The Quality of Interactions between Staff and Residents with Dementia in Nursing Homes

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Abstract

Background: Positive and effective staff-resident interactions are imperative to adequately assess and meet the needs of residents with dementia in nursing homes and optimize their quality of life.

Aim: The purpose of this study was to quantify, describe, and analyze the interaction between staff and residents with dementia in nursing homes, using the Quality of Interaction Schedule (QuIS).

Method: This descriptive analysis utilized baseline data from the first two cohorts in a randomized clinical trial including 341 residents from 35 nursing homes.

Results: 556 staff-resident interactions were evaluated, majority were positive (N=466, 83.8%) and the remaining were either neutral (N=60, 10.8%) or negative (N=30, 5.4%). The quality of interactions varied by interaction location, interpersonal distance, and resident participation.

Conclusion: Future research should focus on decreasing the negative/neutral interactions and explore staff characteristics (e.g. gender, level of experience) and facility factors (e.g. size, ownership) that might influence the quality of interactions.

Keywords

staff-resident interactions; communication; dementia; long-term care; nursing homes

Introduction

Dementia, a global cognitive impairment of memory, language, perception, and thinking affects approximately 5.7 million individuals in the United States[1] and as symptoms progress nursing home admission is likely, particularly for those with moderate to severe cognitive impairment. In 2014, approximately 1.4 million older adults were residing in nursing homes in the United States[2,3] and more than half had moderate (26.2%) to severe (38.6%) cognitive impairment.[4] For these residents, the nursing home is their home and

therefore, positive and effective interaction with the staff is fundamental for enhancing their quality of life.

Staff-resident interaction, defined as any verbal or non-verbal exchange between the staff and residents ranging from a brief smile or greetings in a hallway to an intimate personal care or one-on-one conversation in a private space,[5,6] is an integral part of daily life of nursing home residents with dementia. However, the dynamics of staff-resident interaction may be disrupted in dementia care because of various resident and caregiver factors. For residents, the ability to verbally express needs and accurately interpret the social and caregiving interactions from staff deteriorates as a result of neuropathological changes due to the underlying dementia and, psychosocial factors such as health, individual personality, and the environmental context. Residents with moderate to severe cognitive impairment or dementia have greater difficulty communicating their needs with caregivers and may not understand or recognize the purpose of the care interactions with staff. This may result in resistiveness or rejection of care.[7,8,9] For staff, resistiveness to care, and other common behavioral and psychological symptoms of dementia (BPSD; e.g. agitation, aggressiveness) makes it difficult to assess the needs of residents and appropriately assist with activities of daily living.[5,10,11] Additionally, staff are challenged by work load, time limitations, a focus on task-oriented care, and limited knowledge in dementia care and understanding of resident behavior.[10,12,13] The interlocking barriers associated with resident's behavioral problems and staff's organizational and training limitations impacts the quality of staff-resident interactions ultimately affecting the quality of life of the residents.

There is evidence to support the impact that staff interactions can have on residents. Specifically, interactions that include elderspeak (i.e. infantilization or baby talk) during verbal communication have been reported to disrupt nursing care by increasing residents' resistiveness to care (RTC).[9,14] Similarly, negative statements or instructions by caregivers were reported to significantly trigger resistive responses while positive statements/ instruction increase staff-resident collaboration during the delivery of physical care.[15] Positive and meaningful interactions of staff with residents also help manage depressive symptoms in dementia.[16,17] Bourgeois and colleagues examined the impact of communicative interactions on depression in dementia and informed that nurse aides that were trained on how to communicate with residents with cognitive impairment reported decreased depressive symptoms among these individuals.[16] Similarly, Tappen and Williams noted that staff trained to use therapeutic conversation (e.g., verbal encouragement and nonverbal gestures) led to a significant decline in depressive symptoms among residents.[17] In addition, existing evidence also suggests that the interaction between staff and residents are mostly positive[18] and the ability of direct care workers to consistently engage in such positive and meaningful social/caregiving interactions with residents has a significant positive effect on the quality of life of residents with dementia.[18–20] However, there is a dearth of evidence on the status of negative or neutral interactions in dementia care and the impact of various factors (e.g. resident cognitive status, interpersonal distance during interaction, and level of resident participation) on staff-resident interactions. The majority of the work exploring the impact of staff-resident interactions has focused on verbal interaction and communication. While verbal communication is one aspect of interaction, it does not provide a complete understanding of the overall interactions between residents and staff.

