Chapter 5

Testing the implementation of the Veder Contact Method, a theatre-based communication method in dementia care

Petra Boersma
Julia C. M. van Weert
Birgit I. Lissenberg - Witte
Berno van Meijel
Rose-Marie Drøes

A short version of this chapter is accepted for publication in The Gerontologist (August 2017)
Abstract

Background and objectives
There is a lack of research on implementation of person-centred care in nursing home care. The purpose of this study was to assess the implementation of the Veder Contact Method (VCM), a new person-centred method using theatrical, poetic and musical communication for application in 24-hour care.

Design and Methods
Caregivers \( n = 136 \) and residents \( n = 141 \) participated in a one-year quasi-experimental study. Foundation Theatre Veder implemented VCM on six experimental wards and rated implementation quality. Six control wards delivered care-as-usual. Before and after implementation, caregiver behaviour was assessed during observations using the Veder-observation-list and Quality of Caregivers’ Behaviour-list. Caregiver attitude was rated with the Approaches to Dementia Questionnaire. Quality of life, behaviour, and mood of the residents were measured with QUALIDEM, INTERACT and FACE. Residents’ care plans were examined for person-centred background information.

Results
Significant improvements in caregivers’ communicative behaviour (i.e. the ability to apply VCM and establish positive interactions) and some aspects of residents’ behaviour and quality of life (positive affect, social relations) were found on the experimental wards with a high implementation score, as compared to the experimental wards with a low implementation score, and the control wards. No significant differences were found between the groups in caregivers’ attitudes, residents’ care plans, or mood.

Implications
The positive changes in caregivers’ behaviour and residents’ well-being on the high implementation score wards confirm the partly successful VCM implementation. Distinguishing between wards with a high and low implementation score provided insight into factors which are crucial for successful implementation.
Background

Some 47.5 million people worldwide are diagnosed with dementia and this number is expected to increase to 75.6 million by 2030 (http://www.who.int/features/factfiles/dementia/en). As the illness progresses, behavioural and mood problems such as depression, agitation, anxiety, apathy, and aggression often increase (Zuidema et al., 2007). This has a negative impact on the quality of life of people with dementia.

Person-centred care

Caregivers can positively influence the mood, behaviour and well-being of people with dementia by taking into account their personal preferences, needs and lifestyle (Brooker et al., 2013). This person-centred care approach, developed by Kitwood (1997), is characterized by valuing each person with dementia and creating a positive psychosocial environment in which they experience relative well-being (Brooker & Latham, 2015). In the last decade’s different person-centred care methods, such as validation (Feil, 1992), reminiscence (Woods et al., 2005), movement activation (Dröes, 1991) and multi-sensory stimulation (Van Weert et al., 2006) have been developed, implemented, and their effects on the behaviour and quality of life of the people with dementia studied. Although many studies reported some positive effects on the behaviour, mood and quality of life of people with dementia, effect sizes are usually small and long-term implementation requires more attention (Livingston et al., 2014; Olazarán et al., 2010). These results encouraged us to perform additional implementation research.

Theoretical foundation of the Veder Contact Method

The Veder Contact Method (VCM), developed by Foundation Theatre Veder, is a new person-centred method for residential 24-hour care based on emotion-oriented care models (Finnema et al., 2000; Van der Kooij, 2003). These models build upon the dialectical framework of Kitwood (1997), and also on the Adaptation-Coping model (Dröes, 1991; Dröes et al., 2010). Kitwood (1997) explains behaviour changes in people with dementia and their sense of well-being as the result not only of brain degeneration, but of a combination of personality, life history, health, and interaction with the social environment. The Adaptation-Coping model emphasizes the importance of factors like personality, life history, health aspects, and social and material conditions for understanding the person with dementia and how they deal with the disease. One of the crucial adaptive tasks for people with dementia is to develop and maintain social relationships in order to maintain an emotional balance (Van der Roest et al., 2007). The emotion-oriented care models (Finnema et al., 2000; Van der Kooij, 2003) have in common that they focus on the person living with dementia instead of the patient with a disease (medical perspective). VCM aims to stimulate contact between the person with dementia and the caregiver, and therefore their sense of well-being, by using theatrical, poetic and musical communication in combination with elements of existing care methods, i.e. reminiscence, validation and neuro-linguistic programming (Bandler & Grinder, 1975; Feil, 1992; Woods et al., 2005). This combination is expected to achieve broader effects than the single methods separately (Van Dijk et al., 2012).
Theatrical and poetic communication
The use of theatrical communication in VCM is based on Keith Johnstone’s ideas of improvisation theatre (1987). The basic principle of improvisation theatre, ‘saying yes’, is important for people with dementia and is in line with validation (Feil, 1992), emotion-oriented care (Finnema et al., 2000; Van der Kooij, 2003) and neuro-linguistic programming (Bandler & Grinder, 1975). People with dementia feel accepted and appreciated by caregivers when they use theatrical communication (Kontos et al., 2010). Poetic communication is used as poetry can have a therapeutic effect (Leedy, 1969; Lerner, 1980; Zeilig, 2014). With poetry-therapy people understand their feelings better and are better able to communicate about their emotional needs (Leedy, 1969).

Development of the Veder Contact Method
VCM is a modification of the Veder method, in which ‘living-room theatre performances’ are given in day rooms of psychogeriatric nursing home wards, i.e. wards where people with dementia live together and receive 24-hour care generally in groups of six to 23 people. VCM and the Veder method for living-room performances intend to improve contact between the caregiver and the resident (http://www.theaterveder.nl/nl/english). As advised by caregivers and managers during focus groups and interviews in the study of Van Haeften-Van Dijk et al. (2015), VCM was specifically developed for integration in 24-hour nursing home care. In contrast with the Veder Method, caregivers do not need to set-up a complete theatre performance, they can apply VCM during daily caring tasks (e.g. during meals, personal care) (Boersma et al., 2017b).

Implementation and evaluation of the Veder Contact Method
We expected that adaptation of the Veder method into VCM would promote effective implementation of the method in daily care for people with dementia. From earlier research we know that psychosocial methods adapted for use in daily care (e.g. individualized music) tend to be more effectively implemented than psychosocial methods (e.g. integrated oriented care, family biography workshop, multi-sensory stimulation) which require additional time and resources (Boersma et al., 2015; Lawrence et al., 2012). The present study focuses on whether VCM was implemented successfully in daily nursing home care and is part of a larger study (Boersma et al., 2017b) entitled ‘The implementation of the Veder Contact Method (VCM) in daily nursing home care for people with dementia: an evaluation based on the RE-AIM framework’ (Glasgow et al., 1999). Within the framework of the current implementation study, we also conducted a process analysis to gain insight in the implementation process in the nursing homes, if VCM was implementable in daily 24-hour care and what factors facilitated and hindered the implementation of VCM (Boersma et al., 2017a). The aim of the current study was to assess the quality of the implementation of VCM on:
a) The communicative behaviour and attitude of professional caregivers.
b) The content of the care plan.
c) The behaviour, mood and quality of life for people with dementia.
In the present study we use the theoretical RE-AIM framework of Glasgow et al. (1999) to evaluate the implementation success of VCM. VCM was developed taking into account the five constructs of the RE-AIM framework that are considered important for effective and sustainable implementation (i.e. Reach, Effectiveness, Adoption, Implementation, and Maintenance). It has proved suitable for evaluating implementation of person-centred and psychosocial interventions in nursing home care (Boersma et al., 2015), and its use is comprehensively described in Boersma et al. (2017b). The research questions in the present study concern the constructs of Effectiveness, Adoption, and Implementation from the RE-AIM framework. ‘Effectiveness’ concerns the effect of VCM on the behaviour, mood and quality of life of the people with dementia; ‘adoption’ concerns caregivers’ communicative behaviour and attitude; and ‘implementation’ concerns the way caregivers use VCM in daily care (i.e. treatment fidelity) and the content of the care plan (e.g. personal information of the resident).

