J.C.M. van Weert, B.M. Janssen, A.M. van Dulmen, P.M.M. Spreeuwenberg, J.M. Bensing, M.W. Ribbe
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Correspondence:
Julia C.M. van Weert,
NIVEL, Netherlands Institute for Health Services Research,
PO Box 1568, 3500 BN, Utrecht, The Netherlands.
E-mail: j.vanweert@nivel.nl

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ISSUES AND INNOVATIONS IN NURSING PRACTICE

Julia C.M. van Weert PhD.
Senior Researcher, NIVEL, Netherlands Institute for Health Services Research, Utrecht, The Netherlands
Bienke M. Janssen MA.
Researcher, NIVEL, Netherlands Institute for Health Services Research, Utrecht, The Netherlands
Alexandra M. van Dulmen PhD.
Research Coordinator, NIVEL, Netherlands Institute for Health Services Research, Utrecht, The Netherlands
Peter M.M. Spreeuwenberg MA.
Statistician, NIVEL, Netherlands Institute for Health Services Research, Utrecht, The Netherlands
Jozien M. Bensing PhD.
Professor in Health Psychology, Director, NIVEL, Netherlands Institute for Health Services Research, Utrecht, The Netherlands
Miel W. Ribbe MD PhD.
Professor in Nursing Home Medicine, Department of Nursing Home Medicine, VU University Medical Center/EMGO Institute, Amsterdam, The Netherlands

Nursing assistants' behaviour during morning care: effects of the implementation of snoezelen, integrated in 24-hour dementia care

Aim. This paper reports an investigation of the effects of the implementation of snoezelen, or multisensory stimulation, on the quality of nursing assistants' behaviour during morning care.

Background. Nursing assistants in long-term dementia care are often unaware of the impact of their behaviour on patient functioning. Snoezelen is a psychosocial intervention that might improve the quality of caregiver behaviour by combining a person-centred approach with the integration of sensory stimuli.

Methods. A quasi-experimental pre- and post-test design was implemented in 12 wards for older mentally infirm patients at six nursing homes. The experimental group intervention was a 4-day in-house 'snoezelen' training, stimulus preference screening and supervision meetings. The control group received usual nursing home care. The effectiveness of the intervention was studied by analysing 250 video recordings, which were assessed by independent observers using a 4-point measurement scale developed for this study and based on Kitwood's Dialectical Framework.

Results. The results showed a statistically significant increase in 'Positive Person Work' and decrease in 'Malignant Social Psychology' (total scores) after the implementation of snoezelen. Nursing assistants in the experimental group also improved by statistically significant amounts on all subitems of 'Positive Person Work'. The mean number of sensory stimuli, offered explicitly, increased.

Conclusion. The implementation of snoezelen succeeded in effecting a change to a more person-centred approach during morning care. The results indicate that nursing assistants' behaviour can be positively changed provided that the new care model has been successfully implemented.

INTRODUCTION

Dementia is an irreversible disease that results in progressive cognitive deterioration and behaviour problems. Recent research shows that even patients suffering from severe dementia are sensitive to the emotional behaviour of others, such as nursing assistants (Williams et al. 2003). Thus far, most research on dementia has focused on the cognitive and behavioural aspects of the disease. Accordingly, most caregivers in long-term care facilities have had little education in understanding and responding to the emotional aspects of dementia and may be unaware of the impact of their behaviour on patient functioning (Magai et al. 2002). A growing body of literature indicates that the quality of the relationship between caregivers and patients and the quality of nurse behaviour are closely related to both the caregiver burden and patient symptomology (Williamson & Schulz 1990, Cicirelli 1993, Edberg et al. 1995, Magai & Cohen 1998, Kiely et al. 2000, Magai et al. 2002). Negative behaviour by caregivers, such as nursing assistants, may contribute to an increase in behavioural symptoms in dementia patients and sensitive, person-centred behaviour by nursing assistants is increasingly considered to be essential (Vitaliano et al. 1993, Kitwood 1997, Magai et al. 2002).

Snoezelen is a psychosocial intervention that combines a person-centred approach with the integration of sensory stimuli in daily care for nursing home residents suffering from moderate or severe dementia. Person-centred care is based on the humanist view that the status of individuals suffering from dementia should be preserved by positive interaction (Kuhn et al. 2000). Residents can be reached without the need for higher cognitive processes, such as memory or learning, by adding visual, auditory, tactile, olfactory and gustatory stimuli that accord with their preferences (Burns et al. 2000, Kok et al. 2000). The final aim of the implementation of snoezelen is compatible with that of other psychosocial interventions in dementia nursing home care, i.e. the improvement of the well-being of residents. In a parallel study, the effectiveness of snoezelen integrated into 24-hour dementia care on mood and behaviour of demented nursing home residents has been investigated (van Weert et al. 2005a). The results demonstrated a statistically signi- ficant treatment effect of snoezelen on residents' level of apathetic behaviour, depression, rebellious behaviour, aggressive behaviour and loss of decorum. During morning care, the experimental participants showed statistically significant changes in well-being (e.g. mood, happiness, enjoyment, sadness) and adaptive behaviour (e.g. responding to speaking, relating to nursing assistant) (van Weert et al. 2005a). However, the theoretical mechanisms that might explain the effects are still unclear, especially the relationship between the change in nursing assistants' behaviours and the improvement in residents' well-being. A change in nursing assistants' behaviour according to the principles of the intervention is likely to be related to positive effects for residents. Until now, few studies have paid attention to adherence to the intervention protocol (Schrijnemaekers et al. 2002). The aim of the study reported here was to gain insight into the behavioural changes of Certified Nursing Assistants (CNAs), 18 months after the start of the implementation of snoezelen in 24-hour dementia care.

