



ELSEVIER

Contents lists available at ScienceDirect

Geriatric Nursing

journal homepage: www.gnjournal.com

Featured Article

Nursing aides' mentalization, expressed emotion, and observed interaction with residents with dementia: A quasi-experimental study

Liora Cohen, MA^{a,*}, Efrat Sher-Censor, PhD^b, David Oppenheim, PhD^b, Ayelet Dassa, PhD^c, Liat Ayalon, PhD^d, Yuval Palgi, PhD^a^a Department of Gerontology, University of Haifa, Haifa, Israel^b School of Psychological Sciences and the Center for the Study of Child Development, University of Haifa, Haifa, Israel^c Music Department, Bar-Ilan University, Ramat-Gan, Israel^d Louis and Gabi Weisfeld School of Social Work, Bar-Ilan University, Ramat-Gan, Israel

ARTICLE INFO

Article history:

Received 22 December 2021

Received in revised form 8 March 2022

Accepted 10 March 2022

Available online 1 April 2022

Keywords:

Dementia
Expressed Emotion
Long-term care
Mentalization
Nursing aides

ABSTRACT

This study examined the associations between nursing aides' mentalization, expressed emotion, and observed sensitivity towards their residents with dementia. The study also explored whether nursing aides' mentalization and expressed emotion are relational constructs that vary with residents' characteristics and behavior. To assess mentalization and expressed emotion (i.e., criticism and positive comments), twenty nursing aides provided "Three Minutes Speech Samples" regarding two residents, one nominated by the head nurse as "difficult", and one nominated as "easy". Next, nursing aides were videotaped interacting with each of the two residents to assess their sensitivity and residents' engagement. Findings indicated that nursing aides' mentalization and positive comments were associated with their sensitivity. Nursing aides' mentalization and positive comments did not vary with residents' "easy" versus "difficult" nominations, but they were associated with residents' engagement. Results suggest training and supervision programs should involve efforts to improve nursing aides' mentalization skills and their ability to perceive their residents positively.

© 2022 Elsevier Inc. All rights reserved.

Introduction

Nursing aides are considered "the front-line" of the caregiving workforce in long-term care facilities for residents with dementia.¹ Although they receive limited training, nursing aides have the most frequent contact with the residents. They are expected to attend to residents' complex needs and carry out intimate care, such as bathing, dressing, and feeding.^{2,3} Thus, nursing aides are likely to develop personal relationships with their residents.

The person-centered care approach emphasizes the importance of the quality of relationships formed between professional caregivers and residents with dementia for the residents' wellbeing. It is recommended that caregivers respond sensitively to their residents. Caregivers' sensitivity is defined as recognition of the social and physical needs of the residents and responding to them in attuned and appropriate ways.^{4–6} The sensitivity of nursing aids towards residents with dementia may be challenged because residents are limited in communicating their needs and tend to show neuropsychiatric symptoms, such as agitation and aggression.⁷ Nevertheless, few observational studies have shown that the nursing staff can show sensitivity

towards their residents and documented the associations between sensitivity and residents' wellbeing. Relaxed and flexible behaviors toward residents during care tasks were associated with residents' calmness and cooperation^{8,9}; effective relational behaviors (i.e., flexible responses, verbal reassurance of the residents, and comforting touch) were associated with residents' positive mood and affect¹⁰; and a recent observational study showed that nursing aides' sensitivity was associated with higher engagement of the residents, as reflected in eagerness to follow the nursing aides' suggestions, expression of pleasure in interacting with the nursing aides, and initiating interactions with them.¹¹

In light of these findings, it is important to identify factors that underlie nursing aides' sensitivity. The person-centered care approach suggests caregivers' behavior may be shaped by their perceptions of the residents under their care, and in particular the ability to recognize each resident's unique characteristics and perspective.¹² However, research on this issue is scarce (although see^{13,18–20} for exceptions). To address this gap, the current study examined whether nursing-aides' mentalization and expressed emotion regarding their residents are associated with their sensitivity towards the residents.

Mentalization is an umbrella construct referring to the ability to reflect upon the thoughts, feelings, and motivations that underlie one's own behavior and the behavior of others. Mentalization is

*Corresponding author.

E-mail address: liorale.co@gmail.com (L. Cohen).

thought to promote flexible responses to changing interpersonal circumstances and facilitate sensitive caregiving.^{14,15} Studies support this notion in the context of family relationships as well as professional relationships between psychotherapists and clients and teachers and students.^{16,17} A few qualitative studies indicate that when nursing staff showed higher mentalization regarding their residents, they also demonstrated better daily practices.^{18–20} The current study aimed to extend this research by using a quantitative approach.

Another goal of this study was to ask whether mentalization is a trait-like characteristic, which is consistent across social partners, or whether it is relationship specific and dependent on the social partner. This was done by assessing nursing aides' mentalization with respect to two residents, one nominated as "difficult" and the as "easy". There is little research of this question in the context of parenting and romantic relationships, with mixed findings. Some studies showed that mentalization was lower when the care-receiver had communication challenges, or when there was lower familiarity with the partner,^{21,22} whereas others did not find significant differences.^{23,24} It is likely that interacting with residents who are more difficult to take care of would be stressful and lead to lower mentalization. It may also be more challenging for nursing aides to mentalize the inner world of residents with low levels of verbal communication, because mentalization would require an interpretation of non-verbal cues to understand residents' intention. In support of these notions, a few studies documented that understanding the communicative intentions of residents with advanced stages of dementia was challenging.^{18,25}

The second aspect of nursing aides' perceptions examined in the current study was their expressed emotion regarding the residents.²⁶ Numerous studies examined caregivers' expressed emotion towards their relatives with a wide range of mental conditions. This research indicated that expressed emotion including criticism (i.e., dislike, dissatisfaction, or disapproval of care-receivers' behaviors or characteristics), paucity of positive comments regarding care-receivers or the relationship, and emotional over-involvement (i.e., exaggerated emotional responses and over-protective and self-scarifying attitudes) were associated with caregivers' lower sensitivity, higher strain and depressive symptoms of caregivers, and higher level of psychopathology of the relatives.^{27–31}

Expressed emotion was also examined in the context of nursing staff-patient dyads in psychiatric wards and in teacher-student relationships. Criticism and paucity of positive comments, but not overinvolvement, were associated with the well-being of care-receivers.^{32,33} The lack of findings with emotional overinvolvement was interpreted as reflecting the lower emotional investment of professional caregivers in their care-receivers compared to the emotional investment of relatives.³⁴

Only one study examined expressed emotion of nursing staff in residential care for dementia, reporting that nursing staff's criticism was associated with elevated levels of burnout. The study did not examine the quality of interactions between nursing staff and residents.³⁵ Another study focused on perceptions of residents as resistant to care, a construct similar to expressed emotion, and showed that when nursing aides perceived residents as resistant, they showed poorer relational behaviors (e.g., lower synchronization with residents' pace).¹³ Hence, this study is the first to examine the links between expressed emotion and the sensitivity of nursing aides towards residents.

