Chapter 7

Staff-resident interactions in long-term care for people with dementia: the role of meeting psychological needs in achieving residents' well-being

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Abstract

Objectives: The aim of this study is to explore the extent to which staff-resident interactions address or undermine residents' psychological needs and how such interactions are associated with residents' well-being.

Method: Data on staff-resident interactions and residents' well-being were collected for 51 residents from 9 long-term care settings using Dementia Care Mapping (DCM). DCM yields a count and detailed descriptions of staff-resident interactions that either address (personal enhancers - PEs) or undermine (personal detractions - PDs) residents' psychological needs, and every 5 minutes scores for each residents' mood and engagement (ME-value). The relationship between PEs and PDs and well-being was analysed by studying residents' ME-values before and 3 time frames after a PE or PD occurred.

Results: There were 76 PEs and 33 PDs observed. The most common PEs were those addressing psychological needs for comfort and occupation. Yet residents' well-being increased most often after PEs that addressed residents' need for identity, attachment and inclusion. The most common PDs were those which undermined the need for comfort, inclusion and occupation. Residents' well-being decreased most often after PDs that undermined the need for comfort.

Conclusion: Increasing interactions which address residents' need for attachment, identity and inclusion and eliminating interactions which undermine residents' need for comfort may be particularly important in achieving resident well-being. In the long run, resident well-being could be achieved by staff availing of the opportunities to empower and facilitate residents, thus meeting their needs for occupation. These findings provide directions for training in person-centred care.

Introduction

The World Health Organization[1] has argued that there is an urgent need for action to improve the quality of care and services for people with dementia. In national dementia strategies across Europe, residential care for people with dementia is one of the core areas for improvement.[2] Many of these strategies seek to adopt person-centred approaches to care to ensure well-being1, often suggesting training in person-centred care as one approach.[3] In the UK the All Party Parliamentary Committee[4] have highlighted the skills gap in the dementia care workforce.

Enhancing well-being by meeting psychological needs is at the heart of the person-centred approach to dementia care.[5] Kitwood[6] proposes five psychological needs that are essential to experience well-being: the need for attachment, comfort, identity, inclusion and occupation, which come together in the central need for love. According to Kitwood, as the whole cluster of needs is met, a person may be enabled to experience well-being.[7] As well as recognising psychological needs as central to well-being, the person-centred approach underscores the difficulty people with dementia can have in meeting their own psychological needs. Kitwood stressed that the nature of cognitive and functional impairments associated with dementia (e.g. language, executive function) makes it difficult for people with dementia to meet their own needs.[6,8] In the last 15 years the association between unmet needs and behavioral distress has been well established. Algase and colleagues[9] (1996) introduced the concept of need-driven dementia-compromised behavior to explain the distress commonly associated with dementia, while[10] have demonstrated the ameliorating effects on behaviour of actively working with residents' sense of identity.

Person-centred care gives primacy to the role of the social environment and interpersonal interactions in meeting psychological needs and influencing well-being.[5,6,10] Social interactions which meet the needs of people with dementia are referred to as 'personal enhancers' (PEs)[11] and these comprise 'positive person work'.[6] Those that undermine needs are referred to as 'personal detractions' (PDs) which comprise a 'malignant social psychology'[6,12] resonating with Sabat's 'malignant positioning'.[13,14] It is important to note that malignant social psychology does not imply evil intent on the part of caregivers.

Given that care staff have the most one-to-one contact with residents, it is through their relationships and interactions with residents that they can meet or undermine residents' psychological needs and thus influence residents' well-being. Accordingly, in several models of person-centred gerontological nursing the relationship and interactions between nurses and the older person are considered key to successful care outcomes.[15]

The limited empirical work that focused on staff-resident interactions in relation to residents' well-being[16] confirm that interactions addressing psychological needs are related to higher levels of residents' well-being[17,18], and interactions undermining psychological needs to signs of distress, unhappiness and ill-being.[17,19] Yet a robust body of work consistently demonstrates that staff's work is primarily focused on personal care tasks such as dressing[20] and washing with little attention being paid to psychological needs.[17,21-23] At the same time, it has been found that residents with dementia in care homes are both capable of communication, and invest much effort in seeking to engage those around them.[23] In this context, the limited nature of interactions found in research is even more significant.

