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The Association between Preference Satisfaction and Satisfaction with Overall Care for Nursing Home Residents

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Abstract

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The Centers for Medicare and Medicaid Services mandate the provision of person-centered care (PCC), but there is limited evidence on how PCC impacts nursing home (NH) residents' care experiences. This study examined the relationship between n=163 NH residents' ratings of satisfaction with care related to their preferences and their satisfaction with overall care. Residents with higher preference satisfaction ratings reported significantly higher levels of satisfaction with overall care. Using preference satisfaction ratings has the potential to improve PCC planning and delivery in nursing homes.

Keywords

Preference; preference satisfaction; preference fulfillment; satisfaction; satisfaction with care; preference-based care; person-centered care; quality of care; care quality

Introduction

The voice and perspective of nursing home (NH) residents are historically lacking from the provision of care (Centers for Medicare & Medicaid Services [CMS], 2016; Institute of Medicine United States [US] Committee on Quality of Health Care in America, 2001; Stiefel & Nolan, 2012). To include residents in their care, CMS has mandated person-centered care (PCC) practices in NHs (CMS, 2016). PCC is a shift from the traditional medical model which focuses mainly on disease-management from providers' perspectives. PCC engages residents in developing a holistic plan of care that encompasses their needs and preferences (American Geriatric Society, 2016; Castle & Ferguson, 2010; Koren, 2010).

Preference-based care includes the measurement and fulfillment of residents' important preferences and is endorsed as an operationalization of PCC (Santana et al., 2018). CMS requires NHs attempt to interview all residents able to communicate the importance of their preferences (e.g., "how important is it to you to…") in two conceptual domains (i.e., daily and activity preferences) via Section F on the Minimum Data Set (MDS; 3.0; Housen et al., 2008; 2009). The MDS is a comprehensive assessment required for all NHs receiving Medicare or Medicaid reimbursement in the US (CMS, 2018). Past research on Section F demonstrates that resident and organizational characteristics play a role in how important residents rate their preferences on the item level and by conceptual domain (Duan et al., 2020; Heid et al., 2016; Housen et al., 2008; Roberts et al., 2018; Roberts & Saliba, 2019).

In addition to measuring the importance of residents' preferences, it is essential to assess the quality of preference-based care provided. Residents' ratings of how well they feel their preferences are satisfied (i.e., preference satisfaction ratings) can serve as a measure of perceived preference-based care quality (Bangerter, Heid, Abbott, & VanHaitsma, 2017; Heid, Brinch, Abbott, Eshraghi, & VanHaitsma, 2019). Such a measure provides a roadmap to track progress toward preference-based care over time and improve the quality of care planning and delivery. For example, if a resident identifies that taking a shower is an important preference for them, but they are not at all satisfied with care related to that preference, then providers have actionable information to work with that resident to improve care quality in that area. Preference satisfaction ratings have proved to be acceptable and reliable over time (Heid et al., 2019) and questions with similar intent have been used on

a widespread scale through CMS's former National Nursing Home Quality Improvement Campaign (National Nursing Home Quality Improvement Campaign, 2018; VanHaitsma et al., 2014). Using preference satisfaction ratings as an indicator of perceived preference-based care quality can help fill a gap in the literature on a lack of outcomes related to the impact of preference-based care. In fact, little is known about the effect of preference-based care quality on residents' care experiences.

An important component of residents' care experiences is satisfaction with overall care because it captures residents' affective responses to the quality of their care and life, which are innately entwined in NHs (Ejaz, Straker, Fox & Swami, 2003). Satisfaction with overall care has been linked to improved clinical outcomes and higher care quality leading some states to use it in pay-for-performance initiatives and some organizations to use it to track care quality (Anhang Price et al., 2014; Doyle, Lennox, & Bell, 2013; Harris-Kojetin & Stone, 2007; Nadash, Hefele, Miller, Barooah, & Wang, 2018). Though measures of satisfaction are not comprehensive measures of residents' care experiences and often varied in their approach and rigor, satisfaction with overall care is regarded as an appropriate assessment of care experiences from the resident's perspective (Lowe, Lucas, Castle, Robinson, & Crystal, 2003; Spangler, Blomqvist, Lindberg, & Winblad, 2019).