Residents with dementia tend to use non-verbal techniques (e.g. facial expression, touch and other cues with body movement) to interact with the staff and communicate their needs since there is gradual loss of verbal language production with the progression of the disease.[21,22] Staff lack adequate knowledge and skills to recognize and interpret these non-verbal interactions which further results in frustration leading to decreased job satisfaction, burnout and distress.[23] Hence, there is a growing interest and effort in improving both verbal and non-verbal interactions between staff and residents[21,22,24] and a comprehensive assessment of interactions between the staff and residents is integral to assess and promote these efforts. The goal of this study was to evaluate the quality of interactions between staff and residents with dementia in nursing homes using a comprehensive evaluation approach based on the Quality of Interaction Schedule (QuIS). The QuIS incorporates both verbal and nonverbal aspects of interactions and evaluates the type or quality of interaction between staff and residents with compromised cognition[6] Observations of interactions are completed and rated as positive social, positive care, neutral, negative protective, and negative restrictive (see Table 1 below).In addition, data on interaction characteristics such as interaction location, interaction situation, interpersonal distance, type of staff, and resident level of participation could also be recorded (see Table 2). The five categories to rate the type/quality of interactions were based off of earlier work by Clark and Bowling.[25] Clark and Bowling initially categorized the interactions between staff and residents as positive, negative and neutral in an observational study of quality of life of older adults in nursing homes and long stay wards.[6,25] This qualitative classification was expanded into five categories by Dean and colleagues after recognizing the important subgroups of positive and negative interactions.[6].

To continue to explore the relationships between staff and residents, the purpose of this study was to quantify, describe and analyze the quality of interactions noted between staff and residents with moderate to severe cognitive impairment and dementia in nursing home settings using QuIS. Establishing the ways in which staff are currently interacting with residents and understanding whether the quality of these interactions vary by resident cognitive status and interaction characteristics can help guide future interventions that might be needed to eliminate neutral and negative interactions and replace these with more positive ones. This study has following aims and hypotheses:

i.   To quantify and describe the quality of interactions between staff and residents with moderate to severe cognitive impairment/dementia in nursing homes.

     Hypothesis I: It is hypothesized that staff and residents will have more positive and less negative or neutral interactions.

ii. To analyze whether the quality of staff-resident interactions vary by resident cognitive status (moderate versus severe) and interaction characteristics (interaction location, interaction situation, interpersonal distance, type of staff, and resident level of participation).

     Hypothesis II: It is hypothesized that resident cognitive status and interaction characteristics will have a significant influence on quality of staff-resident interactions.

Methodology

This was a descriptive cross-sectional analysis of baseline data from the first two cohorts of an ongoing cluster randomized trial entitled, "Testing the Implementation of EIT-4-BPSD". Briefly, this trial focuses on person-centered management of the behavioral and psychological symptoms of dementia (BPSD) in nursing homes through the implementation of the evidence-based intervention known as EIT-4-BPSD, Evidence Integration Triangle for Behavioral and Psychological Symptoms of Dementia.[26,27] Details of the intervention have been previously published.[27]

Design and Sample

The sample for EIT-4-BPSD was selected from a list of nursing facilities in two states in the east coast—Maryland and Pennsylvania using cluster random sampling, with a goal of recruiting at least 50 facilities from both states. The facilities were invited to participate if they had 100 or more beds; were able to access email and websites via electronic devices like phone, tablet, or computer; agreed to actively partner with the research team in an initiative to change practice at their institution; and were able to identify a nursing staff as an internal champion to assist the research team with the implementation process. Once the facilities volunteered to participate, they were randomly assigned to 'intervention' and 'control' groups.[26,27]