Taken together, these studies demonstrate the relationship between staff-resident interactions and well-being, but also show that positive person work or PEs are still limited. They do not, however, tell us whether interactions addressing or undermining particular psychological needs are more or less likely to be associated with residents' well-being than others, nor how often these particular needs are addressed or undermined. Addressing these topics will help to focus training in person-centred dementia care in order to achieve optimal resident well-being. Accordingly, this study will explore the following research questions:

1. How many PEs and PDs do residents experience in a six-hour period?
2. How are these distributed among the psychological needs?
3. To what extent are PEs which address different psychological needs positively associated with residents' well-being?
4. To what extent are PDs which address different psychological needs negatively associated with residents' well-being?

Design and methods

Setting and sample

The present study is part of a larger study of long-term care facilities providing long term care for people with dementia, an ongoing study which monitors the developments and variety in Dutch nursing home care for people with dementia, and its consequences for resident quality of life, quality of care, staff ratio and staff well-being (LAD-study: n=136). Data collection takes place every two years.[24] To gain more in-depth insight into facilitators and barriers of high quality dementia care a sub-study was conducted after the first measurement round. For this study, we sought to select 10 facilities based on the primary LAD-study outcomes (residents' quality of life, staff well-being, quality of care, person-centredness and use of physical restraints and psychotropic drugs, staff-to-resident ratio): both high (best performing practices) and low scoring (worst performing practices) facilities. This resulted in the participation of 6 high scoring and 4 low scoring long-term care facilities that are described in Table 1. The selection of these facilities has been described in detail elsewhere.[24] This study was conducted between December 2009 and March 2010.

Table 1. Description of participating facilities (n=10).[25]

No	Care type	Description
1	Traditional large scale nursing homes	Nursing home with 119 residents with dementia divided over 4 wards, with separate living rooms for approximately 11 residents per living room. There also live residents with other care needs in other departments of the facility.
2	Traditional large scale nursing homes	Nursing home with 10 floors with 6 wards for people with dementia (144 residents in total) and 6 wards for people with somatic problems. On each ward 24 residents live together, sitting in 2 living rooms during the day (12 residents each).
3	Nursing home ward in a home for the aged	Dementia care unit in home for the aged with 23 residents, divided over two living rooms of 11/12 residents each.
4	Care facility with 36 or more residents, where group living home care is provided	Care facility with 90 residents in total, with 15 apartments for 6 residents with dementia each, divided among 2 floors, nearby a large living facility for older people.
5	Care facility with 36 or more residents, where group living home care is provided	Care facility with two wards on the ground and first floor of a combined nursing home / home for the aged, residing 24 people with dementia per ward, divided in 2 living rooms for 12 residents.
6	Care facility with less than 36 residents, where group living home care is provided next to other types of care	Care facility for 24 people with dementia, with three apartments of 8 residents each. The arrangement is attached to a home for the aged.
7	Care facility with less than 36 residents, where group living home care is provided next to other types of care	A care farm with 18 residents with dementia living in three houses (six residents each) and three houses for residents with learning disabilities.
8	Care facility with less than 36 residents, where solely group living home care for people with dementia is provided	Care facility containing four apartments situated on 4 floors with 6 residents each (24 residents with dementia in total).
9	Care facility with less than 36 residents, where solely group living home care for people with dementia is provided	Care facility with 20 residents with dementia, living in 3 apartments of 7 and 6 residents.
10	Care facility with less than 36 residents, where group living home care is provided next to other types of care	A care facility with one apartment for six residents with dementia, and one for six residents with somatic complaints.