We hypothesized that successful implementation (Van der Kooij et al., 2013) of VCM can result in (a) better communicative behaviour and more person-centred attitudes of caregivers towards dementia; (b) increased caregiver awareness regarding the life experiences of the people with dementia, resulting in more personal information about the residents’ lifestyle, life history and preferences being included in the care plan; (c) less behavioural problems, improved mood and better quality of life of the people with dementia.

Methods

Design and settings

We conducted a quasi-experimental study with matched groups. Six wards from four nursing homes implemented VCM, six control wards from the same nursing homes provided care-as-usual (CAU). The control wards continued their care practices without implementing any new psychosocial intervention during the study period. Foundation Theatre Veder recruited wards for the VCM training program in nursing home organizations who had prior experience with the Veder method as a ‘living-room theatre performance’. However, only wards within these nursing homes who had no experience with the Veder method as a ‘living-room theatre performance’ were asked to participate in the current study. Of the twelve participating wards some caregivers on one experimental ward and one control ward (in the same nursing home) had previous experience with the Veder method as a ‘living-room theatre performance’. When an experimental ward agreed to implement VCM, a comparable ward from the same nursing home was recruited by the management of the nursing home. Matching of experimental and control wards took place on different characteristics (i.e. open or closed ward, number of residents, small-scale living or conventional ward living and familiarity with the basic principles of the Veder method). In one nursing home, no control group could be recruited; this was compensated by another nursing home with comparable characteristics (Table 2). The recruited nursing homes were located in different parts of the Netherlands. Implementation of VCM on the experimental wards lasted nine months and took place between January 2013 and October 2014. Measurements were carried out at T0 (baseline, before implementation) and T1 (nine months after the start of the implementation). Table 1 summarizes the training program and study design.
<table>
<thead>
<tr>
<th>Month</th>
<th>Experimental group (M=6)</th>
<th>Control group (M=6)</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Informed consent procedure</td>
<td>Informed consent procedure</td>
</tr>
<tr>
<td>2</td>
<td><strong>Pretest</strong>&lt;br&gt;Data collection:&lt;br&gt;• Observation residents and their caregivers&lt;br&gt;• Residents characteristics and care plan&lt;br&gt;• Caregivers characteristics&lt;br&gt;• Self-report questionnaire caregivers</td>
<td><strong>Pretest</strong>&lt;br&gt;Data collection:&lt;br&gt;• Observation residents and their caregivers&lt;br&gt;• Residents characteristics and care plan&lt;br&gt;• Caregivers characteristics&lt;br&gt;• Self-report questionnaire caregivers</td>
</tr>
<tr>
<td>3 – 9</td>
<td><strong>Implementation VCM in daily care by Foundation Theatre Veder:</strong>&lt;br&gt;• Team meeting&lt;br&gt;• Observation of caregivers with Dementia Care Mapping method (DCM)&lt;br&gt;• Feedback meeting outcomes observation DCM with caregivers and staff of the ward</td>
<td></td>
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<tr>
<td>3</td>
<td>Three monthly training sessions of three hours:&lt;br&gt;1. Functioning of long-term memory in people with dementia, reminiscing and one-on-one contact.&lt;br&gt;2. Theatrical communication (intonation &amp; acte de présence); importance of the ‘saying goodbye’ ritual.&lt;br&gt;3. Theatrical communication (poetic and musical communication); relation with the life history of residents.</td>
<td></td>
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<tr>
<td>6 – 9</td>
<td>Two three-hour follow-up training sessions:&lt;br&gt;1. Repeating the information from the first three monthly sessions and discussing the experiences of caregivers and the reactions of residents when applying VCM&lt;br&gt;2. Connection is made with the ‘authentic self’ of the caregivers &amp; exercise in how to start up a communication according VCM and related to the life history of residents as described in their care plan.</td>
<td></td>
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<tr>
<td>4 – 8</td>
<td>Coaching on the job (three hours) before the second, third and fourth training session</td>
<td></td>
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<tr>
<td>10</td>
<td>Evaluation of the implementation with caregivers and staff</td>
<td><strong>Posttest</strong>&lt;br&gt;Data collection:&lt;br&gt;• Observation of residents and their caregivers&lt;br&gt;• Analysing residents care plan&lt;br&gt;• Self-report questionnaire caregivers&lt;br&gt;• Implementation score VCM</td>
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</table>

Table 1. Summary of the study design
Participants
The sample consisted of residents with dementia and their professional caregivers. Residents were eligible if they had cognitive problems due to a type of dementia and if they were able to stay in the living-room. Based on expected moderate changes in the indicators of successful implementation (i.e. the outcomes on mood and quality of life of the residents) a power analysis demonstrated that eight wards were required, resulting in 64 residents in the experimental group and 64 residents in the control group (1-β = 0.80, α = 0.05, d = 0.6). The sample size calculation was corrected for clustering of residents within wards, assuming an average number of eight participating residents per ward and an intra-class correlation coefficient of 0.05. Given an expected loss of residents during this period of 25% (Koopmans, Ekkerink, & Van Weel, 2003), 86 people with dementia were required in both study groups. All residents from the twelve wards who met the inclusion criteria and for whom informed consent was obtained were included. During team meetings the managers of the experimental wards informed the caregivers about the implementation of VCM. The principal investigator (PB) provided oral and written information about the study to all twelve wards teams. All caregivers of the participating wards, i.e. nurses, activity therapists, nursing assistants, nursing home hostesses and permanent volunteers, were included. The caregivers were asked to sign an informed consent form, ensuring the confidentiality of the data (Dutch Trial Register, number NTR4248).

Ethical statement
Written informed consent was obtained from all legal representatives of participating residents. In a few cases the legal representative recommended asking the resident him/herself to also sign the informed consent form, which was done on the same form. One person with dementia refused to sign and was not included in the study. Moreover, before the start of each observation, observers introduced themselves to the residents sitting in the living-room, and asked them oral permission to be observed. Only residents whose legal guardians signed the consent forms were observed. The study was approved by the Medical Ethical Committee and the Scientific Committee of the EMGO Institute for Health and Care Research of the VU University Medical Centre in Amsterdam (2009/142).