The residents from the participating facilities were recruited upon meeting the following six criteria: 1) residing at the facility at the time of recruitment; 2) 55 years or older; 3) exhibited at least one BPSD in the past month; 4) has evidence of cognitive impairment as indicated by Brief Interview of Mental Status (BIMS); 5) not enrolled in hospice; and 6) not in the facility for short-stay rehabilitation care. Upon receiving the list of eligible residents from a designated staff member, residents were approached for recruitment with a goal of recruiting 12–13 residents per facility. The residents' ability to consent was evaluated using the Evaluation to Sign Consent (ESC) form.[28] If the resident was deemed unable to consent based on ESC, assent was obtained from the resident and consent for their participation was obtained from the Legally Authorized Representative (LAR). Of 740 residents approached for the study, a total of 341 were enrolled. Others were excluded due to resident inability to communicate (n=19, 3%); resident refusals to consent or assent (n=121, 16%); LAR refusals (n=57, 8%); LAR unavailability (n=169, 23%), and ineligibility reasons such as BIMS score greater than 12 meaning cognitively intact resident, resident enrolled in hospice care, consented resident death prior to baseline data collection, resident inability to communicate in English or too young to participate (n=33, 4%).[26,27] Many of these enrollees had a diagnosis of Alzheimer's disease or Dementia. Hence, this secondary analysis comprises of residents with cognitive impairment (mostly related to Alzheimer's/Dementia) and an evidence of BPSD.

Data Collection

Data collection for EIT-4-BPSD was completed by trained research evaluators with prior experience working with residents with cognitive impairment in a long-term care setting and their caregivers.

Measures

Demographics.—This study included demographic characteristics such as age, gender, race, marital status. The demographic information was obtained from resident charts/ electronic records at the facility.

Cognition.—Cognitive status was assessed by a research evaluator using the Brief Interview of Mental Status (BIMS)[29]. BIMS is a short cognitive screener which includes 3-item recall and orientation questions with scores ranging from 0 to 15 indicating severe impairment (0–7), moderate impairment (8–12), and cognitively intact (13–15) status.[29,30] Prior research has provided evidence of reliability and validity of BIMS. In a sample of 189 residents of a skilled nursing facility in Maryland, Mansbach and colleagues found adequate internal consistency for BIMS with Cronbach's alpha of 0.77 and the predictive utility with a sensitivity of 0.66 and specificity of 0.88 based on a correlation with standard measures for cognition.[31]

Staff-resident Interaction.—The quality of interaction between the staff and residents was evaluated using QuIS, Quality of Interactions Schedule. QuIS was developed by Dean and colleagues to assess the quality of interactions between staff and older adults in two newly developed domus units in England. The domuses were developed for long-term care of older adults with severe mental illnesses including dementia, physical/cognitive impairment, and those exhibiting behavioral symptoms related to mental illnesses.[6] Hence, it serves as a relevant measure of quality of interactions between staff and residents with cognitive impairment or dementia in long-term care settings.

Table 2 provides an overview of QuIS items. The first part of QuIS collects information on descriptive aspects such as interaction location, interpersonal distance, interaction situation, type of staff or person(s) resident is interacting with, and the level of participation of the resident (active versus passive). The second part includes the data on the quality of staff-resident interactions. After observing an interaction between a staff and a resident for approximately 15 minutes, the evaluator codes the interaction as 'positive social', 'positive care', 'neutral', 'negative protective', or 'negative restrictive' (Table 1). The QuIS form has instructions and examples for each of these five types/categories to assist the evaluator in coding. Since development QuIS has been tested and used in both acute and long-term care settings in England and other countries.[6,8,32,33] Prior testing demonstrated good interrater reliability (Cohen's kappa > 0.7) for both observation technique and the coding categories of QuIS.[6] Additional testing demonstrated a close agreement between observers (Intraclass correlation coefficient (ICC) = 0.97) and moderate to substantial test-retest reliability (Cohen's kappa = 0.53–0.62, absolute agreement 73%).[32] In the current study there was evidence of inter-rater reliability based on a correlation of.98 for the QuIS when completed by 2 evaluators.

Observation using QUIS.—Each staff-resident interaction was observed for approximately 15 minutes using QuIS. Although each individual was observed for a single 15-minute period, multiple types of interactions could be recorded per observation. For example, for the same 15-minute observation resident A could have only one type of

interaction (e.g. 'positive care') with staff while resident B could have two types of interaction (e.g. 'positive social' and 'positive care') present. Hence, the total number of interactions recorded could be greater than the number of residents. The observation was considered to begin the time the research evaluator noted any verbal or non-verbal exchange between staff and the resident. The pair was then followed for 15 minutes. The participation was considered 'active' when resident demonstrated interest and attention towards the interaction initiated by/with the staff through action or speech, and 'passive' when the resident did not demonstrate any interest and attention in the interaction. Except for a few cases, residents were mostly 'receivers' meaning the interaction was mostly initiated by staff. To capture variations in interactions by 'event' or 'time', the research evaluators scheduled observation at different events and time periods. For example, some residents were observed in the morning and lunch hours while some were observed post lunch or in the afternoon during social activities. Permission was sought from staff and resident to follow interactions in certain areas (e.g. resident rooms). Any disagreement or other issues during observation and overall data collection were discussed at monthly check-in meetings or directed to the research team through email.