KITWOOD'S DIALECTICAL FRAMEWORK

The intervention (implementation of snoezelen) aimed to effect a change from task-oriented care to person-centred care according to Kitwood's approach to dementia care. In his dialectical framework, Kitwood (1996) explains dementia on the basis of five key factors, i.e. personality, biography, physical health, neurological impairment and social psychology. Kitwood (1997) views the process of dementia as involving a continuing, dialectical interplay between the two main factors, namely those that pertain to neuropathology and those that are social-psychological. Social psychology makes up the fabric of life and enhances or diminishes an individual's sense of safety, value and personal well-being (Kitwood 1993a,b). Kitwood identified various areas of social psychology that are damaging to those who have dementia and interactions that make for well-being (Kitwood 1996, 1997). The interactions that adversely affect the selfesteem of elders suffering from dementia and contribute to undermining the individual's 'personhood' are called 'Malignant Social Psychology (MSP)'. The interactions that

are clearly conducive to the maintenance of 'personhood' and well-being are termed 'Positive Person Work (PPW)' (Kitwood 1997, 1998).

In total, Kitwood describes 17 categories of interaction that constitute Malignant Social Psychology and 10 categories of interactions that have to do with Positive Person Work (see Table 1, columns 1 and 3).

Kitwood and Bredin (1992) understand the preservation of 'personhood', i.e. deep and mutually empathetic interaction between people, as the central issue in the care of people with dementia. They attributed great importance to the social environment. The social environment of people with dementia, living in nursing homes, is to a large extent shaped by CNAs, because they interact with these residents on a regular basis. Good care by nursing assistants enables a person with dementia to feel supported, valued and socially confident, regardless of their cognitive impairments (Kuhn et al. 2000). The achievement of this is dependent upon the skills of the staff providing that care (Brooker at al. 1998). Therefore, all the positive and negative behaviours mentioned in Table 1 might be observed by CNAs in contact with nursing home residents with dementia.

THE STUDY

Aim

The aim of the study was to examine the extent to which CNAs succeeded in improving the quality of their behaviour during a well-defined care moment (i.e. morning care) by using a more person-centred approach. Morning care was defined as the period of time between 07:00 and 12:00 hours, when CNAs were concerned with bathing, grooming, dressing and toileting residents. Clinical experience and the literature indicate that the period of morning care is difficult for residents and CNAs because it is the time when 'problematic' behaviour, such as resident agitation, is most frequent (Wells et al. 2000)..

The following research question was studied:

- What is the effect of the implementation of snoezelen on the quality of CNA behaviour during morning care?

In particular, it was hypothesized that the intervention would lead to the following measurable changes:

- An increase in positive behaviours by CNAs.
- A decrease in negative behaviours by CNAs.
- An increase in sensory stimulation by CNAs.

[TABLE 1]

Design

The study was carried out in 12 wards for older mentally infirm residents at six Dutch nursing homes. Each nursing home provided an experimental and a control ward. The six experimental wards received training in 'snoezelen for caregivers' and implemented snoezelen in 24-hour care. In the six control wards, usual care without snoezelen continued. The participating nursing homes signed a cooperative agreement, in which they undertook to refrain from integrating snoezelen on the control wards during the study period. The period of implementation on the experimental wards lasted 18 months per ward in the period January 2001 to February 2003. Measurements (e.g. video recordings of morning care) were performed at baseline and after 18 months. Table 2 gives a summary of the study design.

Intervention

The implementation of snoezelen in 24-hour care was intended to teach nursing assistants how to apply qualitatively high, person-centred care and to combine this with sensory stimulation. Nursing assistants on the experimental wards (59 CNAs and six head nurses) were offered a 4-day in-house education session on 'snoezelen for caregivers' (16 hours in total), guided by a professional educator with a nursing background. After the training session, the wards started to implement snoezelen in the daily care. An individual snoezel care plan was written for each resident including a description of the required approach. The care plan was based on a lifestyle history interview with family members and a

stimulus preference screening, to find out which sensory stimuli the resident preferred. A study group was set up in each experimental ward, usually comprising three CNAs, the head nurse and an activity therapist or coordinator in sensory stimulation. The aim was to support the head nurse and/or 'sensory stimulation coordinator' to develop required organizational changes, evaluate the implementation process and make adaptations, tailored to their own ward, where necessary. During the 18-month implementation period, the nursing assistants were offered three in-house supervision meetings under the guidance of the same professional trainer. In addition, there were two general meetings attended by three representatives of each nursing home (e.g. head nurse, care manager) to support the implementation of snoezelen at the organizational level. Detailed information about the intervention is given elsewhere (van Weert et al. 2004).