Measures

We used the 8th edition of Dementia Care Mapping (DCM)[11,12] to explore our research questions. DCM is both an observational tool and a practice development process.[12] Developed by Kitwood and Bredin[8] over 20 years ago as a methodology for achieving and embedding person-centred care it is used in clinical practice[26], for evaluation[27] and for research.[28] DCM yields both quantitative and qualitative data about the experience of care, from the perspective of the person with dementia. Training in use of the tool, including its coding frames, is available from the University of Bradford or its partners.

Resident well-being: Every five minutes the trained observer rates the resident's mood combined with their level of engagement with their environment along the following six point scale: -5 (very negative), -3, -1, +1, +3 to +5 (very positive). This is called the Mood and Engagement (ME) value. The value +1 is considered to be a neutral value in DCM. In this paper, we use the ME-values as a measure of residents' well-being.

Staff-resident interactions: The trained observer makes a detailed description of interactions which address or undermine psychological needs, noting the time the interaction started. In addition, the observer assigns one of 17 PE or PD codes to these interactions. Codes distinguish between which of the psychological need the interactions are addressing.

Procedure

One trained DCM mapper observed five or six residents over two periods of three hours (total of 6 hours) in communal areas of each of the 10 long term care facilities. The team managers of the wards where the observations took place selected a representative sample of residents – males and females, people with moderate and severe dementia, and those with different levels of distressed behavior.

Ethical considerations

On the day of observation, the observer introduced herself to everyone in the living room. In a way appropriate to each individual to be observed, the observer asked the resident for their assent to be observed. She asked each person if they had any objections to the observer sitting in the public areas and observing what goes on during the day. Furthermore, the research relied on process consent whereby consent is seen not just something obtained at the outset of the study but obtained throughout the study.[29] As such, if the participant appeared distressed or adversely affected by the observer's presence then that participant was not observed. Prior to the observa-

tion, informed consent was obtained from primary family caregivers of all residents that reside in the living room to be observed. The observational data the researchers obtained from the observers were anonymous.

The Medical Research Involving Human Subjects Act (WMO) does not apply to this study as residents were neither subjected to interventions nor had to obey behavioral rules in this study. Our study investigates usual daily practice in nursing home care for people with dementia. Furthermore, residents were not asked to participate in burdensome research methods. It was agreed to by a representative of the medical-ethics committee METiGG that the WMO does not apply and according to Dutch legislation, the study could be carried out without a formal review procedure by the committee.

Data analyses
DCM data from one of the 10 long-term care facilities, a high scorer on the selection criteria, participating in the sub-study were excluded because these data were gathered by a DCM mapper that did not meet the requirements to conduct DCM mappings for research purposes. The other 9 observations, mapping 51 residents in total, were conducted by one of two DCM mappers. Both had completed training as an advanced DCM mapper (in 2007 and 2008 respectively), with one going on to trainer level in 2009. Neither of these mappers are authors on this paper. Their inter-rater reliability met the requirements of the DCM guidelines for conducting DCM for research purposes (IRR>80%). Their IRR was obtained after mapping the same residents for two hours and comparing agreements and differences in coding and calculating a concordance co-efficient. Descriptive statistics using SPSS 19.0 were used in this exploratory study.

PEs and PDs: The number of (PEs and PDs interactions (research question 1) and the number and percentage of PEs and PDs per psychological need (research question 2) were studied using descriptive statistics.

Relationship between PEs, PDs and well-being (research question 3 and 4): Residents' ME-values in the time frame in which and for three time frames after a PE or PD occurred were studied. For every PE and PD the researchers scored if an increase, decrease or no change in ME-value occurred in any one of the next three time frames. This resulted in 3 possible scenarios following PEs and PDs:
1.   ME-value increased in next 3 time frames
2.   ME-values stayed the same in next 3 time frames
3.   ME-values decreased in next 3 time frames

When an increase or decrease in ME-value occurred in the first or second time frame after a PE or PD after which the ME-value returned to its original value (e.g. +1 before followed by +3, +3, +1) it was scored as an increase in ME-value. Large fluctuations in ME-values, such as -3 before followed by -5, -1, -3, did not occur within the three time frames studied.