Data Analysis

Analyses were done using Statistical Package for the Social Sciences, SPSS 24.0. Descriptive statistics were used to report participant demographics and the interaction characteristics including interaction location, interaction situation, the interpersonal distance, person(s) resident is interacting with (i.e. type of staff), and the level of resident participation. The quality of staff resident interactions was also evaluated by computing frequencies and percentages for each type of interaction. The total number of interactions observed was calculated by adding up the frequency of each type of interaction. Positive social and positive care interactions were summed to calculate the total number of positive interactions for the sample. Similarly, negative protective and negative restrictive interactions were summed to calculate the total number of negative interactions.

Following descriptive statistics, logistic regression was used to examine the influence of resident cognitive status and interaction characteristics on staff-resident interactions with the resident demographics (age, gender, race, and marital status) as covariates. There were two outcomes to be quantified—the 'positive' and the 'negative or neutral' interactions. Given the low frequencies, 'neutral', 'negative restrictive', and 'negative protective' interactions were recoded into "negative or neutral" if either one was present. Following this, 'positive social' and 'positive care' were recoded into "positive" if either one was present. In regard to predictors, the *interaction location* was recoded into two variables 'private area' (e.g. resident room, bathroom etc.) and 'common area' (e.g. living room, dining, hall etc.); *interaction situation* was dichotomized into 'care-related versus other'; the *interpersonal distance* was also dichotomized into 'less than 30 versus greater than 30 inches'; and *type of staff i.e. person(s) resident is interacting with* was recoded into 'nursing' and 'other' (e.g. activity staff, support staff etc.) on conceptual basis and frequencies. Prior to exploring the possible associations, data was checked for strange values, miscoding, missing values, as well as any violation of assumptions of logistic regression. Since there was a concern related to multicollinearity between 'common area' and 'private area' (r=−.98, p<.001) and

'nursing' and 'other' (r=−.93, p<.001), only 'private area' was included for *interaction location* and 'nursing' for *type of staff* in the model for each 'positive' and 'negative/neutral' interactions.

Results

Resident Characteristics

Table 3 illustrates the descriptive characteristics of the study participants. The mean age of the residents (N=341) participating in the study was 82.6 years (SD=12.4) and most were female (n=231, 68.3%). The majority of the residents were Caucasian (n=250, 74.0%) and the rest were mostly African American (n=86, 25.4%). While more than half of the residents were widowed, divorced or separated (n=189, 57.1%), a fifth were unmarried (n=68, 20.5%) and less than a fifth were married (n=55, 16.6). In regard to cognitive status, the majority (n=259, 78.0%) of the residents participating in the study had severe cognitive impairment based on Brief Interview of Mental Status (BIMS). The mean BIMS score was 4.45 (SD=3.53).

Characteristics of Staff-Resident Interactions

As shown in table 4, the majority of the interactions occurred in the resident's room (n=144, 41.6%) or the dining area (n=118, 34.1%) and the rest occurred either in the hall (n=32, 9.2%), living room (n=15, 4.3%) or some other areas (n=37, 10.7%) in the facility such as the nurses station, porch area, dens, bathroom, and tub/shower room. Most of the interactions were care-related (n=250, 76.0%), only a few were one-on-one interactions (n=41, 12.5%) while other interactions were related to small group activities (n=12, 3.6%) and large group activities (n=24, 7.3%) including a few family visits (n=2, 0.6%). The interpersonal distance between the staff and resident during interactions was mostly less than 18 inches (n=130, 39.4%) or 18–30 inches (n=99, 30.0%). Of the rest, a fifth involved interpersonal distance of more than four feet (n=65. 19.7%) and the rest involved the interpersonal distance of 30–48 inches (n=36, 10.9%). Additionally, the residents in the nursing homes mostly interacted with the nursing staff (n=241, 71.3%) and the majority of the residents were actively engaged in the conversation/interactions (n=270, 81.8%).