[TABLE 2]

Participants

To establish the effectiveness of snoezelen, a sample size of 120 CNAs and 120 residents (60 treatments, 60 controls) was required (power ¼ 0·80, a ¼ 0·05, d ¼ 0·50). All nursing staff members were recruited for the study from all shifts (day, evening and night). The majority (81·4%) worked in rotation shifts. Temporary staff, students and CNAs only working at night were not eligible to participate. The two most important eligibility criteria for residents for the trial were: (1) moderate to severe dementia according to Diagnostic and Statistical Manual of Mental Disorders (DSM-IIIR; American Psychiatric Association 1994), diagnosed by a physician and (2) moderate to severe nursing-care dependency in terms of the Care Dependency Scale for inpatients with dementia (Dijkstra et al. 1996, 1999a,b, Dijkstra 1998). Twelve CNAs (seven in the pretest and five in the post-test) were videotaped twice as there were more residents than CNAs. In the pretest, 124 video recordings (61 in the experimental group and 63 in the control group) were collected with 117 different CNAs. In the post-test, 126 video recordings (64 in the experimental group and 62 in the control group) were collected with 121 different CNAs. Losses in follow-up were made good by the recruitment of new CNAs and residents, replacing the dropouts. In the experimental group, 38 CNAs and 29 residents were included in both the pre- and the post-test. In the control group, 42 CNAs and 32 residents were included in both measurements (see Data analysis for statistical treatment). The new CNAs in the experimental group received 'education on the job' from the head nurse or 'sensory stimulation coordinator' and attended the three follow-up meetings to be able to apply the snoezelen method.

Data collection

Each resident included was matched to a CNA who had knowledge of and close contact with them. They were videotaped during morning care from the moment the CNA reached the bedside until the moment the CNA left the room (usually together with the resident to go to the living room). Video assessment of CNA behaviour during morning care was done by two independent observers who were blind to whether the resident was included in the experimental or control group. They assessed the quality of nursing assistants' behaviour and the use of sensory stimuli (see below). Guidelines were followed to minimize observer bias and response. The observer watched a video recording twice before scoring. The average duration of videotaped morning care was 20·3 minutes.

Quality of nursing assistants' behaviour

An instrument was required that could assess the quality of nursing assistants' behaviour during morning care in terms of (a change in) positive and negative behaviours. Existing observational tools often focus on quantity of activity rather than quality of care or focus principally on negative caregiver behaviours (Williams & Rees 1997, Brooker et al. 1998). As there was no appropriate instrument available for the purposes of our study, we developed an observational instrument. The categories described by Kitwood (1997) formed the basis for the observation protocol. A pilot study, using participant observation, was carried out in three elder care nursing homes to find out the extent to which Kitwood's categories of PPW and MSP were applicable and sufficiently exhaustive and exclusive for the analysis of the observations. The observation period was 12 days (4 days in each ward). The interactions between CNAs and residents were observed and described in detail, i.e. as

exactly as possible. The data were analysed qualitatively. Each observation fragment was categorized and then the observation fragments were grouped into the 27 original categories of PPW and MSP, separate from the dialectical framework.

The outcome was that, in general, Kitwood's theory was appropriate for this research but some adaptations were made. First, some of the categories were difficult to distinguish. Accordingly, 'labelling', 'objectification' and 'stigmatization' were combined into 'prejudice'. 'Collaboration' and 'facilitation' were united as 'enabling', and 'ignoring' was extended by 'banishment'. Second, some positive CNA behaviours in interactions with residents could not be placed appropriately in one of the already existing categories as defined by Kitwood (1997). Consequently, four categories of PPW were added (i.e. 'distraction', 'making contact', 'empathize' and 'respecting privacy').The negative categories were extended by two categories that were the opposite of the two positive interactions 'enabling' and 'validation', i.e. 'disabling' and 'testing knowledge'. The latter was qualified as negative because, within the concept of snoezelen, the focus is on the (subjective) reality of the person with dementia and not on cognitive knowledge. Last, 'relaxation', 'holding' and 'celebration' were excluded because they were less applicable to morning care. Also omitted were 'intimidation', 'mockery', 'disparagement' and 'disempowerment', because no observations of these behaviours were found during the pilot study. These adaptations resulted in an observation scheme with 10 positive and 12 negative behavioural items (see Table 1, columns 2 and 4).

Observational scheme categories were used to develop a quantitative measurement instrument. The assessment instrument comprised the 22 items described (see Table 3).

To assess the extent to which a specific behaviour was implemented by a CNA during morning care, each of the 10 PPW items was rated on a 4-point Likert scale: (1) not at all; (2) a little; (3) moderately; and (4) maximally. The extent to which the 12 negative items were exhibited by the CNA was assessed on a scale from (1) not at all to (4) frequently. After recoding the items from 1–4 to 0–3, two subscales were constructed as the sum of the items of PPW (range 0–30) and MSP (range 0–36). The higher the score, the more positive (PPW) or the more negative (MSP) the behaviour of the CNA. The internal consistency of the subscales was good, with a Cronbach's alpha of 0·88 for PPW (10 items) and 0·78 for MSP (12 items). Details of the development of the measurement instrument are available from the first author.

Multisensory stimulation

In addition, the use of sensory stimuli was counted and described. A sensory stimulus was defined as the explicit use of visual, auditory, tactile, olfactory or gustatory stimuli to make contact with the resident and/or elicit a response from the resident. For example, briefly mentioning how nice the soap smelt was not counted as a sensory stimulus, but letting the resident smell the soap, talking about the smell and waiting for a response were rated as one olfactory sensory stimulus. In addition to the use of distinct sensory stimuli, CNAs also appeared to use their bodies to apply multiple sensory stimuli at one time. The use of more than one sensory channel could also provide a resident with sensory information. For example, a physical demonstration accompanied with words on how to put a pullover on, instead of merely saying 'please put your pullover on', gives the resident sensory information. These multiple sensory stimuli shown by CNAs were counted as a separate category. The use of affective touch, eye contact and smiling has been described elsewhere.