Expressed emotion is conceptualized as a relational construct that varies across relationships.²⁷ Several researchers suggested that care-receivers' characteristics, particularly severity of symptoms and impaired social functioning, might create a vicious cycle by elevating caregivers' expressed emotion, which in turn may elevate care-receivers' psychopathology.^{30,33,37} Others have suggested that relationship challenges, specifically difficulties in care-receiver-caregiver interactions, and not the severity of symptoms of the care-receiver, contribute to elevated expressed emotion.^{27,33,36,38} This study

provided an opportunity to reexamine both notions. The study explored whether mentalization and expressed emotion vary with the severity of residents' symptoms, including neuropsychiatric symptoms, as well as their behavior when interacting with their nursing aides.

The current study

This study is the first to assess quantitatively the associations between nursing aides' mentalization and expressed emotion (i.e., criticism and positive comments) on the one hand and their sensitivity toward residents under their care on the other. The study also aimed to deepen the understanding of mentalization and expressed emotion by examining whether they are trait-like and consistent across residents or relationship-specific and vary depending on residents' characteristics as well as behavior during interaction with their nursing aides.

To achieve these goals, the mentalization and expressed emotion of nursing aides were assessed based on their narratives regarding two residents, and they were observed interacting with these residents to assess their sensitivity. The study employed a quasi-experimental design, in which two residents were assigned to each nursing aide. One resident was nominated by the head nurse as "easy" to take care of and the second was nominated by her as "difficult" to take care of ("easy" resident and "difficult" residents herein). This nomination reflected the level of challenging behavior residents showed generally, not necessarily when interacting with the nursing aides. In addition, residents' engagement in the observed interaction with their nursing aides was evaluated. The study hypotheses were as following:

- (1) Nursing aides who showed in their narratives higher mentalization, less criticism, and more positive comments regarding a resident would show higher sensitivity towards that resident during their interaction.
- (2) Nursing aides would express higher mentalization, less criticism, and more positive comments when narrating regarding the "easy" resident compared to when narrating regarding the "difficult" resident.
- (3) Residents' higher engagement in their interactions with their nursing aides would be associated with nursing aides' higher mentalization, less criticism, and more positive comments.

Materials and methods

Participants

This report was part of a broader study on the relationship of nursing aides and residents with dementia in a long-term care-facility in Israel.¹¹ While sharing the same sample, each study addressed different questions and measures. The study took place in three wards of a long-term care-facility for older adults with dementia. The broad aim and procedure of the research were introduced to the nursing aides in these wards. The first 20 who volunteered to participate, took part in the study. All met the inclusion criteria of speaking Hebrew and working in the ward for at least three months to ensure sufficient acquaintance with the residents. Twelve (60%) nursing aides were female; their mean age was 48.50 years ($SD = 11.99$), and the average number of years of employment in this care-facility was 7.35 ($SD = 4.98$).

Forty residents participated in the study. The inclusion criteria were at least two months of hospitalization to ensure residents' adjustment to the facility, to allow sufficient acquaintance with the nursing aides, and to prevent disturbances to the adjustment process of new residents. Residents with late-stage dementia were excluded

Table 1
Descriptives of residents' background variables by "Easy" and "Difficult" statuses.

	"Easy" (n = 20)	"Difficult" (n = 19)	t / χ^2	p
	M (SD) / n (%)	M (SD) / n (%)		
Residents' gender				
Male	5 (12.82)	11 (28.20)	$\chi^2 = 5.01$.054
Female	15 (38.46)	8 (20.51)		
Residents' age	82.72 (8.20)	80.88 (8.81)	t(33) = 0.63	.527
Residents' years of hospitalization	2.79 (1.36)	2.90 (2.44)	t(33) = -0.17	.870
Residents' level of cognitive impairment ^a				
Severe	8 (20.51)	7 (17.94)	$\chi^2 = 0.01$.584
Mild-moderate	12 (30.76)	12 (30.76)		
Residents' level of functioning ^a				
Bed ridden	8 (20.51)	7 (17.94)	$\chi^2 = 0.01$.584
Needing support in some aspects of daily functioning	12 (30.76)	12 (30.76)		

Note. ^a based on residents' Mini-Mental Examination (MMSE)⁵⁶ and Activity of Daily living index (ADL)⁵⁷ scores (i.e., MMSE \leq 9 versus MMSE range = 10–24, and ADL $<$ 3 versus ADL \geq 3, respectively) provided by the medical staff of the care-facility.

from the study, as their communication impairment was severe, and to avoid interference to the intensive care these residents required. Invitations to participate in the study were consecutively sent to custodians of residents who were eligible to participate. After the provision of each resident's custodian consent, the head nurse classified the resident to either "easy to take care of" or "difficult to take care of". Residents were classified as "easy" based on ease of communication with the resident, low levels of neuropsychiatric symptoms, and cooperation of the resident in routine care tasks, and as "difficult" based on difficulty in communication, high levels of neuropsychiatric symptoms, and being uncooperative. The consecutive sampling continued until 20 "easy" and 20 "difficult" residents were recruited. A total of 75 custodians were contacted. Descriptive background data regarding the residents is presented in Table 1, which also shows that residents in the "easy" and "difficult" groups were not significantly different in any of the background variables.