Quality of Interactions

As shown in Table 5, a total of 556 interactions were recorded for 341 residents. For each resident, the interaction/s was observed over a single 15-minute period resulting to a total 341 sessions and observation time of 5115 minutes (341*15 minutes). The majority of the interactions were positive (n= 466, 83.8%) followed by neutral interactions (n=60, 10.8%) and less frequently negative interactions (n=30, 5.4%). There was slightly higher number of positive care interactions (n=236, 42.4%) than positive social interactions (n=230, 41.4%). The number of negative protective (n=16, 2.9%) and negative restrictive (n=14, 2.5%) interactions were nearly equal.

Correlates of 'Positive' and 'Negative/neutral' Staff-resident Interactions

As shown in Table 6, 'positive' interaction varied by interaction location (OR=.137; 95% CI =0.044, 0.431; p<.01), interpersonal distance (OR=.340; 95% CI =0.151, 0.762; p<.01) and

resident level of participation (OR=.425; 95% CI =0.052, 0.123; p<.0001). More specifically, the odds of positive interactions decreased by 86.3% for interactions in private area such as resident room or bathroom. Similarly, the odds of positive interactions decreased by 84.1% for interactions where staff was in close proximity (i.e. <30 inch) with resident compared to interactions involving greater interpersonal distance (i.e. >30 inch). The odds of positive interactions also decreased by 57.5% for interactions involving active resident participation compared to passive participation.

Similarly, the 'negative/neutral' interaction varied by interaction location (OR=4.521; 95% CI =1.862, 10.981; p<.01) and resident level of participation (OR=9.663; 95% CI =4.555,20.499; p<.0001). More specifically, the odds of 'negative/neutral' interaction increased by 3.5 times for interactions where staff was in close proximity (i.e. <30 inch) with resident compared to interactions involving greater interpersonal distance (i.e. >30 inch). Similarly, the odds of 'negative/neutral' interaction increased by almost 9 times for interactions involving active resident participation compared to passive participation.

Unlike 'positive interaction' the interaction distance was not associated with 'negative/ neutral' interaction. Additionally, the resident cognitive status, interaction situation and type of staff were not associated with either 'positive' or 'negative/neutral' interactions. Together the covariates and predictors accounted for 52% and 36.1% of the total variance in 'positive' and 'negative/neutral' interactions respectively.

Discussion

The current study described and analyzed the interaction between staff and residents with moderate to severe cognitive impairment in nursing homes. The staff-resident interactions were often positive than negative or neutral, most interactions were care related, occurred with the nursing staff than activity or other support staff, and residents often demonstrated active participation in the interactions. Additionally, while 'positive' interaction varied by interaction location, distance, and resident level of participation, the 'negative/neutral' interactions only varied by interaction location and resident level of participation.

The findings from this study support prior work suggesting that the majority of the interactions between residents with moderate to severe cognitive impairment and staff were positive. Specifically, Zimmerman and colleagues reported a higher number of positive interactions based on observations of what was described as positive person work and physical contact in dementia care facilities when compared to care provided in non-dementia care area/facility.[18] In another more recent study of older adults and care givers in acute care, there were also a higher number of positive interactions, based on a modified QUIS, than negative or neutral interactions.[33] Similarly, in a pilot trial to determine efficacy of Dementia Care Mapping in improving dementia care in Australia, the quality of interactions between residents with dementia and the staff were found to be mostly positive.[34] The trial included 35 residents from the dementia-specific units in Australia and the quality of interactions was evaluated using QuIS.

Our findings were also consistent with prior research[34,35] noting that most interactions occur during care related tasks and interactions during non-care periods is comparatively less common. This finding may be due to the fact that activities of daily living take precedence over other activities in long-term care settings. It may be useful to evaluate the value of missed opportunities related to implementing positive social interactions with residents during non-care related periods. This may help to prevent or decrease behavioral symptoms, decrease boredom, and improve quality of life of residents.