Reliability

Interobserver reliability was established by calculating the overall average pairwise Pearson correlation of 25 (10%) video recordings that were rated by both observers. The mean Pearson's r for the total of 22 subitems was 0·77 (range 0·66– 0·89), 0·75 for the PPW subitems (range 0·66–0·89) and 0·79 for the MSP subitems (range 0·69–0·86).

Ethical considerations

Informed written consent was obtained from residents, using proxy consent whereby residents' legal guardians were contacted by mail, informed about the content of the study and the right to withdraw from it at any time. Guardians were provided with informed consent forms to allow participation in the project, i.e. video recording of morning care for research purposes as well as the use of medical background characteristics. When a resident's intellectual capacity allowed verbal communication, the

CNA informed them about the video recordings and asked their permission. CNAs participated in the education programme and observation sessions as part of their regular employment duties. Thus, consent for their participation was obtained from the Director of Nursing. Willingness to participate was also laid down in the cooperative agreement between the nursing home and the research institute (NIVEL). Oral consent was obtained from CNAs before video recordings.

Data analysis

Descriptive statistics were obtained on the demographics of participants at pretest and post-test and in the experimental and control groups. Differences in these variables were examined using chi-square tests or t-tests.

To analyse the effects on the quality of CNA behaviour and the use of sensory stimuli, multilevel analysis was carried out with MLwiN software (Rasbash et al. 2000). Using multilevel analysis, the statistical analyses were carried out following the 'intention-to-treat' principle: all data available could be included in the analysis, which implies more power for the analysis than the 'complete cases only' approach employed by other techniques. A mixed model of multilevel analysis with repeated measurements was chosen to take into account all available data: the paired samples of completers (included in pretest AND post-test) and the unpaired pre- or postmeasurement data of non-completers (included in pretest OR posttest) (Bryk & Raudenbusch 1992, Goldstein 1995). We distinguished two levels of analysis: (level 1) measurement and (level 2) CNA. The correlated measurements of completers were controlled for by modelling the covariance between the premeasurement and postmeasurement at the CNA level. To compare the rate of change across the two groups, the mean pretest/post-test differences in the experimental group were tested against the mean pretest/post-test differences in the control group.

[TABLE 3]

In analysing CNA behaviour, age, gender, working experience and working period on the ward were added to the model as covariates. As CNA behaviour also depends on the condition and function of the resident involved, additional adjusted analyses were done by adding the following resident characteristics as covariates: care dependency, memory impairment, age, duration of nursing home admission and sex.

The number of wards (n ¼ 6 in each group) was too small to allow for comparisons between subgroups of nursing homes or to take similarity among wards into account.

RESULTS

Background characteristics

Table 4 shows the demographic characteristics for CNAs. There were no statistically significant differences on background characteristics between the experimental and control groups. The majority of the study population was female, with an average age of 36 and around 8 years of work experience.

Subgroup analyses were done to control for differences between completers (included in pretest and post-test) and non-completers (dropouts or newly included CNAs) in both groups during pre- and post-test and between non-completers in pretest and non-completers at post-test (not presented in table). In the post-test, completers were employed statistically significantly longer on the ward than those recently included CNAs, as had been expected (Exp: 4·4 vs. 1·7 years, $P < 0·01$; Contr: 3·1 vs. 1·7 years, $P < 0·01$). In the experimental group, completers also had more experience than the new members CNAs (7·3 vs. 3·6 years, $P < 0·01$). No other differences were found.

At pretest, 80·6% of included residents were female with a mean age of 83·3 years and mean illness duration of 5·9 years. The majority (55·6%) were diagnosed with Alzheimer's disease. On average, the Care Dependency Score was 28·2 on a scale from 15 to 75 (the higher the score, the less the dependency on nursing care). There were no statistically significant differences in background characteristics between the experimental and control groups at baseline. More details about residents' background characteristics are available from the first author.

Effects on quality of nursing assistants' behaviour

Table 5 gives the adjusted estimated means and change scores from the experimental and control groups. On the measures of PPW, negative change scores indicate a change in favour of the experimental group. On the measures of MSP, positive scores indicate a change in favour of the experimental group.

Statistically significant treatment effects were obtained for all the PPW subitems as well as for the PPW total score. CNAs in the experimental group significantly improved on all PPW subitems, while CNAs from the control group showed no significant changes, except for 'respecting privacy'. As regards MSP, significant treatment effects were seen for the MSP total score and for eight of the 12 subitems. Three of these were the result of a decrease in CNA negative behaviours in the experimental group (i.e. 'ignoring', 'withholding' and 'testing knowledge'). Four were caused by increased CNA negative behaviours in the control group (i.e. 'infantilization', 'invalidation', 'imposition' and 'accusation') and one by a combination of improvement in the experimental group and deterioration in the control group (i.e. 'disruption'). 'Prejudice' showed a statistically significant effect within the experimental group, but a significant total change score was not reached. Post hoc analysis revealed an effect size of 0·66 for PPW (total score) and 0·52 for MSP (total score), which is in accordance with the intended effect size (d ¼ 0·50) in advance (Cohen 1988).