Intervention
VCM seeks to foster a focused interaction and reciprocity and stimulation of joy and lightness in the contact between caregivers and residents (http://www.theaterveder.nl/nl/english downloaded at 16-08-2016). During daily caring tasks, theatrical stimuli are provided to the (sometimes depressed, agitated, anxious and/or apathetic) people with dementia inviting them to engage in social interaction. VCM follows fixed procedures in the daily contact moments between caregiver and resident: (a) greeting by one-on-one contact; (b) communication about the past (connection to long-term memory); (c) communication about the present time (connection to short-term memory), and (d) saying goodbye (Boersma et al., 2017b). By means of a multifaceted training program, caregivers were trained in applying VCM. Trainers
of Foundation Theatre Veder conducted the training and coaching program, and all caregivers of the ward participated. The training started with a team meeting, in which all caregivers of the ward (nurses, nursing assistants, therapists, hostesses and sometimes also a volunteer) and the team manager participated. Next, the communicative behaviour of the caregivers was observed using the Dementia Care Mapping method (Beavis et al., 2002). Based on these observations feedback was given to the caregivers. Subsequently, three training and two follow-up meetings of three hours each were offered. The training and follow-up program focused on knowledge improvement and skills training in practice, and reflection on the person-centred attitude. Three coaching-on-the-job sessions took place in the morning before training sessions two and three, and the first follow-up session. During these coaching-on-the-job sessions caregivers received feedback on how they applied VCM in practice. The intervention and implementation strategies are comprehensively described by Boersma et al. (2017b).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Nursing home 1 Experimental</th>
<th>Nursing home 1 Control</th>
<th>Nursing home 2 Experimental</th>
</tr>
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<tbody>
<tr>
<td>Ward 1a&amp;b</td>
<td>Ward 2a&amp;b</td>
<td>Ward 7</td>
<td>Ward 8</td>
</tr>
<tr>
<td>Number of residents</td>
<td>23+23</td>
<td>23+23</td>
<td>20</td>
</tr>
<tr>
<td>Staff-resident ratio during the day</td>
<td>1:4</td>
<td>1:4</td>
<td>1:4</td>
</tr>
<tr>
<td>Staff-resident ratio in the evening</td>
<td>1:6</td>
<td>1:6</td>
<td>1:6</td>
</tr>
<tr>
<td>Type of care-organization</td>
<td>Large closed wards</td>
<td>Large open wards</td>
<td></td>
</tr>
<tr>
<td>Caregivers familiar with VM as 'living-room theatre performance'</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 2. Characteristics of the participating experimental and control wards
*This control ward was matched with the experimental ward (4) of nursing home.

An example of applying VCM in the living-room is:

“Every evening nurse M. applies lotion to Mr. H.’s legs because they are so dry. She greets him and asks if he allows her to rub his legs. She knows in his younger years he was a good ice skater. When she starts applying the lotion to his legs, she asks him: Mr. H. how come you have such beautiful athletic legs, did you skate a lot?”
Mr. H. confirms this and starts talking about skating, and then about how nice it was to skate across the ice with his wife. When the nurse is ready applying the lotion, she asks him ‘shall we skate together here?’ And there they go: he in the front, she behind him, through the living-room. Together they imagine skating over the ice. When they are ready, she thanks him for the beautiful ride and says goodbye.”

(M. Lem, personal communication, May 23, 2017)

<table>
<thead>
<tr>
<th>Nursing home 2 Control</th>
<th>Nursing home 3 Experimental</th>
<th>Nursing home 4 Experimental</th>
<th>Nursing home 4 Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward 9</td>
<td>Ward* 10</td>
<td>Ward 4</td>
<td>Ward 5a&amp;b</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>6+6</td>
<td>6+6</td>
</tr>
<tr>
<td>1:5</td>
<td>1:5</td>
<td>1:4</td>
<td>1:4</td>
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<tr>
<td>1:8</td>
<td>1:8</td>
<td>1:6</td>
<td>1:6</td>
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<tr>
<td>Small-scale open living-rooms</td>
<td>Small-scale closed living-rooms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes, some</td>
<td>No</td>
</tr>
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</table>

**Measures and procedures**

Descriptive information was obtained for caregivers (i.e. age, gender, nationality, education, function, working experience, working hours). For residents, descriptive information included age, gender, education, years living in nursing home, years of illness, type of dementia, cognitive function, use of psychopharmacological medication.

At T0 and T1, caregivers completed two questionnaires: Approaches to Dementia Questionnaire (ADQ) and subscale ‘Working with a care plan’ of the Emotion-oriented Skills in the Interaction with elderly people with Dementia (ESID) list (Van der Kooij et al., 2013).
<table>
<thead>
<tr>
<th>Measures</th>
<th>Description</th>
<th>Validity and reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis (a)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Quality of Caregivers’ Behaviour in dementia care (Kitwood, 1997; Van Weert et al., 2006)</td>
<td>A 25-item observation instrument based on the Dialectical Framework of Kitwood (1997). QCB describes positive and negative interactions (communicative behaviour of caregivers) influencing the well-being of residents. Positive interactions are summarized as ‘Positive Person Work’ (PPW), negative interactions as ‘Malignant Social Psychology’ (MSP). Score ranges from ‘not at all’ to ‘maximally’.</td>
<td>Cronbach’s alpha of PPW was 0.93 and for MSP it was 0.87. The ICC for the subscale PPW was 0.85 and 0.71 for MSP, indicating high reliability.</td>
</tr>
<tr>
<td>Approaches to Dementia Questionnaire (Lintern et al., 2000)</td>
<td>Measures the caregivers’ attitude towards dementia, and consists of 19 items to be scored by caregivers on a five-point Likert scale, ranging from ‘totally agree’ to ‘totally disagree’. ADQ includes two attitude dimensions. The hope dimension measures the optimistic/pessimistic beliefs of the caregiver with respect to the (future) possibilities of a person with dementia. The person-centred dimension reflects the caregiver’s recognition of the person with dementia as a unique, conscious and valuable human being.</td>
<td>Cronbach’s alpha of both the hope and person-centeredness dimension was 0.65.</td>
</tr>
<tr>
<td>Implementation score</td>
<td>Foundation Theatre Veder assessed the successfulness of the implementation of VCM of the experimental wards. The higher the score, the better VCM is implemented.</td>
<td>-</td>
</tr>
<tr>
<td>Observation list ‘Veder Contact Method’ (Tol et al., 2011)</td>
<td>This list determines whether caregivers apply elements and techniques of VCM. The list was adapted for present study by assessing the extent to which elements of VCM were applied in daily dementia care, and consists of 16 items with four answer possibilities ranging from ‘not at all’ to ‘maximally’.</td>
<td>Cronbach’s alpha was 0.90. The ICC was 0.73 (range 0.55 - 0.84), indicating high reliability.</td>
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<tr>
<td><strong>Hypothesis (b):</strong> Care plan screening</td>
<td>The first author and the research assistants examined the content of the care plans of the participating residents, using a checklist to determine whether the personal preferences of the residents and information about their life history were described.</td>
<td>-</td>
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</table>
Working with a care plan (Van der Kooij et al., 2013)

A 12-item subscale of the ‘Emotion-oriented Skills in the Interaction with Elderly People with Dementia-list’ (ESID; Van der Kooij et al., 2013). Uses a five-point Likert scale, ranging from ‘not applicable’ to ‘almost always applicable’. Concerns the topics: writing observations of residents in the care plan, converting these observations into objectives and using the care plan in collaboration with colleagues.

Cronbach’s alpha was 0.85.