To better understand the relationship between preference-based care and residents' care experiences, this study examined the relationship between NH residents' preference satisfaction ratings and satisfaction with overall care.

Methods

Study Sample and Design

We used secondary data from a study on the development and validation of the Preferences for Everyday Living Inventory, (US; NR011334-01; Curyto, VanHaitsma, & Towsley, 2016) to explore the aims of the study. The parent study took place over three years (2011–2013) with a purposive sample recruited from 28 NHs across Pennsylvania. Residents in the dataset were medically stable, not enrolled in hospice, English-speaking with a Mini-mental State Examination (MMSE) score ≥ 13 (i.e., middle-stage dementia), and projected/current length of stay of > 3 months (Curyto, VanHaitsma,& Towsley, 2016).

Procedure

Eligibility in the parent study was determined via a designated contact person from each NH (e.g., director of nursing, and/or physician) as well as administration of the MMSE by trained research assistants. The rest of the parent study data was collected via face-to-face resident interviews. All data used in our analysis were deidentified. The parent study had IRB approval and the current secondary data analysis was not deemed as human subjects research.

Measures

Demographic and Clinical Information—Demographic information in the dataset included age, sex, race, ethnicity, education, marital status, Veteran status, religion, and length of stay.

Cognitive status—Cognitive status was determined via the MMSE. The MMSE is a widely used and accepted measure of cognitive status (Tombaugh, McIntyre, 1992). Scores of 24–30 indicate "normal" cognitive ability; 20–23 mild cognitive impairment or possible early-stage dementia/Alzheimer's disease; 10–19 middle-stage/moderate dementia/Alzheimer's disease; 0–9 late-stage/severe dementia/Alzheimer's disease.

Function—Physical function was determined via the MDS Activities of Daily Living (ADL) Scale. The MDS ADL Scale gives insight into residents' functional capabilities (Saliba & Buchanan, 2008). We used Morris, Fries, & Morris's (1999) long-from scoring which measures a resident's capacity to complete their activities of daily living across seven items (Likert scale of 0 [independence] to 4 [total dependence]. We reverse coded items so that higher scores indicate greater independence.

Depressive Symptoms—Depressive symptoms were measured using the Patient Health Questionnaire-8 (Kroenke, Spitzer, & Williams, 2001). The Patient Health Questionnaire-8 is an eight-item scale which uses a 4-point Likert scale (0 [not at all] to 3 [nearly every day] to assess how often a person experiences depressive symptoms. Summary scores represent the level of depression the resident is living with at the time of the assessment, with higher scores indicating more depressive symptoms. According to Kroenke et al. (2001), scores of 0–4 indicate minimal or no depression; 5–9 mild depression; 10–14 moderate depression; 15–19 moderately severe depression; 20–24 severe depression.

Preference Satisfaction Ratings—Preference satisfaction ratings were derived using a two-step process (Heid et al., 2019). First, the importance of residents' preferences (e.g., "how important is it to you…") was taken from Section F of the MDS which uses a 5-point Likert scale (1 [very important], 2 [somewhat important], 3 [not very important], 4 [not important at all], 5 [important but can't do or no choice]; see Table 1 for items; Housen et al., 2009). If a resident rated an item as important (i.e., 1, 2, or 5) in Section F, research assistants from the parent study asked residents an additional question (not included in Section F) about how well they felt their preference was satisfied (e.g., "how well do you feel this preference has been satisfied over the last two weeks?") on a 3-point Likert scale (1 [completely satisfied], 2 [somewhat satisfied], 3 [not satisfied at all]; Heid, Brnich, Eshraghi, Abbott, & VanHaitsma, 2019). A preference satisfaction sum score was created by adding together all preference satisfaction rating questions. Because residents identified different numbers of important preferences, the completed number of preference satisfaction ratings varied. To directly compare residents' data, the number of items a resident rated important was divided by the total score of their preference satisfaction ratings (i.e., numerator is the preference satisfaction rating sum score and the denominator is the number of important preferences). We reverse coded items so higher scores indicate higher preference satisfaction. In our analysis we examined the two conceptual domains (i.e., daily

and activity preferences) on Section F independently to see if there were differences in the relationship between preference satisfaction ratings and satisfaction with overall care by type of preference.