Procedure

Data collection took place between March 2015 and May 2016. The research team randomly assigned to each nursing aide an "easy" resident and a "difficult" resident from their ward. The nursing aides were unaware of the criteria for choosing these residents. Data collection took place in a quiet room in the facility. After completing a demographic questionnaire, nursing aides were interviewed twice with the Three Minutes Speech Sample procedure,⁵⁴ once regarding the "easy" resident and once regarding the "difficult" resident. The order of the interviews was counterbalanced. Nursing aides completed self-report questionnaires (not included in this study) between the two interviews. Later during the same week, they were videotaped interacting with each of the two residents in a counterbalanced order. Nursing aides and the residents were asked to interact for 6 minutes in a way that would be enjoyable for both, using domino blocks and a booklet with a series of photographs. These props are recommended as appropriate and beneficial stimuli for residents with dementia,⁴⁰ and are routinely used in the participating care-facility. The interviewer and the nursing aides were blind to the "easy" versus "difficult" status of the residents.

Measures

Three minutes speech sample^{39,41}

Nursing aides were invited to speak for three uninterrupted minutes in response to the question: "What kind of person is (name of resident), and how do the two of you get along together?" The speech samples were audio-recorded and transcribed. Trained

coders, who did not collect the data and were blind to all data regarding the participants, rated the transcripts.

Three Minutes Speech Sample – Mentalization.^{42,43} This scale was adapted to the Three Minute Speech Sample from the *Insightfulness to the Care-Receiver's Motives Scale* of the well validated Insightful Assessment interview, which was developed in the context of parent-child relationships.^{42,44} The scale assessed nursing aides' ability to understand the inner world of the resident under their care and to discuss possible reasons behind the residents' or their own behaviors during daily interactions. The scale ranged from "1" (lack of mentalization; the nursing aide described the resident's and own behaviors without referring to underlying motives, feelings, or thoughts) through "3" (the nursing aide provided generic or bland explanations for the resident's or own behavior, for example, "she behaves like this because she is old") to "7" (high mentalization, the nursing aide tried to explain the motives, feelings or thoughts that may underlie the resident's behaviors or own behavior in the relationship with the resident; e.g., "As a woman who was a teacher and taught. . . she is in a very difficult situation. It often causes her to cry, to be depressed, to be stressed. . . In such moments it is very difficult to dialogue with her. . . it is better to leave her alone, she just goes to a corner until she calms down, and then she returns to herself"). A score of five and above suggests that the caregiver showed at least one good indicator of mentalization. To establish inter-rater reliability of the mentalization scale, 15% of the transcripts were rated by two coders. Inter-rater reliability based on Intraclass Correlation Coefficient (ICC) was .79.

Three Minutes Speech Sample – Expressed Emotion.⁴⁵ Nursing-aides' criticism and positive comments were coded using the well-known and validated *Expressed Emotion coding system*.^{27,45} **Criticism** was coded on a 3-point scale. A score of "0" was assigned when the nursing aide did not express negativity regarding the resident's behaviors or characteristics. A score of "1" was assigned when the nursing aide expressed one or more markers of dissatisfaction (i.e., was bothered or upset by the resident's behaviors or personality, e.g., "it's frustrating to deal with her"). A score of "2" was assigned when the first statement of the three minute-speech sample was a negative description of the resident; if the nursing aide-resident relationship was described as negative; or if the nursing aide expressed at least one critical remark (i.e., explicit resentment or disapproval of the resident, e.g., "he does the exact opposite of what he is told").

Positive Comments. In line with prior expressed emotion studies,^{46,47} positive comments included a frequency count of all positive statements expressed by the nursing aide regarding the resident, e.g., "he is a real gentleman". Statements in past tense (e.g., "she was a good woman before she became ill") were not considered as positive comments. An additional point was added to the frequency

count when the nursing aide described the current relationship with the resident as positive (e.g., “She and I get along very well”).

To establish inter-rater reliability, 20% of the transcripts were rated by two coders. ICC was .59 for criticism and .89 for positive comments. Inter-rater reliability of criticism was fair⁴⁸ due to low variability in this construct. As noted in previous research,⁴⁹ percent agreement is appropriate in such cases. In the current study, the percent agreement of criticism within 1-point was at the accepted level of 75%.⁵⁰

Nursing aides' sensitivity

This scale was taken from the *Emotional Availability Scales - 3rd Edition*.⁵¹ It tapped the extent to which nursing aides read residents' signals accurately and responded to them promptly and appropriately. The scale ranged from “1” (highly insensitive; the nursing aide was insensitive to the resident's signals; the nursing aide may have been harsh, passive/depressed, or inflexible, and expressed cold and mechanical affect) to “9” (highly sensitive, the nursing aide read the resident's signals accurately; the nursing aide responded flexibly and timely to the resident and expressed genuine positive affect and respect to the resident). Nursing aides' sensitivity was rated by trained coders who did not take part in data collection and were blind to all other data about the participants. Inter-rater reliability based on ICC was .84.

Residents' engagement

Residents' engagement was assessed using the following scales, also taken from the *Emotional Availability Scales - 3rd Edition*.⁵¹

Responsiveness. This scale reflected the extent to which residents responded to the bids of their nursing aids and showed positive affect towards them. The scale ranged from “1” (unresponsive; the resident's affect was emotionally shut down; the resident did not respond to the nursing aide's initiatives) to “7” (highly responsive; the resident showed eagerness to interact with the nursing aide and to follow the nursing aide's suggestions; the resident expressed positive affect when interacting with the nursing aide).

Involvement. This scale indicated the extent to which residents initiated interactions with their nursing aides. The scale ranged from “1” (uninvolving; little interest was expressed in the interaction with the nursing aide; the resident was not oriented toward the nursing aide, and rarely initiated new exchanges with the nursing aide) to “7” (highly involving; the resident initiated interaction with the nursing aide frequently by inviting the nursing aide to join the interaction as an audience or a source for support).

The responsiveness and involvement scales were rated by the same trained coders who rated the sensitivity of the nursing aides. Inter-rater reliability based on ICC was .90 for responsiveness and .76 for involvement. Responsiveness and involvement scores were highly correlated ($r = .66$, $p = .001$ for “easy” residents, and $r = .86$, $p = .001$ for “difficult” residents) and their mean was used as resident engagement scores.

Table 2

Comparison of “Easy” and “Difficult” groups.