We chose three time frames for two reasons. Firstly, the length of interactions was not recorded. Secondly, it is known that the information processing of people with dementia is impaired. Both facts imply that it is not clear if an influence on the ME-value of an interaction can be expected in the immediately next time frame, or in one, two or more time frames ahead.

Next, the percentage of PEs and PDs after which an increase, decrease or no change in ME-value was observed was calculated. To gain insight into whether inter-actions addressing or undermining particular psychological needs are more likely to be associated with residents' well-being, the same was done for the PEs and PDs per psychological need.

Results

Characteristics of living arrangement and residents
Characteristics of the nine long-term care facilities and their residents are presented in Table 2. The number of residents with dementia in the facilities range from 18 to 144. In total, 51 residents with dementia were observed in the nine facilities.

Table 2. Demographic characteristics of long-term care facilities (n=9) and residents (n=51).

	Mean (SD)	Range
Long-term care facilities characteristics		
Number of residents with dementia per setting	57.6 (49.2)	18-144
Number of residents per communal area	8.8 (2.7)	6 -12
Resident characteristics		
Percentage of female residents observed in facilities	86.3 (15.2)	60-100
Well-being score residents	1.2 (0.5)	-0.2-2.4[1]

[1] The ME-values observed during the mappings ranges from -3 - +5.

Number of personal enhancers and detractions (Research question 1)

There was considerable variability in the number of PEs and PDs that residents experienced in the long-term care facilities (Table 3). On average, residents experienced 1.5 PEs (SD: 1.8) each, ranging from 0 to 10 per resident. One third of the residents did not experience a PE during the two 3-hour blocks of observation. On average, residents experienced 0.6 PDs (SD: 0.8), ranging from 0 to 3 PDs per resident. Overall, almost half of the residents (44%) experienced a PD.

Table 3. Number of PEs and PDs per long-term care facility (n=9) and per resident (n=51).

	Mean (SD)	Range
Number of PEs per living arrangement	8.4 (4.3)	3 − 15
Number of PDs per living arrangement	3.7 (2.2)	0 − 7
Number of PEs per resident	1.5 (1.8)	0 − 10
Number of PDs per resident	0.6 (0.8)	0 − 3
	N	**%**
Number of residents with 0 PEs	17	33%
Number of residents with 1 PE	14	28%
Number of residents with 2 PEs	11	22%
Number of residents with 3 PEs	4	8%
Number of residents with 4 PEs	3	6%
Number of residents with 5 PEs	1	2%
Number of residents with 10 PEs	1	2%
Number of residents with 0 PDs	29	57%
Number of residents with 1 PD	13	26%
Number of residents with 2 PDs	8	16%
Number of residents with 3 PDs	1	2%

On average, 8.4 PEs (range: 3 to 15) and 3.7 PDs (range: 0 to 7) were observed during the two 3-hour blocks. In one of the facilities only PEs were observed. This was the facility with the highest scores on the LAD-study outcomes (best performing practice) on which the selection of the facilities was based. In two facilities more PDs than PEs were observed. Both had low scores on the LAD-study outcomes. One of these facilities was the one that had the lowest scores on the LAD-study outcomes (worst performing practice).

Number of personal enhancers and detractions per psychological need (Research question 2)

Table 4 shows that PEs most commonly addressed the needs for comfort (36%) and occupation (32%). Fewer PEs addressed the needs for attachment (7%), identity (13%) and inclusion (13%). Most PDs (Table 5) undermined the need for comfort (24%), inclusion (24%) and occupation (30%). PDs less often undermined the needs for identity (9%) and inclusion (12%).