[TABLE 4]
[TABLE 5]

Use of sensory stimulation

The estimated mean number of explicitly offered sensory stimuli increased in the experimental group from 0·67 at pretest to 3·22 at post-test (change _2·55, P < 0·001). In the control group, there was no measurable change from pretest (0·44) to post-test (0·56) in the number of sensory stimuli used by CNAs (change _0·12, n.s.). Almost one-third of the sensory stimuli (30·0%) used at post-test in the experimental group were multiple sensory stimuli, mainly given by the CNA using body movement and/or using more than one sense organ at the same time. As regards singular sensory stimuli, the majority were visual (39·0%) or olfactory (31·8%). Visual stimuli used frequently included the explicit use of the mirror, talking about colours or the design of a resident's clothing or looking with the resident at something in the immediate environment, e.g. out of the window or at a photograph. As regards olfactory stimuli, CNAs were successful in stimulating residents by having them smell soap, cream, body-lotion, perfume or after-shave. Auditory stimuli (11·9%), mainly the use of individual music, and gustatory (0%) stimuli were observed less often. Tactile stimuli (17·4%) were noted in particular when a resident was encouraged to feel the heat of the water or the softness of towels, clothes and cuddly animals.

In addition to the methods of sensory stimulation during morning care mentioned above, CNAs in the experimental group appeared to take structural, individual precautions before starting morning care in half of the cases (n ¼ 32), usually as part of the snoezel care plan. These precautions involved waiting until residents woke up of their own accord (10·), the use of aromatherapy (8·), music beforehand (5·), the use of light (3·), hand massage beforehand (2·), having breakfast before getting washed and dressed (2·), extra heating in the room (2·) and using a doll (1·). Although some of these precautions, such as not waking up residents when they were still asleep, were usually part of the implementation changes, they were considered particularly important for these individual residents (e.g. noted in their care plan: 'Wait with morning care until Mrs X wakes up herself, and then start the care as soon as possible. When she has to wait too long, she gets angry'). In the control group, explicit precautions were only mentioned in one case at pretest (i.e. medication) and five cases at post-test (i.e. 2· having the resident sleep longer, 2· music, 1· breakfast beforehand). The experimental group reported aromatherapy at pretest once.`

DISCUSSION

The results of this study show that the implementation of snoezelen in dementia care effected positive changes on person-centred behaviour performed by CNAs during morning care. These

changes were measured 18 months after the start of implementation, indicating that CNAs adhered to the person-centred principles underlying snoezelen. In particular, positive behaviour of nursing assistants appeared to lead to change. CNAs applying a snoezel approach demonstrated significantly increased improvements with respect to their level of 'Positive Person Work' (total score) compared with those giving usual care. They also showed improvements on all PPW subitems, while those in the control group hardly showed changes. In addition, a statistically significant training effect was obtained for the level of 'Malignant Social Psychology' (total scale). The latter was not only caused by improvements in the experimental group, but also by deterioration in the control group. Last, the number of sensory stimuli offered explicitly increased in the experimental group when compared with pretest and the control group.

Our findings show that positive behaviour of nursing assistants was particularly amenable to change. The experimental group clearly improved on PPW, which has rarely been reported before. Previous research often focused on negative behaviour or 'personal detractors', i.e. short episodes of care which are thought to lead to a reduction in selfesteem for people with dementia (Brooker et al. 1998). These are examples of malignant social psychology (MSP) of dementia. In the current study, the baseline scores for MSP were rather good to very good in both the experimental and control groups (range 1·08–1·80 on a scale from 1 to 4) almost reaching a 'ceiling effect'. Contrary to our expectations, the control group showed deterioration on four MSP subitems and on MSP total score. We have no clear explanation for this finding. Social desirability might have been an influence, especially at pretest when the video recording was something new. CNAs seemed to be more aware of undesirable negative behaviours than of desirable positive ones. At pretest, CNAs may have refrained more from negative behaviours because they were conscious of the camera. At post-test, they might have been more used to the video camera. Several authors have mentioned the potential bias of social desirability that might have influenced CNA performance during the observations. They concluded that the occurrence of performance bias in nursing research seems to be limited (Bottorff 1994, VanHaitsma et al. 1997, Caris- Verhallen 1999, Kruijver 2001). The CNAs in our study were given the opportunity to disclose their feelings directly after the video recording. They reported that they experienced some stress in advance but that, in general, the videotaped morning care reflected the normal situation. Given the convincing effects found, it does not seem very likely that the effects found, especially those on PPW, were all caused by social desirability factors on the outcomes.

Kitwood's approach has been influential in dementia care. The present study shows that the dialectical framework was useful for the first step of content validity of the scale, i.e. conceptualization of the instrument by translating the original items into an assessment scale and incorporating adaptations based on the pilot study. As a measure of the reliability of the instrument, we calculated Cronbach's alpha for the two subscales. The internal consistencies of the two subscales were high enough to use the measurement scale at group levels. To reach a final subscale score that was independent of the person assessing the video recordings, it was necessary that different raters interpreted the various items in the same way. Therefore, interobserver correlations were used to establish inter-rater reliability. Reliability at the item level showed moderate to substantial inter-rater reliability. Therefore, the item descriptions seemed to be suffi- ciently clear and understandable by raters. Recommendations for future research are additional tests on criterion-related validity, construct validity, intrarater reliability and test– retest reliability.

What is already known about this topic

- The quality of the relationship between nursing assistants and patients suffering from dementia is closely related to patients' functioning and behavioural symptomology.
- Snoezelen, or multisensory stimulation, is a psychosocial intervention that combines a person-centred approach with the integration of sensory stimuli in daily care to nursing home residents suffering from dementia.
- Most intervention studies put little emphasis on the adherence of nursing assistants to the principles underlying the intervention protocol.