Hypothesis (c):

QUALIDEM (Ettema et al., 2007)

Measures quality of life of people with mild to severe dementia. It is a 37-item observational instrument with four answer categories (never, rarely, sometimes, always), and consists of nine subscales: caring relationship, positive affect, negative affect, restless/nervous behaviour, positive self, social relationships, social isolation, feeling at home and having something to do.

Cronbach’s alpha of the subscales was between 0.39 and 0.93. Mean ICC for the subscales was 0.65. The inter-observer reliability of the subscales, ‘care relation’ (0.41) and ‘feeling at home’ (0.15), was insufficient; the reliability of the other seven ranges from 0.67 - 0.86.

INTERACT (Baker et al., 2001)

Measures behaviour and interactions of residents, a 34-item observational instrument on positive and negative behaviours that measures mood, speech, interaction with others, relating to environment, need for prompting and alertness/inactivity. The behaviours are assessed on a five-point Likert scale, ranging from ‘not at all’ to ‘almost all the time’.

Mean inter-rater reliability (κ) for the items was 0.40 (range 0.23 - 0.85). Four items were excluded from the analysis because of low inter-rater reliability (κ<0.21).

Face (Whaley & Wong, 1987)

Observational instrument of the mood of residents, a three-point Likert scale (①, ②, ③).

Mean inter-rater reliability was 0.58 (95% CI, 0.32 to 0.85 post hoc).

Table 3. Description and psychometric properties of caregiver and resident measures in present study

Reliability and validity of earlier studies are comprehensively described in Boersma et al. (2017b).

At the same time, the behaviour of caregivers was observed using the Quality of Caregivers’ Behaviour in dementia care (QCB) (Van Weert et al., 2006) and the ‘Veder Contact Method-list’ (Tol et al., 2011). The behaviour of the residents was observed using the QUALIDEM (Ettema et al., 2007 a, b) and the INTERACT (Baker et al., 2001). Seven of the nine utilized measures have established evidence of reliability and validity (see Boersma et al., 2017b). Reliability and validity in the present study is described in Table 3. Nine independent observers who had followed a three-and-a-half-hour observer training carried out the observations. Although initially blind to the intervention, i.e. not informed about which ward was an experimental or a
control ward, five observers worked this out during observations on experimental wards that applied VCM well. Observations were conducted in the living-room, seven days a week, from 10:00 am until 1:00 pm (around coffee and lunch breaks) and from 3:00 pm until 6:00 pm (around tea and dinner time). Two observations were obtained per day (total six hours) for each of the participating residents, and one observation per day (total three hours) for each caregiver. Observation days were randomly selected, and for T0 and T1 the same procedure was used: observations were carried out on all days of the week and during the same periods; residents were observed several days when different caregivers were taking care of them.

a) Caregivers’ communicative behaviour and attitude (Adoption & implementation success)
Quality of Caregivers’ Behaviour in dementia care (Adoption)
Communication and behaviour of the caregivers were assessed with the Quality of Caregivers’ Behaviour in dementia care (QCB), a 25-item observation instrument based on the Dialectical Framework developed by Kitwood (1997) and adapted by Van Weert et al. (2006). This adapted version of Van Weert et al. (2006) consists of two subscales and describes a variety of interactions (communicative behaviour of caregivers) that influence the well-being of residents either positively (Positive Person Work, PPW) or negatively (Malignant Social Psychology, MSP).

Approaches to Dementia Questionnaire (Adoption)
Caregivers rated their attitude towards dementia with the Approaches to Dementia Questionnaire (ADQ) (Lintern et al., 2000), indicating on a 5-point Likert scale the extent to which they agree with 19 statements regarding the two dimensions ‘hope’ and ‘person-centeredness’.

Overall implementation score (Implementation success)
For each experimental ward, Foundation Theatre Veder rated the overall quality of implementation of VCM at T1 with one score between zero and ten. This score was based on Theatre Veder’s overall assessment of several criteria, which were not scored separately: attitude of the caregivers during the training, the ability of the caregivers to integrate VCM into daily caring activities, and changed behavior of caregivers.

Veder Contact Method list (Implementation success)
Application of elements and techniques of VCM by caregivers was assessed during three hours of caregiver observation at T0 and three hours at T1 with the ‘Veder Contact Method’ observation list. This list was originally developed by Tol et al. (2011) for the Veder method as ‘a living room performance’ and adapted for VCM in 24-hour care. Examples of items on the list are: ‘Does the caregiver present herself to the individual resident?’, ‘Does the caregiver make an effort to retrieve long-term memories from the resident?’, ‘Does the caregiver attune her communication (tone, tempo, rhythm) to the resident?’, ‘Does the caregiver use music or songs that the residents like?’ and ‘does the caregiver use poetry in the communication?’
b) Content of the care plan (Implementation)
The content of the resident care plans was assessed by means of a checklist determining whether the personal preferences of the residents and information about their life history were described with respect to music, social contacts, activities, personal habits.

Caregivers rated themselves on the ‘Working with a care plan’ subscale of the ‘Emotion-oriented Skills in the Interaction with Elderly People with Dementia-list’ (ESID; Van der Kooij et al., 2013).

c) People with dementia’s behaviour, mood and quality of life (Effectiveness)
The quality of life of residents was assessed using the QUALIDEM (Ettema et al., 2007 a, b), a 37-item observational instrument including nine subscales which are described in Table 3. The QUALIDEM was validated comprehensively (Aspden et al., 2014; Bouman et al., 2011; Dichter et al., 2013; Ettema et al., 2007a and b) for use with people with dementia, and has been successfully used in nursing home research (Gräske et al., 2014; Ortiz et al., 2014; Van Dijk et al., 2012). Behaviour and interactions of residents were assessed using INTERACT, a 34-item observational instrument on behaviours measuring mood, speech, interaction with others, relating to environment, need for prompting and alertness/inactivity (Baker et al., 2001; Baker & Dowling, 1995). Because VCM is a new method we could not exactly predict the items on which an effect was expected, and we therefore chose to use all items. ‘Overall mood’ of residents was assessed with FACE, a three-point Likert scale (Ʌ, Ʌ, Ʌ) (Whaley & Wong, 1987).

Analysis
Data was analysed with SPSS for Windows version 20. Baseline characteristics of the caregivers and residents were calculated using percentages, means and standard deviations or median and interquartile ranges, depending on the type and distribution of the data. Differences in baseline characteristics of the experimental and control groups were tested using the chi-squared test or Fisher’s exact test for dichotomous or nominal variables and the independent samples t-test or Mann-Whitney U-test for interval or ordinal variables. The same statistical tests were used to perform a non-response analysis between caregivers from the experimental group and the control group who dropped out before posttest, and between the residents who agreed to participate and those who refused or did not respond at all. Finally, the caregivers and residents who dropped out during the study were compared with caregivers and residents who completed the study.
Inter-rater reliability (IRR) of the behaviour observation instruments used for the caregivers and residents were determined by having two observers conduct observations simultaneously: 44 caregivers (19%) and 56 residents (22%) were observed simultaneously. Mean intra-class coefficients (ICC) were calculated for the nine subscales of the QUALIDEM and the two subscales PPW and MSP of the QCB. An ICC < 0.40 was viewed as poor, between 0.40 and 0.59 as fair, between 0.60 and 0.74 as good, and higher than 0.75 as excellent (Cicchetti, 1994). Kappa’s (κ) were calculated for the items (INTERACT, FACE and the observation list ‘Veder
Contact Method’); values between 0.21 and 0.40 were considered fair, between 0.41 and 0.60 moderate, and values > 0.61 good (Altman, 1990). Inter-rater reliability is described in Table 3.