PEs relationship to well-being and psychological needs (Research question 3)

Table 4 shows the number of PEs and the percentage of which were followed by an increase, neither increase or decrease, and decrease in well-being. Over half (53%) of PEs were followed by an increase in residents' well-being. Residents' well-being most often increased after interactions that addressed needs for attachment (80%), identity (70%) and inclusion (70%). PEs addressing the needs for comfort (54%) and occupation (32%) were less likely to be followed by increased well-being.

To better understand why some PEs were and others were not followed by increased well-being we studied the specific types of PEs, their descriptions and the residents' level of well-being before a PE occurred. We found that the PEs addressing the need for identity and attachment after which no increase of well-being was observed were mostly situations in which a resident was already in a positive mood or already engaged (+3) compared to the other situations in which residents mostly had a neutral well-being score (+1).

The PEs that addressed the needs for attachment, identity and inclusion and were followed by an increase of residents' well-being could be grouped into four circumstances: 1) interactions during which staff treated a resident with value and respect; 2) situations in which staff respected residents' worries and tried to reassured them by taking their worries seriously and giving them a genuine explanation; 3) interactions during which staff gave residents compliments about their appearance or for what they were doing; 4) situations in which staff were sharing humor with residents. The description below of a PE is an example of circumstance 2. After the interaction of Mrs. De Vries[b] with staff member Ramona, Mrs. De Vries's well-being increased (ME-value increased from +1 to +3).

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[b] All names have been changed to preserve anonymity.

Table 4. Number of PEs and relationship with residents' well-being.

| Psychological need | PEs | | Nr and % of PEs after which well-being increased, did not change or decreased | | | | | | |
| | | | Well-being ↑ | | Well-being No change | | Well-being ↓ | | Well-being Missing* |
	Nr	%	Nr	%	Nr	%	Nr	%	Nr
Comfort	27	36%	13	54%	10	42%	1	4%	3
Occupation	24	32%	7	32%	14	64%	1	4%	2
Identity	10	13%	7	70%	3	30%	0	0%	0
Inclusion	10	13%	7	70%	3	30%	0	0%	0
Attachment	5	7%	4	80%	1	20%	0	0%	0
Total	76		38	53%	31	44%	2	3%	5

* For some PEs the well-being score after the interaction occurred is missing, for example, because a resident left the communal area.

Table 5. Number of PDs and relationship with residents' well-being.

| Psychological need | PDs | | Nr and % of PDs after which well-being increased, did not change or decreased | | | | | | |
| | | | Well-being ↑ | | Well-being No change | | Well-being ↓ | | Well-being Missing* |
	Nr	%	Nr	%	Nr	%	Nr	%	Nr
Occupation	10	30%	0	0%	7	78%	2	22%	1
Comfort	8	24%	0	0%	4	50%	4	50%	0
Inclusion	8	24%	1	14%	5	71%	1	14%	1
Attachment	4	12%	0	0%	4	100%	0	0%	0
Identity	3	9%	0	0%	1	100%	0	0%	2
Total	33		1	4%	21	72%	7	24%	4

* For some PDs the well-being score after the interaction occurred is missing, for example, because a resident left the communal area.

Mrs. de Vries is expressing concern about red spots on her arms. Ramona explains that this could be caused by the blood thinners she uses. Mrs. de Vries asks her: 'Am I getting these?'. Ramona immediately checks Mrs. de Vries's file to see if it is correct. She comes back and, sitting at eye level, tells Mrs. de Vries that she indeed does use blood thinners.

PEs that addressed the need for comfort and were followed by an increase in well-being were often situations in which a resident was in a negative mood state. During the interaction staff acknowledge their concern and seek to soothe the residents by providing warmth and showing affection. This is illustrated by the following example in which Mr. Haselager has a negative mood until staff member Naomi comforts him (ME-value increased from negative, -1, to neutral, +1).

Mr. Haselager is making a moaning sound. Naomi immediately responds by walking towards him and tries to comfort him by wrapping her arm around him.

On the contrary, when staff showed affection towards residents who had a neutral or positive well-being, for example, by rubbing their cheek, arms or holding hands this was less often found to have a positive influence on their well-being.