	“Easy” (n = 20) M/SD	“Difficult” (n = 19) M/SD	Univariate F (1, 18)/partial η^2
Nursing aides' mentalization	3.53 (2.07)	3.47 (2.11)	0.02/.001 ^a
Nursing aides' criticism	0.55 (0.76)	0.42 (0.77)	0.06/.004 ^a
Nursing aides' positive comments	3.25 (3.37)	2.71 (2.40)	0.93/.049 ^a
Nursing aides' sensitivity	6.21 (0.81)	6.00 (0.98)	
Residents' engagement	4.77 (0.65)	4.27 (1.25)	

Note. ^a The overall MANOVA effect was not statistically significant, $F(3,16) = 0.37$, $p = .776$, partial $\eta^2 = .065$.

Data preparation and planned analyses

IBM SPSS version 20 was used for statistical analyses. Study variables were sufficiently normally distributed to render parametric statistics valid (i.e., skewness < 2, kurtosis < 6).⁵² A GLMM model examined the effect of nursing aides' mentalization, criticism, and positive comments on nursing aides' sensitivity. Mentalization, criticism, and positive comments were the independent variables, and the level of difficulty of the residents (i.e., “easy” versus “difficult”) was computed as a fixed effect. The dependent variable was nursing aides' sensitivity.

A repeated measure MANOVA analyses was used to examine whether nursing aides' mentalization, criticism, and positive comments varied as a function of the level of difficulty of taking care of the residents. The level of residents' difficulty (“easy” versus “difficult”) was treated as a within-subjects factor, and nursing aides' mentalization, criticism, and positive comments served as dependent variables.

Finally, GLMM analyses were conducted to examine whether residents' engagement in the interactions with the nursing aides was associated with nursing aides' mentalization, criticism, and positive comments. The dependent variables were mentalization, criticism, and positive comments. Residents' engagement was the independent variable, and the level of difficulty of the residents (i.e., “easy” versus “difficult”) was computed as a fixed effect.

Ethical approval and informed consent

Ethics approval was provided by the Institutional Review Board of University of Haifa (#080/15). Prior to data collection, nursing aides and residents' custodians completed a written consent form. Residents' informed assent was obtained orally, in accordance with their verbal ability.

Results

Preliminary analyses

Analyses were based on 20 nursing aides and 39 residents because one resident passed away after the nursing aide provided the speech sample and before the observational data were collected. See descriptive statistics regarding the study variables in Table 2.

Two significant associations were found between background variables and the study variables out of 60 that were examined (i.e., 6 study variables X 5 background variables X 2 levels of difficulty of residents). More years of employment as nursing aides was related to a higher level of mentalization regarding “easy” residents ($r = .458$, $p = .045$). Also, nursing aides tended more to express criticism when narrating regarding “easy” residents that had a mild to moderate cognitive impairment ($M = 0.83$, $SD = 0.83$) than when narrating regarding “easy” residents with severe cognitive impairment ($M = 0.12$, $SD = 0.35$), $t(15.90) = -2.61$, $p = .019$. Nursing aides' years of employment and residents' cognitive impairment were not controlled in the

Table 3
Generalized Linear Mixed Model for Nursing Aides' Mentalization and Expressed Emotion on Their Sensitivity.

	Nursing aides' sensitivity				
	b (SE)	t	p	95% CI for b	
				LL	UL
Nursing aides' mentalization	0.17 (0.06)	2.73	.010	0.04	0.30
Nursing aides' criticism	0.26 (0.17)	1.49	.151	−0.10	0.62
Nursing aides' positive comments	0.09 (0.03)	2.78	.009	0.02	0.15
Residents' level of difficulty ^a	−0.13 (0.22)	−0.60	.551	−0.59	0.32
Overall GLMM model	F (4,34) = 4.10		.008		

Note. CI = confidence interval; LL = lower limit; UL = upper limit.
^a Level of residents' difficulty was coded as follows: 1 = "easy" (n = 20), 2 = "difficult" (n = 19).

primary analyses, as they did not meet Bonferroni adjusted alpha of .0008, suggesting these effects may have been random.

Nursing aides' mentalization, expressed emotion, and sensitivity

As shown in Table 3, GLMM analysis indicated that higher mentalization and more positive comments were related nursing aides' higher sensitivity. Criticism was not significantly related to sensitivity. Results were consistent across residents' levels of difficulty.

Differences in nursing aides' mentalization and expressed emotion by residents' levels of difficulty and engagement

As can be seen in Table 2, repeated measures MANOVA indicated that nursing aides' mentalization, criticism, and positive comments, did not vary across "easy" and "difficult" residents. However, as shown in Table 4, GLMM analyses revealed that across "easy" and "difficult" residents, residents' higher engagement was related to nursing aides' higher mentalization and more positive comments. Finally, residents' engagement was not related to nursing aides' criticism. The overall model, the effect of residents' engagement, and the effect of level of difficulty were not statistically significant, $F(2, 36) = 0.06, p = .935$; $F(1, 36) = 0.01, p = .918, 95\% CI (-0.22, 0.20)$; and $F(1, 36) = 0.13, p = .716, 95\% CI (-0.49, 0.34)$, respectively.

Discussion

This study is the first to show quantitatively that nursing aides' mentalization and positive comments regarding their residents were associated with more sensitive behaviors toward the residents. These findings suggest that the ability to reflect on residents' inner world and interpret the motivations behind residents' behavior in a positive and empathic way, may enable nursing aides to read their residents' signals and respond appropriately and emphatically while interacting with them, as illustrated in appendix A. These results are consistent with few qualitative studies, which found that nursing staff who reflected upon the inner worlds of their residents with dementia showed positive communication cycles during dyadic interactions

with these residents.^{19,20} Together the findings provide support to the person-centered care approach, which suggests that positive communication between caregivers and residents is based on the caregivers' ability to take into consideration the uniqueness of the residents, their individuality, and their capabilities.⁵³

It was not easy for the nursing aides to describe their residents positively and reflect on their behaviors. Approximately half of the speech samples had no positive comments or only one positive comment. About half were rated as low on mentalization, that is, no explanations of residents' behavior were given, or the explanations were bland and generic, such as "he's just like everybody, his mood fluctuates" or "it's because of her Alzheimer", or "If you talk to him, ask him something, then he responds... He's not talking like us... you need to talk to them and then they answer". This is consistent with previous studies that documented that nursing staff tend to report difficulties in understanding their residents' behaviors and offer generalized interpretations of specific residents' signals.^{18,25} Thus, the current study emphasizes the importance of targeting the ability to perceive residents positively and reflect regarding their inner world in training and supervision of nursing aides.