To examine whether changes in means on continuous outcome measures between T0 and T1 differed between the experimental and the control group, a multilevel analysis was carried out taking into account clustering of residents and caregivers within wards. First, only group (experimental or control) was included as a fixed effect in the model. Subsequently the degree of implementation as measured by Foundation Theatre Veder in the experimental group was added as a fixed effect. The cut-off point for a high or low implementation score was set at six points. A random effect for ward and for subjects nested within wards was included in the model. Analyses were corrected for significant differences at baseline between caregivers and residents in the experimental and the control group. Linear mixed models were used for continuous outcomes, and general estimating equations (GEEs) with logit link function for dichotomous and ordinal outcomes. In the linear mixed models, a variance component correlation structure was used and in the GEEs an exchangeable correlation structure was used to take into account the clustering within wards. Post hoc analyses were conducted to compare the changes in the two experimental groups (high and low implementation score) and the control group. The Bonferroni correction was used for multiple testing. Analyses were only performed when the variance of the change between T0 and T1 did not equal zero. A T-test was used to calculate the differences between both experimental groups regarding the application of VCM (as measured by the observation list ‘Veder Contact Method’) by caregivers at T1. Additionally, a Pearson’s correlation between the difference scores (d) of the subscales of QCB and the Veder list was performed. All statistical tests were conducted two-sided with an alpha level of 0.05. A p-value <0.1 is reported as a tendency to significance. Cohen’s d effect sizes were calculated for the continuous outcome measures.

Results

Response

Of the 212 eligible residents (122 in the experimental and 90 in the control group), 106 received the intervention (experimental group) and 86 received CAU (control group). At T1, 78 (63.9%) care plans and 76 (62.3%) behaviour and quality of life measurements of the residents in the experimental group were analysed, versus 61 (67.7%) care plans and 58 (64.4%) behaviour and quality of life measurements of the residents in the control group. For nineteen residents (ten from the experimental group and nine from the control group) one of four observations was missing, and for one resident in the experimental group two of four observations (one T0, one T1) were missing. Because these residents did not drop out during the study, we included them in the analyses. We determined 224 caregivers were eligible for inclusion (145 in the experimental and 79 in the control group). At T1 behaviour observations of 79 (54.4%) caregivers from the experimental group and 57 (72.2%) of the control group were analysed. Data of 75 (51.7%) caregivers in the experimental group and 36 (45.6%) in the control group were included in the analysis of attitude. A consort diagram for resident and caregiver recruitment is presented in Figure 1.
CHAPTER 5

Enrollment

Assessed for eligibility
249 residents
228 caregivers

Residents excluded (n = 37):
1. Did not meet inclusion criteria
31. Declined to participate
4. Non-response

Caregivers excluded (n = 4):
1. Work only night shifts

Allocation

From 6 experimental wards:
122 residents allocated to experimental group
• 106 received VCM
• 16 deceased before pretest
145 caregivers allocated to VCM
• 141 caregivers received VCM training

From 6 control wards:
90 residents allocated to control group
• 86 received care-as-usual (CAU)
• 1 moved before pretest to other ward/nursing home
• deceased before pretest
79 caregivers allocated to control group

Drop-out at Follow-Up

106 residents received VCM
26 lost to follow-up at month 9:
- 23 deceased between pre- and posttest
- 3 moved to other ward/nursing home
62 caregivers lost to follow-up at month 9:
- 35 could not be observed
- 7 were ill during pretest or posttest
- 20 changed job

86 residents received care-as-usual (CAU)
24 lost to follow-up at month 9:
- 18 deceased between pretest and posttest
- 6 moved to other ward/nursing home
22 caregivers lost to follow-up at month nine:
- 7 could not be observed
- 3 were ill during pretest or posttest
- 12 changed job

Completers analysis

78 Care plans of residents analysed:
• 2 excluded from analysis (no permission for care plan analysis)
76 residents analysed on behaviour and QoL:
• 4 excluded from analysis because of continuous stay in own room
79 caregivers analysed on behaviour
75 caregivers analysed on attitude

61 Care plans of residents analysed
• 1 excluded from analysis (no permission for care plan analysis)
58 residents analysed for behaviour and QoL:
• 4 excluded from analysis because of continuous stay in own room
57 caregivers analysed on behaviour
36 caregivers analysed on attitude

Figure 1. Consort diagram detailing numbers of residents & professional caregivers