Although most interactions were positive in this study, 16% of interactions were neutral or negative. Since the quality of interaction between staff and residents has a significant impact on quality of care and eventually the quality of life of residents with cognitive impairment related to dementia[12,19] future work should strive towards the reduction and possibly, elimination of any negative and neutral interactions in dementia care in nursing homes. This can be accomplished through improved interventions focused on replacing the negative and neutral interactions with positive and meaningful exchanges. For example, facilitating simulated roleplay and workshops to observe and target negative experiences of staff and using that information to develop strategies to replace the negative with positive and meaningful interactions could be useful. Additionally, current evidence on person-centeredness in dementia care suggests assessing and honoring residents and their preferences regardless of their cognitive status and using resident centered interaction techniques to promote positive and meaningful interactions.[24,36,39] Therefore, interventions should focus on training staff to recognize resident strengths (e.g., level of awareness, responsiveness, interaction ability) and developing individualized interaction strategies based on resident ability and needs.

Interventions involving staff behavior change programs and training in person-centered care (PCC) have been established with evidence of positive impact on staff-resident interactions. For example, Ballard and colleagues evaluated the impact of a PCC based intervention on resident quality of life and the quality of interactions.[37] The intervention comprised of staff training to understand and apply person-centered approach in resident care and promote activities and social interactions tailored to resident's abilities and interests. Based on the QuIS there was a significant increase in the proportion of positive care interactions (19.7% increase) at 9 months compared to baseline.[32] Similarly, Hartmann and colleagues evaluated the impact of an intervention to improve resident engagement and observed a decrease (from 6.4% to 2.3%) in negative interactions between staff and the residents.[38] Additionally, implementation of Dementia Care Mapping improved quality of interactions such that there was a significant increase in the proportion of positive care (41.9% to 50.7%) and positive social (31.0% to 42.0%) interactions, and a significant decline in the neutral (18.1% 46 5.4%) and negative restrictive (5.8% to 0.5%) interactions.[34] Implementation of these and other person-centered approaches can help eliminate neutral and negative care interactions and increase positive interactions particularly during non-care related periods. The resident centered communication intervention (RCCI)[20] and 'AwareCare'[13] program are some examples of person-centered approaches that particularly focus on verbal/non-verbal interaction strategies. RCCI comprises of staff training/support to develop individualized plan that honor resident needs and expand on their strengths to enhance resident centered communication.[20] Similarly, the 'AwareCare' program helps staff to identify signs of

awareness and responsiveness in severely cognitively impaired and use that information to develop strategies for effective interactions.[13] Regarding the characteristics of staff-resident interaction, most of the residents interacted with the nursing staff and were actively engaged in the conversation/interactions suggesting that the residents with moderate to severe cognitive impairment and dementia are capable of contributing to daily interactions in nursing homes. However, as findings suggest there were lower odds of positive interaction and higher odds of negative or neutral interaction for active residents. The lower odds of positive interactions despite resident's active contribution could be attributed to staff burnout and distress in lack of adequate knowledge and skills to interpret interactions from the residents with dementia. Also, there could be negative implication of low staffing ratios and other organizational limitations on staff-resident interactions. The low staffing ratios and high turnover in nursing homes might lead to an unhappy and dissatisfactory work environment[10,12] and the staff unable to adjust to such work situations might fail to engage with the residents with compassion and empathy[10,23] resulting in negative or neutral interactions despite resident's active contribution to interactions.

Additionally, the interpersonal distance between the staff and resident during interactions was mostly less than 30 inches suggesting closer distance between staff and residents during interactions. Maintaining an appropriate interpersonal distance is critical in dementia care, however, staff should be cognizant of not getting too close into the personal space of the residents. Research suggests that compared to younger adults, older individuals generally prefer greater interpersonal distance[39] and the invasion of personal space in dementia care might cause resident reactions such as agitation.[40] In agreement with the existing evidence, findings from current study also suggested lower odds of positive interaction and higher odds of negative interactions for interactions in private area and those involving closer interpersonal distance between staff and residents. It is possible that residents with cognitive impairment misperceive touch or other close interactions and resist staff in their personal space resulting in negative or neutral interactions.