The present study joins prior research that indicated expressed emotion depended on the social partner.^{27,33} It is also one of the few quantitative studies^{21,55} to document that mentalization is a relational construct. Nursing aides showed higher mentalization and expressed more positive comments when narrating regarding a resident who engaged with them more, namely was more eager to interact with them, responded more positively to their bids, and tended more to initiate interactions with them. Thus, residents' engagement may be important for enabling nursing aides to see the "person" beyond the impairments and difficulties, mentalize regarding the residents' behavior, and perceive them more positively (see examples in appendix B). Such perceptions, in turn, may facilitate nursing aides' sensitivity, which may increase further residents' engagement in the interactions with the nursing aides, and create positive communication cycles.

Mentalization and positive comments did not vary significantly with residents' "easy" and "difficult" nominations. Hence, this study provides evidence to the notion offered by some expressed emotion

Table 4
Generalized linear mixed models for residents' engagement on nursing aides' mentalization and positive comments.

	Nursing aides' mentalization				Nursing aides' positive comments					
	b (SE)	t	p	95% CI for b		b (SE)	t	p	95% CI for b	
				LL	UL				LL	UL
Residents' engagement	0.28 (0.13)	2.06	.046	0.01	0.55	0.75 (0.25)	2.92	.006	0.23	1.26
Residents' level of difficulty ^a	0.18 (0.34)	0.53	.595	−0.52	0.89	−0.25(0.57)	−0.44	.661	−1.42	0.91
Overall GLMM model	F (2, 36) = 2.14		.132			F (2, 36) = 5.37		.009		

Note. CI = confidence interval; LL = lower limit; UL = upper limit.
^a Level of residents' difficulty is coded as follows: 1 = "easy" (n = 20), 2 = "difficult" (n = 19).

researchers that it is not the “objective” characteristics of care-receivers, such as severity of symptoms, that color caregivers’ perceptions. Rather, caregivers’ perceptions may be shaped by care-receivers’ behaviors when interacting with the caregivers.^{27,33}

Unexpectedly, criticism was not significantly related to nursing aides’ observed sensitivity; it did not vary significantly with residents’ nominations; and it was not related to residents’ engagement. This may reflect the relatively low levels of criticism expressed by nursing aides. Previous studies that used self-report questionnaires reported that nursing staff perceived their residents more negatively than positively.^{13,54} The low level of criticism in this study may be because the nursing aides were asked to refer to a specific resident, whereas previous studies asked about the perception of residents with dementia in general. Notably, low levels of criticism were also documented in studies assessing expressed emotion of professionals, such as nurses narrating regarding their patients with psychosis and teachers narrating regarding their students.^{32,33,35} It is possible that professional caregivers are cautious and feel less comfortable to express their dissatisfaction and criticism towards their care-receivers, particularly in a research setting. Because there are only few studies regarding the links between expressed emotion of professional caregivers and their observed behavior,³⁷ more research on the meaning of criticism in professional caregiving relationships is needed. Together with the finding regarding positive comments, the results suggest that even if nursing aides do not express criticism regarding residents, if their perceptions of residents are low in positivity, they are likely to show lower sensitivity. This strengthens the call of Berry and colleagues,³³ in their review of research of nursing staff-patients’ relationships, to develop assessments of positive aspects of the relationships, as they may better index the emotional climate in long-term facilities.

Limitations

Alongside the strengths of this research, which included a quasi-experimental design and the use of multi-methods (i.e., narratives and observations) and multi-respondents (i.e., head-nurse, nursing-aides, and independent trained coders of narratives and observations), the following limitations should be acknowledged. First, the study was conducted in one long-term care facility in Israel, which provides high-level training and ongoing guidance to its nursing aides, and in which there was low turnover of these aides. A replication of the study in other facilities and in other countries is therefore needed. The second limitation is that all measures were collected concomitantly. Therefore, it is impossible to determine the direction of effects. Whereas it is possible that mentalization and positive view of the residents were shaped by residents’ engagement, and led to nursing aide’s sensitivity, it cannot be ruled out that nursing aides’ mentalization and positive view of residents contributed to their sensitivity, which in turn facilitated residents’ engagement.

Conclusions

This study highlights the importance of assessing nursing aides’ perceptions of the residents under their care, and in particular evaluating nursing aides’ mentalization and positive comments regarding the residents, for a more complete understanding of their behavior towards the residents and the processes that may underlie such behavior. The study also provides evidence that both mentalization and positive comments are relational constructs, that may be colored by the social behaviors of residents during interactions with the nursing aide rather than by “objective characteristics” of the residents.

These findings may guide clinical efforts to enhance person-centered care communication in long term care facilities. They suggest training and supervision of nursing aides should focus on increasing

their ability to mentalize on the inner world of their residents and to identify positive aspects of the residents and their relationships. The results also point to the reciprocal nature of the nursing aide-resident relationships and suggest that intervention programs in long term care facilities should target nursing aide-resident dyads rather than focus solely on the nursing aides as targets of intervention.

Funding

This work was supported by the Paulina and Mans Graubard Foundation Grant and conducted in collaboration with the Israeli medical center for Alzheimer’s. The funding source had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation and processing of the manuscript; and decision to submit the manuscript for publication.

Declaration of Competing Interest

None.

Acknowledgments

We would like to thank Tamar Har-Sagi for filming the interactions, Keren Klausner for her help in data collection, Ayala Barak and Tal Magal for their help in coding the Three Minute Speech Samples, and Haim Cohen for taking part in the statistical analyses. We are grateful to the nursing aides and residents for their participation in the study and to residents’ custodians for enabling their participation. We would like to thank also Mr. Nitai Eliash for giving us the privilege to carry out this study in the Israeli Medical Center for Alzheimer’s.