* received no contact with legal guardian / † during observations busy in bedrooms of residents or busy in office with other colleagues, or were not present during observation period.
<table>
<thead>
<tr>
<th>Caregiver characteristic</th>
<th>VCM (n = 79)</th>
<th>CAU (n = 57)</th>
<th>X² (df, t or U)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, n (%)</td>
<td>77 (97.5)</td>
<td>54 (94.7)</td>
<td>0.698 (1)</td>
<td>0.41</td>
</tr>
<tr>
<td>Age in years, mean (SD)</td>
<td>45.5 (12.7)</td>
<td>43.2 (10.6)</td>
<td>-1.101 (134)</td>
<td>0.27</td>
</tr>
<tr>
<td>Nationality, n (%)</td>
<td></td>
<td></td>
<td>2.659 (3)</td>
<td>0.45</td>
</tr>
<tr>
<td>• Dutch</td>
<td>66 (84.6)</td>
<td>52 (91.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Surinamese/Antillean</td>
<td>6 (7.7)</td>
<td>4 (7.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Other Western</td>
<td>2 (2.6)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Other non-Western</td>
<td>4 (5.1)</td>
<td>1 (1.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing education level, n (%)</td>
<td>13.924 (2)</td>
<td>0.001*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• No nursing education</td>
<td>15 (19.0)</td>
<td>1 (1.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Low nursing education</td>
<td>25 (31.6)</td>
<td>12 (21.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Middle/high nursing education</td>
<td>39 (49.4)</td>
<td>44 (77.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function, n (%)</td>
<td></td>
<td></td>
<td>9.298 (5)</td>
<td>0.098</td>
</tr>
<tr>
<td>• Nurse</td>
<td>32 (40.5)</td>
<td>32 (57.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Nursing assistant</td>
<td>20 (25.3)</td>
<td>11 (19.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Nurse &amp; coordinator</td>
<td>5 (6.3)</td>
<td>7 (12.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Therapist</td>
<td>8 (10.1)</td>
<td>1 (1.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Nursing home hostess</td>
<td>13 (16.5)</td>
<td>5 (8.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Volunteer</td>
<td>1 (1.3)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working experience as caregiver, n (%)</td>
<td>4.940 (2)</td>
<td>0.085</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Short (&lt; 1 year)</td>
<td>3 (3.8)</td>
<td>1 (1.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Medium (1 – 5 year)</td>
<td>27 (34.2)</td>
<td>10 (18.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Long (&gt; 5 year)</td>
<td>49 (62.0)</td>
<td>44 (80.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working experience with people with dementia, n (%)</td>
<td>9.821 (2)</td>
<td>0.007*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Short (&lt; 1 year)</td>
<td>5 (6.3)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Medium (1 – 5 year)</td>
<td>30 (38.0)</td>
<td>11 (20.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Long (&gt; 5 year)</td>
<td>44 (55.7)</td>
<td>44 (80.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years working on the ward, n (%)</td>
<td>6.152 (2)</td>
<td>0.046*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Short (&lt; 1 year)</td>
<td>8 (10.1)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Medium (1 – 5 year)</td>
<td>39 (49.4)</td>
<td>32 (56.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Long (&gt; 5 year)</td>
<td>32 (40.5)</td>
<td>25 (43.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head nurse, n (%)</td>
<td>2 (2.6)</td>
<td>0 (0.0)</td>
<td>1.484 (1)</td>
<td>0.22</td>
</tr>
<tr>
<td>Working hours a week, n (%)</td>
<td></td>
<td></td>
<td>7.132 (5)</td>
<td>0.21</td>
</tr>
<tr>
<td>• &lt; 8 hours</td>
<td>2 (2.5)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 8 – 15 hours</td>
<td>9 (11.4)</td>
<td>3 (5.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 15 – 22 hours</td>
<td>12 (15.2)</td>
<td>17 (29.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 22 – 29 hours</td>
<td>27 (34.2)</td>
<td>20 (35.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 29 – 36 hours</td>
<td>26 (32.9)</td>
<td>14 (24.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• &gt; 36 hours</td>
<td>3 (3.8)</td>
<td>3 (5.3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4a. Background characteristics of the participating caregivers of the experimental and control wards (n = 136) who completed pre- and posttest
*Significant on a p = 0.05 level
<table>
<thead>
<tr>
<th>Caregiver characteristic</th>
<th>VCM ($n = 79$)</th>
<th>CAU ($n = 62$)</th>
<th>$X^2$ (df), t or U</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, $n$ (%)</td>
<td>79 70 (87.3)</td>
<td>62 51 (82.3)</td>
<td>0.708 (1)</td>
<td>0.40</td>
</tr>
<tr>
<td>Age in years, mean (SD)</td>
<td>79 85.3 (7.5)</td>
<td>62 85.9 (7.8)</td>
<td>0.477 (139)</td>
<td>0.63</td>
</tr>
<tr>
<td>Education, $n$ (%)</td>
<td>20 7 (35.0)</td>
<td>22 9 (40.9)</td>
<td>0.891 (3)</td>
<td>0.83</td>
</tr>
<tr>
<td>Primary school</td>
<td>3 (15.0)</td>
<td>4 (18.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>5 (25.0)</td>
<td>6 (27.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle</td>
<td>5 (25.0)</td>
<td>3 (13.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years in nursing home, median (range)</td>
<td>79 1.98 (23-14.9)</td>
<td>62 1.72 (24-13.8)</td>
<td>2606.5 (230)</td>
<td>0.52</td>
</tr>
<tr>
<td>Years of illness, median (range)</td>
<td>69 3.5 (0.0-13.7)</td>
<td>53 2.83 (0.67-17.7)</td>
<td>1911.5 (130)</td>
<td>0.67</td>
</tr>
<tr>
<td>Type of dementia, $n$ (%)</td>
<td>77 38 (49.4)</td>
<td>1 (1.8)</td>
<td>2.385 (3)</td>
<td>0.50</td>
</tr>
<tr>
<td>Alzheimer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vascular dementia</td>
<td>14 (18.2)</td>
<td>10 (18.2)</td>
<td>15 (24.6)</td>
<td></td>
</tr>
<tr>
<td>Dementia not specified</td>
<td>23 (29.9)</td>
<td>44 (80.0)</td>
<td>16 (26.2)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2 (2.6)</td>
<td>44 (80.0)</td>
<td>4 (6.6)</td>
<td></td>
</tr>
<tr>
<td>MMSE-score, mean (SD)</td>
<td>39 13.9 (8.9)</td>
<td>31 14.6 (7.3)</td>
<td>0.356 (68)</td>
<td>0.72</td>
</tr>
<tr>
<td>BCRS-score, median (range)</td>
<td>35 48 (24-56)</td>
<td>28 47 (25-56)</td>
<td>57</td>
<td>0.24</td>
</tr>
<tr>
<td>GDS-score, mean (SD)</td>
<td>73 5.6 (1.2)</td>
<td>59 5.6 (1.2)</td>
<td>-0.011 (130)</td>
<td>0.99</td>
</tr>
<tr>
<td>Use of psychopharmaca, $n$ (%)</td>
<td>79 25 (31.2)</td>
<td>61 25 (41.0)</td>
<td>1.307 (1)</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Table 4b. Background characteristics of the participating residents of the experimental and control wards ($n = 141$) who completed pre- and posttest

Background characteristics of caregivers and residents
At baseline we found the following statistically significant differences: on the experimental wards caregivers were educated on a lower level ($p = 0.001$), had less experience working with people with dementia ($p = 0.007$), and had been working fewer years on the ward ($p = 0.046$). These variables were included as potential confounders in the analyses, the adjusted analyses are reported. No significant differences were found in resident characteristics between the groups (Table 4a & b).

Implementation of VCM

Implementation scores
Foundation Theatre Veder rated ward 2a & b with an implementation score of 4.5. Wards 1a & b and ward 3 received a score of 7.0, wards 4, 5a & b and 6a & b a score of 7.5. Following these implementation scores, the experimental group was divided in two subgroups: E1 with an implementation score of 4.5 ($n = 20$ residents) and E2 with an implementation score of 7.0 or 7.5 ($n = 56$ residents).
**Application of VCM in daily practice**

An overall significant difference in change between T0 and T1 was found between the three groups regarding the extent to which caregivers applied elements and techniques of VCM ($p = 0.006$). Post hoc analysis (appendix C) showed an improvement in E2 (high implementation score) compared to E1 (low implementation score) ($p = 0.005; d = 0.37$), but not compared to the control group ($p = 0.14$). The difference in change between T0 and T1 on application of VCM by caregivers between both experimental groups was also significant ($p = 0.002$).

**Caregivers’ communicative behaviours and attitude to dementia (Adoption)**

Multilevel analyses showed a significant overall change between T0 and T1 on positive communicative behaviours (PPW: $p = 0.003$). A tendency to an overall significant change between T0 and T1 was found on negative communicative behaviours (MSP: $p = 0.078$) (see Figure 2). In the post hoc analyses and as shown in Figure 2, caregivers in E2 (high implementation score) showed a significantly greater positive change than E1 (low implementation score) on PPW at T1 ($p = 0.004, d = 0.39$). Between T0 and T1, mean PPW increased in E2 and decreased in E1. E2 showed a tendency to a significant positive change compared to the control group ($p = 0.099, d = 0.20$). Appendix C shows the post hoc analyses of PPW and MSP.