What this paper adds

- The implementation of snoezelen in 24-hour dementia care effected positive changes on person-centred behaviour by nursing assistants; nursing assistants' beha-

Our results are in accordance with a previous, computerized, quantitative analysis of communication between CNAs and residents during morning care by using an adaptation of the Roter Interaction Analysis System (RIAS) (Roter 1989, Caris-Verhallen 1999). CNAs trained in snoezelen showed a statistically significant increase in the total number of verbal utterances (more social conversation, agreement, talking about sensory stimuli, information and autonomy). The duration of resident-directed gaze and affective touch also increased (van

Weert et al. 2005b), as well as the frequency of smiling. As this kind of analysis does not really give insight into how information was presented, in the present study we aimed to make an (more subjective) assessment of the quality of CNA behaviour to find out the extent to which CNAs had appropriate attitudes and were acting in a respectful and empathic way. In future, the instrument used in the present study might be used in daily practice or for research purposes, e.g. in participant observation. A major advantage of the instrument is that its administration is not very time consuming and is therefore less costly than other instruments, such as RIAS (Roter 1989) or Dementia Care Mapping (DCM) (Kitwood & Bredin 1992). The assessment instrument used in the present study could be completed within 5 minutes, after watching the video recording twice. RIAS observations took around six times the duration of the video recording. DCM involves making a series of detailed observations over a period of 6 hours in a care setting. The tool is basically a means to measure the level of well-being or discomfiture in people with dementia. As regards staff behaviour, DCM mainly records negative behaviours, i.e. interactions between staff and residents that are presumed to detract from well-being (Kuhn et al. 2000). Our instrument appeared to be especially useful in detecting changes in positive CNA behaviours. Although the instrument is limited to the assessment of the quality of nursing assistants' behaviours, it might be a practical tool for coaching and feedback of nursing assistants or other caregivers in dementia care. If person-centred care is to be a reality, methods are needed to evaluate the quality of care for people with dementia which can be used by staff to develop their care practice (Innes & Surr 2001). Our instrument seems to be appropriate for this goal.

Study limitations

A potential limitation was the choice to randomize nursing units within each nursing home instead of randomizing entire nursing homes. The alternative of randomizing groups to nursing homes also presents methodological problems, including the difficulty of finding nursing homes that are equivalent on all factors that might affect outcome (Burgio et al. 2000). To reduce contamination risk in the present study, included nursing homes signed a cooperative agreement, in which they promised that the control wards would not apply snoezelen care during the study period. .

Interviews with the head nurses of the control wards revealed that the control wards did not integrate the snoezel methodology structurally in daily care; nor do the results of the study indicate statistically significant improvements in the control group. Accordingly, no serious contamination effects are assumed to have occurred.

Although the multilevel model used for the effect study takes into account the data of completers (included in pretest and post-test) as well as non-completers (included in pretest or post-test), there might be conflicting findings in the patterns of improvement in both groups. Consequently, post hoc analyses were done including only CNA completers, but showed no contradiction with the multilevel results. The majority of the outcome measures still showed a significant treatment effect ($P < 0{\cdot}05$). Three subitems ('distraction', 'empathize' and 'accusation') showed a trend instead of a statistically significant effect ($P < 0{\cdot}10$). Only one subitem ('withholding') no longer reached a statistically significant level, which can be explained by reduced power.

CONCLUSION

The aim of the present study was to gain insight into the behavioural changes of Certified Nursing Assistants (CNAs), 18 months after the start of the implementation of snoezelen in 24-hour dementia care. CNAs succeeded in improving the quality of their behaviour during morning care by performing a more person-centred approach. It seems likely that this resulted in the improved levels of well-being for nursing home residents suffering from dementia as found in a parallel study (van Weert et al. 2005a). Many people with dementia do not receive specialist levels of care appropriate to their complex needs. This has implications with regard to the need for a comprehensive system of skills training, e.g. disseminating skills towards a good person-centred care, which may prevent the development of behavioural problems (Ballard et al. 2000). Previous research has shown that only those nursing homes that gave intensive support to the caregivers were able to effect enough change in clinical practice to improve resident outcomes significantly (Rantz et al. 2001). The intervention

offered in the present study included a well-evaluated education programme, with follow-up meetings and coaching or supervision. Other facilitating factors that were identified for the successful implementation of the new care model were the use of snoezel care plans, the increase of mutual consultations, structural evaluations, adaptations in daily schedules and investments in snoezel materials (van Weert et al. 2004). Such various and continuous efforts during the relatively long period of 18 months, seem to be an essential prerequisite in effecting positive changes at nursing assistants' level which, subsequently appeared to be a major condition for positive effects at the resident level.

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Author contributions

JvW and JB were responsible for the study conception and design. JvW, BJ and PS contributed to data collection and analysis. JvW drafted the manuscript. AvD, JB and MR made critical revisions to the manuscript for important intellectual content and provided supervision. PS provided statistical expertise. JB obtained funding for the study.

TABLES

Table 1 Original scheme and adapted scheme of Positive Person Work and Malignant Social Psychology

Positive Person Work (PPW)		Malignant Social Psychology (MSP)	
Dialectical framework*	**Adapted observation scheme**	**Dialectical framework***	**Adapted observation scheme**
Recognition	Recognition	Treachery	Treachery
Negotiation	Negotiation	Disempowerment	–†
Collaboration	Enabling	Infantilization	Infantilization
Facilitation		Intimidation	–†
Play	Play	Labelling	Prejudice
Stimulation	Stimulation	Stigmatization	
Celebration	–‡	Objectification	
Relaxation	–‡	Outpacing	Outpacing
Validation	Validation	Invalidation	Invalidation
Holding	–‡	Ignoring	Ignoring
		Banishment	
		Imposition	Imposition
		Withholding	Withholding
		Accusation	Accusation
		Disruption	Disruption
		Mockery	–†
		Disparagement	–†
–	Distraction§	–	Disabling§
–	Empathize§	–	Testing knowledge§
–	Making contact§		
–	Respecting privacy§		

*Reprinted from Kitwood 1997 (with kind permission of the Open University Press/McGraw-Hill Publishing Company).
†Excluded because not observed during pilot study.
‡Excluded because less applicable to morning care.
§Added because observed during pilot study.