PEs that addressed the need for occupation that were followed by increases in well-being were often situations in which staff members were working together with residents, encouraging or enabling them to participate in household activities or in helping others. For example, the well-being of both Mrs. De Vries and Mrs. Smit increased after a staff member (Sarah) interacted with them (ME-value increased for both from neutral, +1, to positive, +3).See this example below:

Sarah starts a conversation with Mrs. de Vries and Mrs. Smit about the plants and the amount of water they need. She asks for advice from Mrs. de Vries. Mrs. de Vries tells Sarah that the plants incline to be too dry since it is warm in the living room. Next, Sarah asks for advice from Mrs. de Vries neighbor as well. Mrs. Smit and water all the plants together afterwards.

PEs that addressed the need for occupation that were not followed by an increase in residents' well-being occurred in two circumstances: 1) situations in which staff were being thoughtful towards residents, for example, about the amount of food and drinks residents were having or whether they could reach objects; 2) interac-

tions during which staff were facilitating or enabling residents by providing the level of support required. The description below of a PE with Mr. Thijssen is an example of the latter circumstance after which Mr. Thijssens' well-being was not found to increase (ME-value stayed neutral, +1).

> Melanie, a staff member asks Mr. Thijssen if he would like some more tea. She says: 'you have not had that much to drink today. Would you like to try? I will help you. Try to grasp the cup, hold it firmly'. Melanie starts the movement and afterwards, Mr. Thijssen independently drinks his tea.

PDs influence on well-being and psychological needs (Research question 4)

A decrease of residents' well-being was observed after 24% of the PDs (Table 5). Residents' well-being decreased most often after PDs that undermined the need for comfort (50%). PDs undermining the other needs were less likely to be followed by a decrease of well-being: attachment (0%), identity (0%), occupation (22%) and inclusion (14%).

To better understand why some PDs were, and others were not negatively associated with residents' well-being we studied the specific types of PDs, their descriptions and the residents' level of well-being before a PD occurred. Further exploring the PDs after which residents' well-being decreased showed two situations that seemed to have a negative association with residents' well-being: 1) situations in which staff-members were outpacing residents; 2) situations in which staff were not complying with a resident's request for help or were over-riding or ignoring their request for help. After some of the latter situations residents' well-being did not decrease. On these occasions, residents were already showing small signs of negative mood (-1) before the PD occurred compared to the other situations in which residents mostly had a neutral well-being score (+1).

Most PDs after which no decrease of residents' well-being occurred were situations in which staff: 1) undermined residents' need for occupation by denying residents choice or when residents were moved without explanation; 2) undermined the need for attachment, failing to acknowledge the reality of the resident by making unpleasant remarks about or towards residents; 3) undermined residents´ need for inclusion by ignoring residents, carrying on in conversations or actions in the presence of residents as if they were not there. The following description is an example of situation 2 after which no decrease of Mrs. Haag's well-being was observed (ME-value stayed neutral, +1).

Mrs. Haag is concerned that she has to pay for her drink. Jan, a staff member tries to explain to her that it is for free. Mrs. Haag is not convinced. Jan walks away and says 'this penny is not going to drop today'.

Discussion

This exploratory study is the first to empirically investigate the number of PEs and PDs according to which psychological need was addressed or undermined, and their influence on residents' well-being. Most PEs addressed the needs for comfort and occupation. Fewer PEs addressed the needs for attachment, identity and inclusion. We found that not all PEs were followed by an increase in residents' well-being. Interactions which addressed residents' need for comfort and occupation were less likely to be followed by an increase in residents' well-being than interactions which addressed their need for attachment, identity, and inclusion.

Most PDs undermined the needs for occupation, comfort and inclusion. Fewer PDs undermined the needs for identity and attachment. Only a small number of the PDs were followed by a decrease in residents´ well-being. Interactions undermining residents' need for comfort were most likely to have a negative association with residents' well-being.