![Figure 2. Subscales Positive Person Work (PPW) and Malignant Social Psychology (MSP) from Kitwood’s dialectical framework (QCB)](image)

There was no significant overall change of the attitude of the caregivers towards dementia (ADQ) between baseline and follow up (before and after implementation of VCM). No change was found on the total scale ($p = 0.97$), neither on the subscales ‘hope’ ($p = 0.24$) nor ‘person-centeredness’ ($p = 0.65$). The baseline scores of the total scale ADQ and both subscales (hope and person centeredness) were already rather high at T0 in all groups and have not changed much at T1 (see Table 5).
<table>
<thead>
<tr>
<th>Experimental group</th>
<th>N</th>
<th>T0</th>
<th>T1</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADQ total (19-95)</td>
<td>75</td>
<td>76.32 (5.63)</td>
<td>77.70 (7.15)</td>
</tr>
<tr>
<td>ADQ subscale Hope (8-40)</td>
<td>75</td>
<td>24.17 (4.05)</td>
<td>25.86 (4.12)</td>
</tr>
<tr>
<td>ADQ subscale Person Cantered (11-55)</td>
<td>75</td>
<td>43.61 (3.85)</td>
<td>43.41 (4.07)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control group</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ADQ total (19-95)</td>
<td>36</td>
<td>78.22 (6.65)</td>
<td>78.97 (8.09)</td>
</tr>
<tr>
<td>ADQ subscale Hope (8-40)</td>
<td>36</td>
<td>25.97 (4.35)</td>
<td>26.42 (4.99)</td>
</tr>
<tr>
<td>ADQ subscale Person Cantered (11-55)</td>
<td>36</td>
<td>43.67 (3.41)</td>
<td>44.08 (4.18)</td>
</tr>
</tbody>
</table>

Table 5. Mean scores and standard deviations of total and subscales of ADQ

Correlation between caregivers’ communicative behaviour and application of VCM
A significant positive correlation ($r = 0.722$) was found between the subscales positive communicative behaviour (PPW) and the Veder list ($p = 0.000$); a negative correlation ($r = -0.318$) was found between the subscales negative communicative behaviour (MSP) and the Veder list ($p = 0.005$). This suggests that the changed behaviour of the caregivers could be a result of a different way of working.

Implementation of VCM in the care plan
No significant difference in change from T0 to T1 was found in the care plans on information about the life history of the residents between E2 (high implementation score) and the control group ($p = 0.95$). E1 (low implementation score) could not be included in the multilevel analysis of the care plan, because the variance of the change was zero between T0 and T1. Also, no significant difference in overall change between T0 and T1 was found in the care plan with respect to information about the personal preferences of residents ($p = 0.24$). Overall significant changes between T0 and T1 were found on three of the thirteen items of the subscale ‘Working with a care plan’ (ESID). Post hoc analysis (Appendix C) showed that the caregivers of E2 rated themselves significantly higher compared to the control group on the items ‘Finding it easy to report positive topics for the care plan’ ($p = 0.010$) and ‘Discussing and presenting the care plan in the multidisciplinary consultation’ ($p = 0.034$), but not compared to E1. The caregivers of E2 rated themselves significantly lower in comparison with E1 on item ‘Reporting psychosocial problems’ ($p < 0.0001$) and caregivers of E1 rated themselves significantly higher on this item in comparison with the control group ($p = 0.032$).

People with dementia’s quality of life, behaviour and mood (Effectiveness)
Multilevel analyses showed significant overall changes between T0 and T1 on the QUALIDEM subscales ‘positive affect’ ($p = 0.001$) and ‘social relations’ ($p = 0.003$) (Figure 3). Post hoc analysis (Appendix D) of both subscales showed that the overall positive change of quality of life was caused by the significantly higher scores of E2 (high implementation wards)
An overall significant positive change between T1 and T0 was found between the three groups on eleven items of the INTERACT; spoke clearly ($p = 0.020$), spoke sensibly ($p = 0.034$), talked in normal length sentences ($p = 0.039$), appropriate eye contact ($p = 0.030$), related well ($p = 0.006$), responded to speaking ($p = 0.044$), tracked stimuli ($p = 0.028$), attentive to activity ($p = 0.009$), comments or questions about activities ($p = 0.027$), did things on own initiative ($p = 0.026$), negativism/complaining ($p = 0.015$). Post hoc analyses (Appendix D) showed that, with the exception of ‘negativism/complaining’, the significant overall changes of these items could be explained by the fact that at T1, the scores of E2 (high implementation wards) were significantly higher than the scores of E1 (low implementation ward). On three of the ten items E2 also scored higher than the control group. On the item ‘negativism/complaining’, E1 showed a significantly greater change (leading to less negativism/complaining behaviour) compared to the control group. The post hoc analyses on this item also showed a tendency to a significant change in E2 compared to the control group. The FACE (Appendix D) demonstrated no significant difference in change between T0 and T1 in mood of the residents between the three groups ($p = 0.86$).

**Discussion**

We investigated the Effectiveness, Adoption and Implementation of VCM, using data from caregivers and residents. Five of the six experimental wards received a sufficient score for the implementation of VCM from the trainers from Foundation Theatre Veder. On these five wards caregivers were better able to integrate VCM in their daily caring tasks and showed more positive communicative behaviours (e.g. recognition, play, distraction, making contact) in their interaction with residents, compared to the lower rated wards. The present study did not provide evidence that caregivers developed a more person-centred or hopeful attitude.
towards people with dementia when applying VCM, nor did implementation of VCM result in more information about life history and personal preferences in the care plans of the residents. Successful implementation of VCM was reflected in the improvement of certain aspects of quality of life (i.e. positive affect, social relations) and social behaviour (e.g. speech, relation with the environment) of the residents. Implementation of VCM did not improve their mood.

Below we discuss our findings in relation to the three hypotheses of our study. First, the influence of implementing VCM on communicative behaviour and attitudes of the caregivers (i.e. adoption of the method by the caregivers). Caregivers from the five experimental wards with the higher implementation score showed more ‘VCM fidelity’, i.e. they applied the method more consistently during their daily caring tasks. This was associated with more positive communicative behaviours. Also, after implementation of VCM an overall tendency was observed that these caregivers showed less negative communicative behaviours. Future research with larger samples should determine whether this tendency could be empirically confirmed as an effect of VCM. The caregivers from the ward with a low implementation score showed a decline in positive communicative behaviour in contact with the residents. These findings confirm the findings of the process analysis that was conducted during the implementation study (Boersma et al., 2017a). Ward 2a & b had to deal with many organizational problems, which impeded VCM implementation and apparently negatively influenced the communicative behaviour of caregivers. Although not significant, the communicative behaviour of caregivers from the control wards improved regarding making more individual contact with the residents. This may have been caused by contamination effects and ‘the Hawthorne effect’ in one nursing home, i.e. caregivers may have modified their behaviour stimulated by the fact that they participated in the research and possibly heard about experiences with VCM from caregivers of the experimental ward within the same nursing home. Caregivers’ attitude towards people with dementia did not change in any of the three groups. This seems in contradiction with the findings of the process analysis (Boersma et al., 2017a) in which the interviewed caregivers reported they learned a lot in the VCM training and coaching program. As found by Smythe et al. (2014) a possible ceiling effect (caregivers already scored high at pretest) might explain the absence of further improvements in knowledge and attitude.