Appendix A. An illustration of the association of mentalization and positive comments with nursing aides’ sensitivity

The following example illustrates the mentalization and positive comments expressed by a nursing aide and their associations with his sensitivity. Jacob, the nursing aide of Debra, who was nominated as a “difficult” resident, said the following as part of his Three Minute Speech Sample. “In my opinion Debra is a very intelligent woman. You can recognize her past through the way she speaks, through her responses. . . It is clear that the dementia is very influential, yet her past is not erased. . . I personally get along with her very well, I always try to engage her in a dialogue by choosing topics that I know she likes to talk about. . . Debra’s physical appearance is very important to her, how to dress, she has an opinion about the clothes she wants to wear. . . It shows she is not completely detached, she recognises certain things, especially in clothing, in singing. She sits and sings with everyone, songs from her past. I am not just taking care of her physically, I share with her some of my knowledge in history”.

From this illustration we can see that Jacob expressed a high level of mentalization regarding Debra by showing an active process of observing her behavior and trying to take her perspective. In this part of his narrative, Jacob tries to explain the motive underlying Debra’s tendency to be opinionated about her cloths. Notably, being opinionated could easily be interpreted by a nursing aide as a negative and challenging characteristic of a resident. Jacob’s mentalization enables him to perceive Debra’s behavior positively. Additional evidence of Jacobs’ mentalization is reflected in his portrayal of how he deduces information regarding her interests based on “the way she speaks” and “her responses” to attune himself and facilitate their communication (i.e., choosing specific topics for their conversations). Jacob also received a high score in positive comments. He expressed positivity regarding Debra’s personality (“she is a very intelligent woman”) as

well as their relationship (“I personally get along with her very well”).

In the observed interaction with Debra, Jacob received the high score of 7 in sensitivity. Thus, it seems that the ability of Jacob to spontaneously interpret Debra’s inner world and relate to her positively when asked to narrate about her, enabled him during their interaction to read her signals and respond to them promptly, emphatically, and appropriately.

Appendix B. Illustrations of the association of residents’ engagement with nursing aides’ mentalization and positive comments

The following example is taken from the observed interaction between Esther the nursing aide and Boris, who was nominated as a “difficult” resident. At the beginning of the interaction Boris appeared restless and tried to get up from his chair. Esther tried to attract his attention gently. However, Boris did not calm down and he continuously mumbled to himself incoherent sequences of words. A first smile appeared on Boris’s face when Esther presented to him a picture of a child. This clear signal of interest may have encouraged Esther to continue and present other pictures of children and to mention Boris’s own children. As the interaction progressed, it was noticeable that Boris engagement increased. He turned his head towards Esther, initiating eye contact with her and subsequently talking to her. Although the content of Boris’s speech was not comprehensible, it seemed to be directed to Esther and expressed Boris’s interest in turn taking with her. Boris received a score of 4.75 in engagement, which reflects a moderate-high level.

When narrating regarding Boris in her Three Minute Speech Sample, Esther said the following: “It is hard to understand him. . . Sometimes he is nervous, not calm, wandering around. . . He is a bit aggressive, hitting. . . But when he suddenly looks in your eyes, you see a completely different person, he is a completely different person”. Hence, Esther’s narrative captured the main features of Boris’s engagement, which was evident in the observed interaction. Importantly, this section of Esther’s narrative demonstrates how Boris’s engagement (i.e., initiating eye contact) helps Esther to perceive him more positively.

Esther was also observed interacting with Rivka, who was nominated as an “easy” resident. In their interaction they shared pleasant moments looking together at pictures. Esther pointed at a picture of a child dressed nicely, and Rivka confirmed and smiled to Esther. The interaction was low keyed and calm. Rivka responded positively to Esther’s suggestions, by smiling, nodding, or apologizing that she does not recognize the persons in the pictures, however they were, in her opinion, ‘nice’ or ‘interesting’. Rivka received a score of 5.25 in engagement, which is considered high.

In her Three Minute Speech Sample regarding Rivka, Esther says the following: “Rivka is very gentle, polite, speaks calmly, she will not raise her voice, she does not shout. Just this morning I bathed her, she really enjoyed her shower, and after I helped her dry off she said to me: ‘Thank you so much, you’re so nice, such a sweetie’ and this is because I did not raise my voice, I treated her the same way she behaved, calmly, quietly. So really, really, I was moved”. This section of the narrative demonstrates how Rivka’s engagement (namely, showering calmly and thanking Esther) enabled Esther to mentalize about her own behavior and its effects on Rivka’s behavior, and to perceive Rivka and their relationship positively.