Our findings support the humanist and social constructionist theories of dementia[8,30] and underline the importance of person-centred staff-resident interactions in long-term dementia care. The PEs that were found to be positively associated with well-being – those addressing attachment, identity and inclusion – reflect the essence of person-centred care, which Kitwood[6] and Edvardsson and colleagues[16] refer to as 'to acknowledge the personhood of people with dementia'. These interactions can be assumed to increase residents' well-being by addressing Sabat's self 3[14] with its emphasis on sense of worth, achievement or pride, social roles and identities.

There are several possible explanations for the finding that some of the PEs, and in particular the PEs addressing the need for comfort and occupation, were not found to be positively associated with residents' well-being. An explanation could be that although psychological needs are assumed to be present in all human beings, the pattern of needs will vary according to personality, life history and cognitive impairment, as has been suggested by Kitwood.[6] When no direct increase of residents' well-being is observed after a PE, this could imply that this interaction was generally speaking person-centred, but did not meet the individual need of the resi-

dent at that time. For example, ethnographic observations of people with dementia[31] have shown that some people with dementia do not desire to be independent and reject opportunities for autonomy. This could explain why for some people PEs addressing the need for occupation, often implying empowering or facilitating residents to complete actions for themselves wherever possible, are not meeting a need and is therefore not increasing their well-being. This shows the importance of individualizing care and assessing residents' needs on a daily basis, core ingredients of person-centred care according to the VIPS framework.[32]

Another explanation, regarding interactions addressing the need for occupation, could be that empowering or facilitating residents to complete actions for themselves might be less likely to increase well-being in the immediate term, but may increase well-being in the longer run. For example, when a resident is constantly empowered and facilitated to do things and is thereby stimulated to preserve independence as far as possible, this could positively affect the functioning of the resident and his/her well-being. On the other hand, one would probably not be able to observe the direct effect of these separate actions.

Finally, regarding the need for comfort, an explanation could be that comfort could be referred to as a 'dissatisfier'[33], while the other needs are more likely to function as 'satisfiers'– occupation, identity, attachment and inclusion. Comfort being a 'dissatisfier' means that when the need for comfort is unfulfilled (PDs), this has a negative influence on people, while fulfilment of the need for comfort (PEs) does not often have a positive influence. In other words, PEs addressing the need for comfort are more likely to prevent ill-being instead of creating well-being. Accordingly, PEs addressing the need for comfort were only found to have a positive influence when residents were in a state of ill-being at the time the PE occurred. The suggestion that comfort might be a 'dissatisfier' is also supported by the finding that PDs which undermined the need for comfort were most likely to have a direct negative association with residents' well-being. This was especially true for interactions in which staff outpaced residents.

In contrast to PDs which undermined the need for comfort, PDs which undermined the other psychological needs could be seen as missed opportunities to enhance residents´ well-being rather than leading to decreased residents' well-being. Examples of such PDs are situations in which staff did not include residents in conversation or activities. Had residents been included they could have experienced a sense of achievement and agency.

It could also be that when these PDs occur frequently they result in increased residents' withdrawal and decreased well-being in the long run. Furthermore,

well-being did not always decrease when a PD occurred, rather residents' negative mood state was maintained. This most often happened when residents were already in a negative mood state (i.e. ME-value of -1). This finding is not a floor effect as ME-values can be as low as -3 or -5. As such, it is possible to interpret that the maintenance of a negative ME-value is a neutral outcome. Finally, for PDs after which no decrease of residents' well-being occurred, we can only conclude that while these interactions should theoretically undermine residents' needs, they may not be perceived as such by a resident at that time.