Secondly, the influence of implementing VCM on the content of the care plan (implementation). The assumption was that adequate application of VCM requires caregivers to know the personal life history and preferences of the residents. In the process analysis (Boersma et al., 2017a) caregivers reported that applying VCM gave them valuable insights into the personal interests and preferences of the residents. In the present study, implementation of VCM did not result in any change in the amount of personal information about the residents’ life history or preferences in their care plans. It is likely that caregivers do not report the obtained valuable insights in the care plan. This corresponds to the findings of Broderick & Coffey (2013), who reported that nurses in general poorly document personal information of the residents in the care plan. Kolanowski et al. (2015) found that caregivers prefer oral exchange of information about residents, which could be an explanation for not finding changes in the reported
information in the care plans. They described that caregivers consider oral communication more reliable and easier. Nevertheless, after VCM implementation, caregivers from the wards with a higher implementation score reported that they found it ‘easier to report positive topics about the residents in the care plan’. VCM is a cheerful method which focuses on having fun with the residents and on opportunities of making contact (Boersma et al., 2017a). This possibly stimulates caregivers to report more positive topics of the residents, in contrast with the regular problem-oriented reports. Also, via the ESID-questionnaire caregivers reported that after VCM implementation they found it easier to ‘discuss and present the care plan in the multidisciplinary consultation’. Van der Kooij et al. (2013) also reported considerable changes in how caregivers function during multidisciplinary consultation after the implementation of Emotion-Oriented Care. Surprising results from our process analysis (Boersma et al., 2017a) indicated that VCM helped caregivers to improve collaboration with other professionals. Caregivers experienced VCM as a method that enables discussion on the behaviour of residents in interaction with other professionals. After the training in VCM, they felt more actively involved in the multidisciplinary meetings and made suggestions on how, for example, difficult behaviour of the residents could be handled using VCM. We speculate that successfully trained caregivers changed their focus from the traditional problem-orientated care to a more positive view on how residents can be optimally supported based on the possibilities residents still have. This may explain why the caregivers of the high implementation group scored lower on ‘reporting psychosocial problems’, as compared to the other groups.

The third hypothesis to discuss is the influence of VCM on quality of life, behaviour and mood of the residents (effectiveness). It is impressive that the caregivers succeeded in improving several aspects of the residents’ well-being (measured with QUALIDEM) and social functioning (measured with INTERACT) during the intervention period. These findings correspond with the review of Anderson et al. (2016), who showed that the way caregivers communicate with and care for residents influenced aspects of their quality of life. Similar to the study of Van Dijk et al. (2012) on the Veder method as ‘living-room theatre performance’, VCM did not influence the mood of the residents as measured with FACE. Originally, FACE was intended as a self-report scale for the residents. In both studies, the residents were not able to do this due to the GDS mean score of between 5.1 and 5.6, indicating a moderate to severe cognitive decline. Therefore, the observers interpreted the mood by the facial expression of the residents. In FACE, a choice has to be made for one out of three smileys (☹, ☺, ☻). Apart from the fact that we had to rely on observers, the 3-point FACE scale might not be sensitive enough to capture a change in mood. In the previously conducted process analysis, caregivers and their managers reported that applying VCM produced more fun among residents (Boersma et al., 2017a). This qualitative finding gave the impression that VCM positively influences the mood of the residents. We did not find this with FACE. In the present study the median score of FACE in the three groups was the neutral face expression (☉) at both measuring moments. Nevertheless, the positive outcomes on several other aspects of the residents’ quality of life and social behaviour show that VCM is a valuable alternative to the Veder Method as ‘living-room theatre performance’ (Van Dijk et al., 2012).
Based on these findings, can we conclude that implementation of VCM was successful? First, Foundation Theatre Veder rated the success of VCM implementation on five wards with a sufficient score (7.0 or 7.5) and one ward with an insufficient score (4.5). These scores are related to the percentage of caregivers that participated in the training and coaching program (the ‘reach’) as reported in Boersma et al. (2017a). Next, seven indicators were used to assess the successfulness of VCM implementation. Four of these (communicative behaviour of the caregivers, application of VCM by caregivers, quality of life and social behaviour of people with dementia) showed improvements after VCM implementation. Three indicators showed no changes (caregivers’ attitude towards people with dementia, personal information in the residents’ care plans, residents’ mood). Based on these outcomes we may conclude that implementation of VCM has been partly successful but there is room for improvement.

Some strengths of the study are worth noting.

The present study demonstrates that the overall implementation score by Foundation Theatre Veder, a score between one and ten, is a simple and adequate method to rate implementation success. The distinction between the experimental groups with high and low implementation scores enabled us to show differences in outcomes between both groups. An interesting question for future studies is whether it is advisable to let the ‘experts of the innovation’ (i.e. those who systematically developed and/or professionally implemented the method) give an overall implementation score based on explicit criteria - such as used in our study: the attitude of the caregivers during the training, the ability of the caregivers to integrate the method into daily caring activities, and changed behaviour of caregivers - that can be taken into account in the analyses of the outcomes.

Given the nine months’ duration of the study, a relatively high number of caregivers and residents completed the study, despite the 8.5% higher loss of residents than expected (Koopmans et al., 2003). The study was completed by 61% caregivers. Nursing home care is faced with a high caregiver turnover (Zimmerman et al., 2014). Due to the relatively high loss of residents and caregivers, and because the experimental group was split into two subgroups (high and low implementation score), the post hoc analysis of our study was somewhat underpowered. In contrast to the study protocol, six instead of eight experimental wards were enrolled, because the number of residents per ward in three nursing homes was higher than estimated in advance. Hence, this did not influence the power of the study. Different items of the INTERACT and few subscales of the QUALIDEM showed a trend towards significance in the post hoc analyses. With a larger sample size some of these items/subscales may have shown significant changes.

Finally, the observations were carried out by trained, independent observers; inter-observer reliability appeared to be satisfactory.

Some limitations of this study should be mentioned.

The wards were matched (not randomized) on relevant characteristics, e.g. number of residents living on the ward and residential form. No differences were found on baseline characteristics, so we can be fairly sure the groups were comparable.
From the perspective of successful implementation, the duration of the study (nine months between baseline and final measurement) was too short (Van der Kooij et al., 2013). From the perspective of effectiveness of VCM, the duration of the study was probably a little long. Some short-term effects may have been missed because of the high loss of caregivers and residents.

Following the implementation model, i.e. the RE-AIM framework (Gaglio et al., 2014), a third measurement should have been carried out six months after the last implementation contact. In that case, the study duration would have been 15 months. Because of high turnover of residents and caregivers in the nursing home care and the limited funding for the study, a third measurement was not feasible.

Behaviour of caregivers and people with dementia was observed in the living rooms only. In future research, it would be worthwhile to also observe the behaviour of caregivers and people with dementia during other daily care moments, for example in the bedroom or bathroom.

Conclusions
Our results show that VCM, a theatre-based communication method specifically adapted for 24-hour care, is well implementable. VCM implementation led to behavioural changes in the caregivers on five of the six wards, which indicated a positive impact on the behaviour and quality of life of the residents. The present study shows that it is possible to investigate the implementation success of a new person-centred care method in nursing homes. Differences in implementation successfulness were demonstrated by using various types of data collected from caregivers and residents, i.e. questionnaires, observations and analysis of care plans. It is important to examine the implementation of an intervention from various perspectives in order to be able to say something about the effectiveness of the implementation.
References