References

- Chamberlain SA, Gruneir A, Hoben M, Squires JE, Cummings GG, Estabrooks CA. Influence of organizational context on nursing home staff burnout: a cross-sectional survey of care aides in Western Canada. *Int J Nurs Stud*. 2017;71:60–69. <https://doi.org/10.1016/j.ijnurstu.2017.02.024>.
- Estabrooks CA, Squires JE, Carleton HL, Cummings GG, Norton PG. Who is looking after mom and dad? Unregulated workers in Canadian long-term care homes. *Can J Aging*. 2015;34:47–59. <https://doi.org/10.1017/S0714980814000506>.
- Chapman A, Law S. Bridging the gap: an innovative dementia learning program for healthcare assistants in hospital wards using facilitator-led discussions. *Int Psychogeriatr*. 2009;21:58–63. <https://doi.org/10.1017/S1041610209008680>.
- Jootun D, McGhee G. Effective communication with people who have dementia. *Nurs Stand*. 2011;25:40–47.
- Kitwood TM. *Dementia Reconsidered: The Person Comes First*. Open University Press; 1997.
- Williams KN, Perkhounkova Y, Jao YL, Bossen A, et al. Person-centered communication for nursing home residents with dementia: four communication analysis methods. *West J Nurs Res*. 2018;40:1012–1031. <https://doi.org/10.1177/2F0193945917697226>.
- Cohen-Mansfield J, Marx MS, Thein K, Dakheel-Ali M. The impact of stimuli on affect in persons with dementia. *J Clin Psychiatry*. 2011;72:480–486. <https://doi.org/10.4088/JCP.09m056940li>.
- Burgener SC, Jirovec M, Murrell L, Barton D. Caregiver and environmental variables related to difficult behaviors in institutionalized, demented elderly persons. *J Gerontol B Psychol Sci Soc Sci*. 1992;47:242–249. <https://doi.org/10.1093/geronj/47.4.P242>.
- Wells DL, Dawson P, Sidani S, Craig D, Pringle D. Effects of an abilities-focused program of morning care on residents who have dementia and on caregivers. *J Am Geriatr Soc*. 2000;48:442–449. <https://doi.org/10.1111/j.1532-5415.2000.tb04704.x>.
- McGilton KS, Sidani S, Boscart VM, Guruge S, Brown M. The relationship between care providers’ relational behaviors and residents mood and behavior in long-term care settings. *Aging Ment Health*. 2012;16:507–515. <https://doi.org/10.1080/13607863.2011.628980>.
- Cohen L, Sher-Censor E, Dassa A, Ayalon L, Oppenheim D, Palgi Y. Emotional availability in dyads of nursing aide-resident with dementia: Old tool, new perspective 2022;1-17. <https://doi.org/10.1177/14713012211065396>.
- Røsvik J, Brooker D, Mjorud M, Kirkeveid Ø. What is person-centred care in dementia? Clinical reviews into practice: the development of the VIPS practice model. *Rev Clin Gerontol*. 2013;23:155–163. <https://doi.org/10.1017/S0959259813000014>.
- Kada S, Nygaard HA, Mukesh BN, Geitung JT. Staff attitudes towards institutionalised dementia residents. *J Clin Nurs*. 2009;18:2383–2392. <https://doi.org/10.1111/j.1365-2702.2009.02791.x>.
- Fonagy P, Target M. The mentalization-focused approach to self pathology. *J Personal Disord*. 2006;20:544–576. <https://doi.org/10.1521/pedi.2006.20.6.544>.
- Reading RA, Safran JD, Rougier A, Mura JC. Investigating therapist reflective functioning, therapeutic process, and outcome. *Psychoanal Psychol*. 2019;36:115–121. <https://doi.org/10.1037/pap0000213>.
- Cologon J, Schweitzer RD, King R, Nolte T. Therapist reflective functioning, therapist attachment style and therapist effectiveness. *Adm Policy Ment Health Ment Health Serv Res*. 2007;44:614–625. <https://doi.org/10.1348/147608305x43784>.
- Reading RA, Safran JD, Rougier A, Mura JC. Investigating therapist reflective functioning, therapeutic process, and outcome. *Psychoanal Psychol*. 2009;36:115–121. <https://doi.org/10.1037/pap0000213>.
- Hansebo G, Kihlgren M. Carers’ reflections about their video-recorded interactions with patients suffering from severe dementia. *J Clin Nurs*. 2001;10:737–747. <https://doi.org/10.1111/j.1365-2702.2001.00558.x>.
- Hansebo G, Kihlgren M. Nursing home care: changes after supervision. *J Adv Nurs*. 2004;45:269–279. <https://doi.org/10.1046/j.1365-2648.2003.02888.x>.
- Kontos PC, Mitchell GJ, Mistry B, Ballon B. Using drama to improve person-centred dementia care. *Int J Older People Nurs*. 2010;5:159–168. <https://doi.org/10.1111/j.1748-3743.2010.00221.x>.
- Ansari S, McMahon C, Bernier A. Parental mind-mindedness: comparing parents’ representations of their children with autism spectrum disorder and siblings. *Res Autism Spectr Disord*. 2020;71:1–11. <https://doi.org/10.1016/j.rasd.2019.101491>.
- Meins E, Fernyhough C, Harris-Waller J. Is mind-mindedness trait-like or a quality of close relationships? Evidence from descriptions of significant others, famous people, and works of art. *Cognition*. 2014;130:417–427. <https://doi.org/10.1016/j.cognition.2013.11.009>.
- Kirk E, Sharma S. Mind-mindedness in mothers of children with autism spectrum disorder. *Res Autism Spectr Disord*. 2017;43:18–26. <https://doi.org/10.1016/j.rasd.2017.08.005>.
- Borelli JL, Slade A, Pettit C, Shai D. I “get” you, babe: reflective functioning in partners transitioning to parenthood. *J Soc Pers Relatsh*. 2020;37:1785–1805. <https://doi.org/10.1177/2F0265407520905641>.
- Cameron N, Fetherstonhaugh D, Bauer M, Tarzia L. How do care staff in residential aged care facilities conceptualise their non-verbal interactions with residents with dementia and what relevance has this for how residents’ preferences and capacity for decision-making are understood? *Dementia*. 2020;19:1364–1380. <https://doi.org/10.1177/1471301218798422>.
- Brown GW, Carstairs GM, Topping G. Post-hospital adjustment of chronic mental patients. *Lancet*. 1958;272:685–689. [https://doi.org/10.1016/S0140-6736\(58\)92279-7](https://doi.org/10.1016/S0140-6736(58)92279-7).
- Hooley JM. Expressed emotion and relapse of psychopathology. *Annu Rev Clin Psychol*. 2007;3:329–352. <https://doi.org/10.1146/annurev.clinpsy.2.022305.095236>.
- Safari R, Berry K, Wearden A. Expressed emotion in relatives of persons with dementia: a systematic review and meta-analysis. *Aging Ment Health*. 2017;21:113–124. <https://doi.org/10.1080/13607863.2015.1111863>.
- Hooley JM, Parker HA. Measuring expressed emotion: an evaluation of the shortcuts. *J Fam Psychol*. 2006;20:386–396. <https://doi.org/10.1037/0893-3200.20.3.386>.