Study Limitations

This study was limited by the virtue of being a secondary data analysis, using data from a single point in time, and including nursing homes from only two states. Further, the study participants were predominantly white and female. The quality of interactions was evaluated based on observations done over a brief 15-minute period. This is in contrast with other studies evaluating interactions for a longer time period.. Despite scheduling observations at different time/events, it is possible that the observations mostly occurred during morning care routines or post lunch in the afternoon when nursing assistants usually help the residents with toileting or other care procedure that were incomplete in the morning due to refusals or other reasons. Therefore, the finding that most interactions occurred with the nursing staff could be biased by such timing of observations. However, given that nursing staff provide majority of the care to the residents in long-term care settings findings from the observations could be similar regardless of the possible bias. Additionally, the interactions were mostly initiated by staff and were observed from the perspective of staff reaching out to the resident versus resident reaching out to the staff predominantly capturing interactions where residents were "receivers" while missing out on other meaningful interactions with

residents as 'providers'. Evaluating interactions from resident perspective is an important and interesting measure of the quality of interactions and could yield unique findings. The findings might also be biased due to social desirability. Being aware of the presence of an evaluator the staff might have deliberately interacted positively with the resident during the observation period. To minimize this bias, the research evaluators did not stay at close proximity but maintained an appropriate distance enough to be able to hear/observe the interaction. Additionally, they did not mention particularly which residents were being observed (especially in dining hall or other common areas) and informed that the observations are to understand the challenges staff face during care and other interaction with residents. Finally, the study did not account for nesting despite including residents from multiple facilities and recording multiple observations for each resident.

Conclusion

Despite these limitations this study provides some current descriptive information about the quality of interactions between nursing home staff and residents with moderate to severe dementia and interaction characteristics that might impact these interactions. Regardless of promising results in terms of the majority of the interactions being positive, the findings underscore the need for continued education and training to eliminate neutral and negative interactions that still persists in nursing homes. Future work should focus on developing and testing interventions to increase positive interactions during non-care routines, decrease the neutral and negative interactions and, evaluate its impact on quality of life and behavioral and psychological symptoms in dementia. Additionally, future studies could also explore staff characteristics (e.g. gender, level of experience) and facility factors (e.g. size, ownership) that might influence positive and negative interactions.

How does this paper contribute to the understanding of the quality of staff-resident interactions?

The findings from this study provide a description of the current ways in which staff interact with residents with moderate to severe dementia. In addition, the findings also suggest that the quality of staff-resident interactions might vary based on whether the interactions take place in private space such as resident room, bathroom etc. or other common areas, whether the interactions involve lesser or greater interpersonal distance between staff and residents, and whether or not there is active involvement of residents in the interaction. With these findings this study raises important research questions in that we need to explore the relationship of the quality of interactions with staffing and other facility factors and investigate whether there are particular staff factors (e.g. gender, level of experience) that might impact these interactions.

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Table 1.

Definitions of the Categories of Staff-resident Interactions (Source: Dean et al., 1993)

Positive social	Interactions involving good constructive conversations and companionship. For example, providing reassurance/comfort during care that is more than necessary to carry out a task--greetings directed to individuals, offering more food or asking if finished.
Positive care	Limited interactions during delivery of physical care that are only necessary to carry out the task and for safety and removal from danger during care. For example, brief verbal explanation of a morning care routine.
Neutral	Brief interactions without verbal and non-verbal contact. For example, putting plates down after lunch or dinner without any verbal or non-verbal exchange/gesture, undirected greetings.
Negative protective	Interactions that lack appropriate regard for the individual— providing care in a restrictive manner to ensure safety and removal from danger without any explanation/reassurance. For example, resident being fed too quickly, resident being told to wait for medication/treatment without stating the reason.
Negative restrictive	Interactions that involve opposing or resisting resident's freedom of action and ignorance without a good reason. For example, resident being told they can't have something (e.g. tea) without good reasoning/explanation, moving resident without warning or explanation.

Table 2:

A summary of QuIS, Quality of Interactions Schedule items

QUIS Section 1- Descriptive Information	QUIS Section 2- Quality of Interactions
• Interaction location (e.g. living room, dining area, resident room, bathroom etc.)	• Positive social (Yes/No)
• Interaction at a table (Yes/No)	• Positive care (Yes/No)
• Interaction situation (e.g. care-related, one-on-one, small group, large group, family visit etc.)	• Neutral (Yes/No)
• Interpersonal distance between the interacting individuals (e.g. 4+ feet, 30–48 inches, 18–30 inches, and <18 inches)	• Negative protective (Yes/No)
• Person(s) interacting with (e.g. nursing staff, activity staff, other support staff etc.)	• Negative restrictive (Yes/No)
• Level of participation of resident (active/passive)	