Table 2 Design of the study

Month	Experimental group Six wards for elderly mentally infirm residents	Control group Six wards for elderly mentally infirm residents
1	Informed consent procedure	Informed consent procedure
2	*Pretest*	*Pretest*
	Measurements:	Measurements:
	Video recordings during morning care	Video recordings during morning care
	Medical background data by physician	Medical background data by physician
	CNA characteristics by questionnaire	CNA characteristics by questionnaire
3–20	*From pre- to post-test*	*From pre- to post-test*
	Implementation of snoezelen in 24-hour daily care:	Care-as-usual:
3	In-house training 'snoezelen for caregivers'	Continuation of the usual care at baseline
From 4	Start implementation in daily care	
From 4	Stimulus preference screening of residents	
From 6	Writing of snoezel care plans	
From 4	Study group	
	Supervision meetings:	
7, 14, 18	Follow-up meetings (3× per ward)	
12, 16	General meetings (2×)	
18	Informed consent procedure to include new residents	Informed consent procedure to include new residents
21	*Post-test*	*Post-test*
	Measurements:	Measurements:
	Video recordings during morning care	Video recordings during morning care
	Medical background data by physician	Medical background data by physician
	CNA characteristics by questionnaires	CNA characteristics by questionnaires

Table 3 'Positive Person Work' and 'Malignant Social Psychology' in people with dementia, adapted from Kitwood 1997 (with kind permission of the Open University Press/McGraw-Hill Publishing Company)

CNA behaviour	Description
Positive Person Work (PPW)	
Recognition	Acknowledging a man or women who has dementia as a person, knowing that person by name and affirm him/her in his/her uniqueness
Negotiation	Consulting the person with dementia about his/her preferences, desires and needs, rather then being conformed to others' assumptions
Enabling	Giving the resident the opportunity to take care of him- or herself as much as possible and just 'completing' the care when necessary. The caretaker takes notice of the possibilities of the resident, by which the actual interaction between caretaker and the person who needs care can be optimized
Play	Showing spontaneity and self-expression (an experience that has value in itself), making jokes, laughing with the resident
Stimulation	Providing sensory stimuli or sensual information, without the intervention of concepts and intellectual understanding; for example through music, aromatherapy or massage. The significance of this kind of interaction is that it can provide contact, reassurance and pleasure while making very few (cognitive) demands
Validation	Acknowledging the (subjective) reality of a person's emotions and feelings, and giving a response on the feeling level, without correcting the residents' reality. Validation involves accepting the subjective truth of a resident, attempting to understand a person's entire frame of reference even if it is chaotic or paranoid or filled with hallucinations
Distraction	Distracting a resident in a positive way by guiding the conversation away from something unpleasant for the resident or to take the residents' mind off things. The aim of distracting is to influence mood and behaviour of the resident in a positive way
Empathize	Accepting the feelings and emotions of a resident and showing warmth and affection to cover the needs of a resident
Making contact	Giving the resident attention as a person to explicitly make contact. Making contact means responding to what a resident indicates but also giving attention to a resident when he/she does not specifically asks for it
Respecting privacy	Treating a resident discreetly. Signs of respect of the privacy of a resident can be to close the door/curtains when a caretaker gives a resident a wash, not leaving a resident naked for an unnecessarily long period
Malignant Social Psychology (MSP)	
Treachery	Using some form of deception to mislead or manipulate a person, or force them into compliance
Infantilization	Treating a person very patronizingly, as a parent who is insensitive or insecure might treat a very young child
Disabling	Not allowing a person to use the abilities that he/she does have; failing to help him/her to complete actions that they have initiated. Not taking notice of the possibilities of a person
Prejudice	Not looking upon a resident and treating the resident as a human being or 'normal' person. Always thinking the resident is confused and does not understand anything. In the worst case, the resident is treated as an object, an alien or an outcast
Outpacing	Providing information, presenting choices, and so on, at a rate too fast for a person to understand; putting him/her under pressure to do things more rapidly than he/she can bear
Invalidation	Failing to acknowledge the subjective reality of a person's experience and especially what he/she is feeling
Ignoring	Carrying on (in action or conversation) in the presence of a person as if he/she is not there
Imposition	Forcing a person to do something, overriding desire or denying the possibility of choice on his/her part
Withholding	Refusing to respond to an ask for attention or to meet an evident need; for example for affectionate contact
Accusation	Blaming a person for actions or failures of action that arise from his/her lack of ability or his/her misunderstanding of the situation
Disruption	Roughly intruding on a person's action or inaction; crudely breaking his/her 'frame of reference'
Testing knowledge	Asking questions about (for a resident difficult) facts instead of trying to fit in the resident's environment

Table 4 Background characteristics of participating Certified Nursing Assistants (CNAs) by treatment group