30. Sher-Censor E. Five minute speech sample in developmental research: a review. *Dev Rev.* 2015;36:127–155. <https://doi.org/10.1016/j.dr.2015.01.005>.
31. Wong CSC, Zelman DC. Caregiver expressed emotion as mediator of the relationship between neuropsychiatric symptoms of dementia patients and caregiver mental health in Hong Kong. *Aging Ment Health.* 2020;24:1690–1699. <https://doi.org/10.1080/13607863.2019.1636200>.
32. Daley D, Renyard L, Sonuga-Barke EJS. Teachers' emotional expression about disruptive boys. *Br J Educ Psychology.* 2005;75:25–35. <https://doi.org/10.1348/000709904X22269>.
33. Berry K, Barrowclough C, Haddock G. The role of expressed emotion in relationships between psychiatric staff and people with a diagnosis of psychosis: a review of the literature. *Schizophr Bull.* 2011;37:958–972. <https://doi.org/10.1093/schbul/sbp162>.
34. Barrowclough C, Haddock G, Lowens I, Connor A, Pidliswyj J, Tracey N. Staff expressed emotion and causal attributions for client problems on a low security unit: an exploratory study. *Schizophr Bull.* 2011;27:517–526. <https://doi.org/10.1093/oxfordjournals.schbul.a006892>.
35. Tanaka K, Iso N, Sagari A, et al. Burnout of long-term care facility employees: relationship with employees' expressed emotion toward patients. *Int J Gerontol.* 2015;9:161–165. <https://doi.org/10.1016/j.ijge.2015.04.001>.
36. Levy E, Shefler G, Loewenthal U, Umansky R, Bar G, Heresco-Levy U. Characteristics of schizophrenia residents and staff rejection in community mental health hostels. *Isr J Psychiatry Relat Sci.* 2005;42:23–32.
37. Moore E, Kuipers L. Behavioural correlates of expressed emotion in staff-patient interactions. *Soc Psychiatry Psychiatr Epidemiol.* 1992;27:298–303.
38. Van Humbeeck G, Van Audenhove C, Pieters G, et al. Expressed emotion in staff-patient relationships: the professionals' and residents' perspectives. *Soc Psychiatry Psychiatr Epidemiol.* 2001;36:486–492. <https://doi.org/10.1007/s001270170013>.
39. Marshall VG, Longwell L, Goldstein MJ, Swanson JM. Family factors associated with aggressive symptomatology in boys with attention deficit hyper activity disorder: a research note. *J Child Psychol Psychiatry.* 1990;31:629–636. <https://doi.org/10.1111/j.1469-7610.1990.tb00802>.
40. van der Ploeg ES, Eppingstall B, Camp CJ, Runci SJ, Taffe J, O'Connor DW. A randomized crossover trial to study the effect of personalized, one-to-one interaction using Montessori-based activities on agitation, affect, and engagement in nursing home residents with dementia. *Int Psychogeriatr.* 2013;25:565–575. <https://doi.org/10.1017/S1041610212002128>.
41. Magaña AB, Goldstein MJ, Karno M, Miklowitz DJ, Jenkins J, Falloon IR. A brief method for assessing expressed emotion in relatives of psychiatric patients. *Psychiatry Res.* 1986;17:203–212. [https://doi.org/10.1016/0165-1781\(86\)90049-1](https://doi.org/10.1016/0165-1781(86)90049-1).
42. Koren-Karie N, Oppenheim D. *Insightfulness procedure administration and coding manual.* Unpublished manuscript. Haifa, Israel: University of Haifa; 2004.
43. Sher-Censor E, Yates TM. *Five-minute speech sample narrative coherence coding manual.* Unpublished manuscript. Riverside, CA: Department of Psychology, University of California; 2012.
44. Koren-Karie N, Oppenheim D. Parental insightfulness: Retrospect and prospect. *Attach Hum Dev.* 2018;20:223–236. <https://doi.org/10.1080/14616734.2018.1446741>.
45. Magaña-Amato A. *Manual for Coding Expressed Emotion From the Five-Minute Speech Sample: UCLA Family Project.* Los Angeles: UCLA; 1993.
46. Kaugars AS, Moody EJ, Dennis C, Klinnert MD. Validity of the five minute speech sample in families with infants from low-income backgrounds. *Infant Behav Dev.* 2007;30:690–696. <https://doi.org/10.1016/j.infbeh.2007.04.003>.
47. Sher-Censor E, Shulman C, Cohen E. Associations among mothers' representations of their relationship with their toddlers, maternal parenting stress, and toddlers' internalizing and externalizing behaviors. *Infant Behav Dev.* 2018;50:132–139. <https://doi.org/10.1016/j.infbeh.2017.12.005>.
48. Cicchetti DV. Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychol Assess.* 1994;6:284–290. <https://doi.org/10.1037/1040-3590.6.4.284>.
49. Syed M, Nelson SC. Guidelines for establishing reliability when coding narrative data. *Emerg Adulthood.* 2015;3:375–387. <https://doi.org/10.1177/2F2167696815587648>.
50. Stemler SE. A comparison of consensus, consistency, and measurement approaches to estimating interrater reliability. *Pract Assess Res Eval.* 2014;9:1–11. <https://doi.org/10.7275/96jp-xz07>.
51. Biringen Z, Robinson JL, Emde RN. Appendix B: the emotional availability scales (; an abridged infancy/early childhood version). *Attach Hum Dev.* 2000;2:256–270.
52. Curran PJ, West SG, Finch JF. The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychol Methods.* 1996;1:16–29. <https://doi.org/10.1037/1082-989X.1.1.16>.
53. Eggenberger E, Heimerl K, Bennett MI. Communication skills training in dementia care: a systematic review of effectiveness, training content, and didactic methods in different care settings. *Int Psychogeriatr.* 2013;25:345–358. <https://doi.org/10.1017/S1041610212001664>.
54. Brodaty H, Draper B, Low LF. Nursing home staff attitudes towards residents with dementia: strain and satisfaction with work. *J Adv Nurs.* 2003;44:583–590. <https://doi.org/10.1046/j.0309-2402.2003.02848>.
55. McMahon CA, Bernier A. Twenty years of research on parental mind-mindedness: empirical findings, theoretical and methodological challenges, and new directions. *Dev Rev.* 2017;46:54–80. <https://doi.org/10.1016/j.dr.2017.07.001>.
56. Folstein MF, Folstein SE, McHugh PR. Mini-mental state: A practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res.* 1975;12:189–198. [https://doi.org/10.1016/0022-3956\(75\)90026-6](https://doi.org/10.1016/0022-3956(75)90026-6).
57. Katz S, Ford AB, Moskowitz RW, Jackson BA, Jaffe MW. Studies of illness in the aged: the index of ADL: a standardized measure of biological and psychosocial function. *JAMA.* 1963;185:914–919. <https://doi.org/10.1001/jama.1963.03060120024016>.