Descriptive Characteristics of the Residents

Sample Characteristics	Mean (S.D.) or n (%)
Age (years)	82.6 (12.4)
Gender (%, Female)	231 (68.3)
Race (%)	
White/Caucasian	250 (74.0)
Black/African American	86 (25.4)
More than 1 race/refused	2 (0.6)
Marital Status (%)	
Married	55 (16.6)
Unmarried	68 (20.5)
Widowed/divorced/separated	189 (57.1)
Don't Know/Refused	19 (5.7)
Cognitive status (%)	
Moderate (BIMS score 8–12)	73 (22.0)
Severe (BIMS score 0–7)	259 (78.0)

Notes. N = 341; Numbers may not add to actual N due to missing values. BIMS= Brief Interview of Mental Status.

Table 4.

Characteristics of the Staff-resident Interactions in Nursing Homes

Characteristics of Interactions	n (%)
Interaction location	
Resident room	144 (41.6)
Dining room	118 (34.1)
Hall	32 (9.2)
Living room	15 (4.3)
Other	37 (10.7)
Interaction situation	
Care -related	250 (76.0)
One-on-one	41 (12.5)
Small group	12 (3.6)
Large group	24 (7.7)
Family visit	2 (0.6)
Interpersonal distance	
4+ feet	65 (19.7)
30–48 inches	36 (10.9)
18–30 inches	99 (30.0)
<18 inches	130 (39.4)
Person (s) resident interacting with/type of staff	
Nursing staff	241 (71.3)
Activity staff	34 (10.1)
Support staff	43 (12.7)
Others	19 (5.6)
Level of participation	
Active	270 (81.8)
Passive	60 (18.2)

Notes. N (sample) =341; N (interactions) =556. A total of 556 interactions were evaluated for 341 residents during the assessment of quality of interactions. Numbers may not add to actual N due to missing values or, multiple choice options.

Table 5.

Quality of Staff-resident Interactions in Nursing Homes

Quality of interactions	n (%)
Positive Social	230 (41.4)
Positive Care	236 (42.4)
Neutral	60 (10.8)
Negative Protective	16 (2.9)
Negative Restrictive	14 (2.5)

Notes. N (sample) =341; N (interactions) =556. A total of 556 interactions were evaluated for 341 residents during the assessment of quality of interactions.

Table 6.

Correlates of 'Positive' and 'Negative/neutral' Interactions in Nursing Homes

Variables	Positive Interaction		Negative/neutral Interaction	
	Estimate (95% CI)	p-value	Estimate (95% CI)	p-value
Age	1.010 (0.978, 1.043)	0.54	0.993 (0.964, 1.023)	0.66
Gender, female	1.547 (0.618, 3.871)	0.35	0.878 (0.415, 1.856)	0.73
Race, African American	1.173 (0.375, 3.672)	0.78	0.436 (0.183, 1.036)	0.06
Marital status, married	1.410 (0.545, 3.648)	0.48	0.602 (0.271, 1.336)	0.21
Cognitive status, severe impairment	0.699 (0.250, 1.957)	0.50	0.956 (0.408, 2.240)	0.92-
Interaction location, private area	0.137 (0.044 0.431)	<0.01*	4.521 (1.862, 10.981)	<0.01*
Interaction situation, care related	1.002 (0.373, 2.698)	0.99	1.339 (0.583, 3.076)	0.50
Interpersonal distance, <30 inches	0.340 (0.151, 0.762)	<0.01*	1.483 (0.745, 2.952)	0.26
Type of staff/person resident interacting with, nursing	2.093 (0.771, 5.681)	0.15	0.507 (0.217, 1.186)	0.12
Resident participation, active	0.052 (0.022, .123)	<.0001*	9.663 (4.555, 20.499)	<.0001*

Note. N(residents)=329; Covariates: Age, gender, race, and marital status of which race and marital status were associated with 'positive' interaction while only marital status was associated with 'negative/neutral' interaction in the bivariate model. While these covariates lost their significance in the multivariate model, the predictors that were significant in bivariate model retained their significance in multivariable model except interaction distance which lost the significance in the multivariate model for 'negative/neutral' interactions.