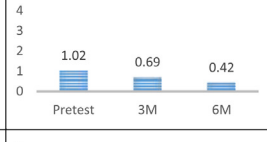
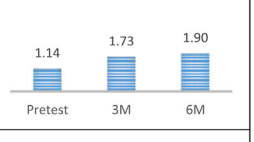
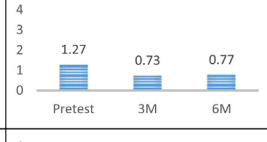
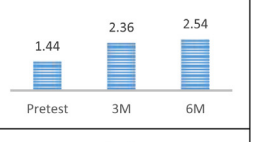
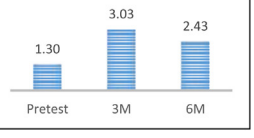
OPTION-12 Items	Control	Intervention
1. Draw attention to an identified problem as one that requires a decision-process.		
2. State that there is more than one way to deal with the identified problem.		
3. Assess the resident's preferred approach to receiving information to assist decision-making.		
4. List 'options', which can include the choice of 'no action'.		
5. Explain the pros and cons of options to the resident.		
6. Explore the resident's expectations (or ideas) about how the problem(s) are to be managed.		
7. Explore the resident's concerns (fears) about how problem(s) are to be managed.		
8. Check that the resident has understood the information.		
9. Offer the resident explicit opportunities to ask questions during the decision making process.		
10. Elicit the resident's preferred level of involvement in decision-making.		
11. Indicate the need for a decision-making (or deferring) stage.		
12. Indicate the need to review the decision (or deferment).		

Fig. 3. OPTION-12 items and item scores (range 0–4).

Table 4
Facilitators and barriers in the implementation of the intervention.

FACILITATORS	**3M N = 28**	**9M N = 21**
Supporting materials	14	10
Inclusion of members of management in the training	13	15
Role-play exercises focused on dementia	13	10
Inclusion of two nursing homes in each training group to exchange experiences	11	11
Regular contact with the research group as a reminder to engage in ACP	4	4
BARRIERS		
Staff turnover	8	11
Changes at the management level	8	3
Low number of professionals in charge of ACP conversations	7	6
Unwillingness of GP's to attend ACP conversations	6	11

SDM more important in all types of conversations, including daily talks, compared to before the training. Meanwhile, the control group considered SDM only useful during crisis despite evidence from literature [38].

Even though participation in 'We DECide optimized' increased the practice of SDM in ACP conversations, there still is room for improvement. Persons of older age rely mostly on word of mouth communication and face multiple barriers in using other means to obtain health information, such as online resources [39,40]. Teaching professionals how to provide the necessary information in a clear and concise manner, while addressing these barriers to obtain health information, will be crucial to present different care options to persons with dementia and their families. Furthermore, we noted that professionals often prefer a single care option. During the role-play exercises, a frequently heard statement was: "I know X is the best way to deal with Y." This personal bias might hinder SDM since the option is presented in a directive, undiscussable manner. Stimulating interdisciplinary meetings at ward level to discuss the benefits and disadvantage of different care options might counter this bias. Finally, our intervention could focus more on teaching participants how to provide opportunities for asking questions and assessing residents' preferred level of involvement in decision-making.

It is important to note perceived importance of SDM decreased after 6 months in contrast to the perceptions of competence, underlining the need for regular training to maintain sustainability of the intervention [17,41,42]. Furthermore, some participants indicated that the telephone calls from the researchers after three and nine months helped them remember to continue with the implementation of the intervention. This is consistent with the observation by Moore et al. [43], who indicate external facilitation is crucial in improving outcomes in nursing homes. Possibly, management staff could play an important role in this process as well by repeatedly highlighting the importance of SDM and ACP. This can be done by putting ACP on the agenda of the team meetings and by discussing and preparing the SDM process with professionals during these meetings [44,45].

Nursing home professionals are burdened with a considerable workload, with some studies indicating adverse effects of workload on quality of care [46–49]. For this reason, the sustainability of any intervention is not self-evident in the complex time-pressured environment of the nursing home [5]. 'We DECide optimized' increases the level of SDM in ACP conversations without requiring more conversation time. However, we found no contribution of the intervention to the perceived frequency with which professionals used SDM-skills. Feedback indicated organizational barriers and high turnover of staff hindered professionals from applying a whole-ward approach to ACP, limiting the number of personnel in charge of ACP conversations to one or two staff members. To address the barrier of high staff turnover, we suggest implementing the fundamentals of SDM in the quality guidelines and the directives of the nursing homes sector. This would also stimulate future incorporation of in-service training on this topic, as suggested by participants and literature [50]. Structural changes might also be required to overcome staff turnover, such as a job ladder with financial incentives for staff retention, or novel roles for ACP providers to decrease their overall workload.

Another barrier in the implementation of the training was an unwillingness of GP's to attend ACP conversations, which coincides with research on GP's attitudes and involvement in ACP [51–53]. Professionals had difficulty providing residents and family members with detailed information on care and medical choices, instead relying on GP's to supply this knowledge. When GP's were absent, they felt left on their own and unable to provide sufficient insight to residents and family members to make informed decisions. Since GP's are key figures in the health and care trajectories of persons with dementia and considering our observations, they could benefit from a training in ACP and SDM [54].

4.1.2. Strengths and limitations of the study

We consider the accessibility of 'we DECide optimized' a strength. Our results indicate the intervention is suitable for any participant regardless of their age, gender, educational level, profession, job tenure and previous training on SDM. This allows for a potential whole-ward approach to ACP, as suggested by literature [6,50]. A limitation of 'We DECide optimized' is our limited information on the similarities and the differences between participating wards and nursing homes and those in the general population. Although we included a diverse number of nursing homes in our study, varying in size and regional location, our results cannot be generalized to the whole nursing homes sector. Another limitation is the manner in which nursing homes, wards and participants were recruited. Nursing homes applied voluntarily and selected which wards and professionals would participate in the study, possibly inducing a selection bias based on motivation. However, research indicates motivation is an important key factor for implementing culture change in nursing homes and unmotivated nursing homes will not participate in such a training formula [55]. Furthermore, wards could choose which recordings to send in, limiting the interpretation of our results to 'best case' rather than normative ACP. But even with this 'best case' scenario, all wards showed plenty of room for improvement on the OPTION scale. Finally, due to attrition, our interpretation of results 6 months after the intervention is limited.

4.2. Conclusion

'We DECide optimized' is a multi-level communication training in SDM which successfully increases the practice of SDM in ACP conversations. Participants perceive SDM as more important, more realized in practice and perceive themselves as more competent in using SDM skills after the training.

4.3. Practice implications

Professionals and members of management from all backgrounds can benefit from a training in SDM. Applying SDM in ACP conversations with persons with dementia and family members is possible in the time-constricted context of the nursing home. High staff turnover and lack of co-operation with GP's remain barriers in the implementation of SDM in ACP.

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CRediT authorship contribution statement

Bart Goossens: Conceptualization, Investigation, Methodology, Formal analysis, Writing - original draft, Writing - review & editing. **Aline Sevenants:** Conceptualization, Methodology, Supervision, Writing - review & editing. **Anja Declercq:** Conceptualization, Methodology, Supervision, Writing - review & editing. **Chantal Van Audenhove:** Conceptualization, Funding Acquisition, Methodology, Project administration, Supervision, Writing - review & editing.

Declaration of Competing Interest

None declared.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.pec.2019.11.024.

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