The finding that most PEs addressed the need for comfort may reflect the current skills set of healthcare staff. Possibly, because of the focus on instrumental, task-focused help with dressing, washing, eating and toileting, staff are better able to meet needs for comfort than for attachment, identity and inclusion. This confirms concerns regarding the general failure to recognize the persistence of self and identity in persons with dementia.[34] It could, also imply that, contrary to what Kitwood suggested[6], there might be a hierarchy of needs, as is proposed by Maslow[35] in his theory of human motivation. The psychological need for comfort strongly resembles the human need for safety, one of the needs lowest in the hierarchy of Maslow. Possibly, staff perceive that they have to address residents' need for comfort or safety first, before they can pay attention to higher order needs, such as the need for belonging, esteem and self-actualization. When one of the residents is not comfortable, staff might find it difficult to shift attention to the higher order needs of other residents. However, attention for these higher order needs is important since observational studies showed that even individuals with dementia who are severely impaired have higher order needs, such as those for social contact.[36] Our study confirms that attention for these 'higher order needs' is especially likely to have a positive association with well-being.

Limitations

The findings of this study need to be considered within the context of several methodological limitations. First, our sample was rather small and only describes care practice in a limited number of long-term care facilities. However, this study was not meant to provide a representative overview of interactions in nursing home care, but to explore variation in PEs and PDs and the extent to which they are associated with residents' well-being. Consequently, the number of interactions observed per psychological need was limited as well, in particular for the PDs. For this reason, it was not possible to use statistics to test the extent to which PEs or PDs influence well-being and if interactions addressing or undermining particular psychological

needs are more likely to influence residents' well-being than others. Furthermore, the number of PDs undermining some of the psychological needs (eg. identity and attachment) were very low. This makes the comparison of the percentages of PDs after which a decrease of well-being occurred purely exploratory. As such, while several suggestions can be made for further research, no definitive conclusions can be drawn from these findings. Second, the environment influencing residents' well-being is more than the staff-resident interactions. It cannot be ruled out that other things happening around residents, such as interactions with other people – not measured in this study – might have played a role. Third, the choice to study the well-being score of the resident in the next 3 time frames after the interaction occurred could be challenged.

Future research
Identifying staff interactions which address particular psychological needs and examining their influence on residents' well-being would benefit from a prospective design with a larger sample. In addition, more detailed data about the interactions could be gathered. Firstly, future research should also record the time the interaction ended to gain insight into the duration of the interactions. Secondly, recording all interactions that occur, not only the PEs and PDs, would enable researchers to calculate the proportion of interactions that addressed or undermined residents' psychological needs out of all the interactions observed. Thirdly, with a larger dataset we will be able to study the probabilities of increased or decreased well-being in the time frames following the interaction (whether PE or PD) and how long this level of well-being maintained and if it leads to continued interaction. Finally, with a larger data set we could identify how often the three different kinds of increases of well-being after PEs we observed occur: from neutral (+1) to positive (+3), from negative (-1) to neutral (+1) and from negative (-1) to positive (+3).

A qualitative ethnographic study would allow for a more detailed understanding of individual differences in the pattern of psychological needs and response to care staff interactions. This would be a more appropriate research design to ensure a more individualised approach to research the residents' experience of care interactions. Such an approach might use semi-structured interviews with key informants alongside observational data to provide a rich description of individual differences in psychological needs and the extent to which particular interactions meet or fail to meet these.

Implications for training and education

This study lends further support to calls to focus on skills development and skills gaps to improve staff-resident interactions and to thereby improve quality of care. The need for specific person-centred dementia-care training for all staff working with older people has also been acknowledged.[4,37] Our study confirms the need for such training, even in The Netherlands where its vocational training for care workers has a good reputation but is still primarily focused on clinical rather than psycho-logical care topics.[38]

As has been stated before[23,39], training for staff should include promoting and supporting communication, preparing them to better relate to people with dementia and to promote a sense of identity in the daily life of persons with dementia. Our study suggests that training should in particular focus on stimulating interactions and providing directions on how to address residents' needs for identity, attachment, inclusion and by preventing undermining residents' need for comfort by outpacing them. But first of all, it seems important to raise staff' awareness of the influences of their behaviour on residents' well-being and the opportunities that occur during the day to make a difference for residents with dementia.

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