	Experimental group		Control group	
CNA Characteristics	Pretest (n = 57)	Post-test (n = 60)	Pretest (n = 60)	Post-test (n = 61)
Gender: female [n (%)]	53 (93·0)	55 (91·7)	55 (91·7)	58 (95·1)
Age [years (SD)]	36·75 (10·7)	35·62 (10·7)	33·24 (9·4)	36·11 (9·9)
Hours employment per week [mean hours (SD)]	29·51 (10·9)	27·68 (7·5)	29·17 (7·4)	28·82 (7·5)
Experience in care of elderly mentally infirm residents [mean years (SD)]	8·17 (6·4)	8·23 (7·3)	7·42 (5·9)	8·98 (8·2)
Employed on this ward [mean years (SD)]	3·79 (3·9)	3·63 (3·2)	3·45 (3·7)	4·06 (3·0)
Position [n (%)]				
Team leader	4 (6·6)	4 (6·7)	6 (10·0)	5 (8·2)
Nursing assistant	50 (87·7)	50 (83·3)	45 (75·0)	48 (78·7)
Other (ward assistant, elder care helper)	3 (5·3)	6 (10·0)	9 (14·9)	8 (13·1)

To test the differences in background characteristics, t-tests and chi-square analysis were used. No statistically significant differences were found.

Table 5 Change in quality of behaviour as performed by Certified Nursing Assistants (CNAs) (estimated mean scores of multilevel analysis)

	Experimental group		Control group			
Outcome measures	Pretest [mean (SE)]	Post-test [mean† (SE)]	Pretest [mean (SE)]	Post-test [mean‡ (SE)]	Change score§	χ^2 (1)
Positive Person Work (0–30)¶	**11·93 (0·7)**	**21·24 (0·7)*****	**11·41 (0·7)**	**13·19 (0·7)**	**−7·53*****	**27·91**
Recognition	2·95 (0·1)	3·80 (0·1)***	2·95 (0·1)	3·08 (0·1)	−0·71***	16·25
Negotiation	1·97 (0·1)	3·22 (0·1)***	1·93 (0·1)	2·10 (0·1)	−1·08***	16·62
Enabling	2·26 (0·1)	3·48 (0·1)***	2·36 (0·1)	2·38 (0·1)	−1·20***	23·36
Play	1·67 (0·1)	2·76 (0·2)***	1·59 (0·1)	2·00 (0·2)	−0·68*	5·01
Validation	1·99 (0·1)	3·00 (0·2)***	2·11 (0·1)	2·26 (0·2)	−0·86**	7·96
Distraction	1·60 (0·1)	2·26 (0·2)***	1·42 (0·1)	1·36 (0·1)	−0·72**	7·30
Empathize	2·77 (0·1)	3·50 (0·1)***	2·56 (0·1)	2·76 (0·1)	−0·53**	7·39
Making contact	2·66 (0·1)	3·32 (0·1)***	2·52 (0·1)	2·73 (0·1)	−0·45*	6·36
Respecting privacy	2·99 (0·1)	3·80 (0·1)***	2·95 (0·1)	3·27 (0·1)*	−0·49*	6·10
Stimulation	1·10 (0·0)	2·13 (0·1)***	1·10 (0·0)	1·27 (0·1)	−0·85***	40·58
Malignant Social Psychology (0–36)¶	**5·70 (0·7)**	**2·98 (0·6)****	**4·01 (0·7)**	**6·03 (0·6)***	**4·73*****	**16·39**
Treachery	1·08 (0·0)	1·09 (0·0)	1·01 (0·0)	1·06 (0·0)	0·04	0·14
Infantilization	1·67 (0·1)	1·55 (0·1)	1·40 (0·1)	1·97 (0·1)***	0·70**	8·42
Disabling	1·44 (0·1)	1·25 (0·1)	1·44 (0·1)	1·55 (0·1)	0·31	1·66
Prejudice	1·51 (0·1)	1·03 (0·1)***	1·49 (0·1)	1·28 (0·1)	0·27	1·71
Outpacing	1·80 (0·1)	1·75 (0·1)	1·61 (0·1)	1·44 (0·1)	−0·11	0·16
Invalidation	1·72 (0·1)	1·41 (0·1)	1·42 (0·1)	1·99 (0·1)***	0·87***	14·12
Ignoring	1·80 (0·1)	1·16 (0·1)***	1·70 (0·1)	1·78 (0·1)	0·72**	10·08
Imposition	1·70 (0·1)	1·51 (0·1)	1·47 (0·1)	2·10 (0·1)***	0·82***	15·03
Withholding	1·46 (0·1)	1·05 (0·1)**	1·35 (0·1)	1·36 (0·1)	0·42*	4·82
Accusation	1·29 (0·1)	1·10 (0·1)	1·11 (0·1)	1·33 (0·1)*	0·40**	7·80
Disruption	1·34 (0·1)	1·16 (0·1)	1·12 (0·1)	1·28 (0·1)	0·35*	5·61
Testing knowledge	1·61 (0·1)	1·25 (0·1)**	1·42 (0·1)	1·53 (0·1)	0·48**	7·62

Mean, estimated mean score (multilevel analysis); SE, standard error; χ^2 (1), chi square (1 d.f.).
$^*P < 0{\cdot}05$; $^{**}P < 0{\cdot}01$; $^{***}P < 0{\cdot}001$.
†P values as compared to pretest E.
‡P values as compared to pretest C.
§The underlined scores indicate a statistically significant change in favour of the experimental group, meaning that the pre-/postchange in the experimental group is significantly different from the pre-/postchange in the control group.
¶The underlined score indicate the most favourable score for the scale. Subitems range from 1 to 4. To rate the total score, the items were first recoded to 0–3.

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