Satisfaction with Overall Care—Satisfaction with overall care was collected by parent study research assistants using a subscale (overall satisfaction) from the Ohio NH Resident Satisfaction survey (Straker et al., 2007). The Ohio NH Resident Satisfaction survey is one of few tools used in NHs in exchange for reimbursement. The Ohio NH Resident Satisfaction subscale measures residents' satisfaction with the overall care they receive using a 5-point Likert scale (1 [yes or always] to 5 [no or never]; "1. Overall, do the staff and residents help each other and get along? 2. Are the people who work here friendly?; 3. Would you recommend this facility to a family member or friend?; 4. Overall, do you like this facility?"). Scores for each item were added together to create a summary score which represents residents' satisfaction with overall care. Items were reverse coded so that higher scores indicate higher levels of satisfaction (range=0–16). The Ohio NH Resident Satisfaction overall satisfaction subscale has proved to be a reliable (α=0.75) and acceptable tool in and outside the context of the Ohio NH Resident Satisfaction survey (Straker et al., 2007). Brief and global-style satisfaction measures, such as the overall satisfaction subscale, have been suggested as a gold standard for obtaining ratings due to their brevity, resistance of participant fatigue, and applicability to a variety of types of care communities (Chong, 2003; Ohio Long-term Care Consumer Guide, 2019).

Covariates—Several covariates were included in the analysis based on previous literature related to satisfaction with overall care: age; sex; race; education; marital status; length of stay; cognitive status; function; depressive symptoms (Chong, 2003; Curtis, Sales, Sullivan, Gray, & Hedrick, 2005; Lucas et al., 2007; Nadash et al., 2018). These covariates were included to control for factors associated with residents' satisfaction with overall care.

Data Analysis

Descriptive statistics and multilevel linear modeling (MLM) were used to understand the sample and explore the aims of this study. MLM is used with clustered data such as residents within facilities in this analysis. MLM aided in determining whether preference satisfaction ratings are a predictor of residents' satisfaction with care by accounting for the potential that residents from the same NHs might experience similar levels of care and therefore, have similar levels of satisfaction. MLM was performed using MPlus (TWO LEVEL command; Gelman & Hill, 2006; Muthén & Muthén, 2007). We excluded residents (n=31) with missing data. We compared residents with missing data to those without using chi squares for categorical variables and t-tests for continuous variables. Residents with missing data were more likely to be divorced (p=0.001) and have higher education (p=0.039). We accounted for these potential biases by controlling for them in our analyses. We used grand mean centering on continuous variables to aid in interpretation of the results. We provide R^2 as an indicator of the proportion of variance accounted for by our predictors in the models.

Results

Sample

Residents (n=163) were, on average, 81.5 years old (SD=10.9), female (69.3%), white (82.8%), non-Hispanic or Latino (100%), widowed (45.4%), high-school graduate (53.4%), non-Veterans (82.8%) who resided in their NH for approximately 2.5 years (M=906.9 days; SD=890.6; Table 2). Most residents were cognitively intact (M=24.2; SD=4.1) with slightly better than average levels of function (M=13.6; SD=5.9) and minimal depressive symptoms (M=4.1; SD=4.5), though the sample included residents with a full range of depressive symptoms as well as cognitive and physical abilities.

Preference Satisfaction Ratings and Satisfaction with Overall Care

Table 1 displays the descriptive statistics for preference satisfaction ratings and satisfaction with overall care. Residents were somewhat to completely satisfied with their daily (M=2.64, SD=0.39; range 1–3) and activity preferences (M=2.63, SD=0.37; range 1–3) and usually or always satisfied with overall care (M=12.4, SD=3.1; range 0–16). Both satisfaction ratings of daily preferences (B=1.779, $SE\ B$=0.544, p<0.001) and activity preferences (B=1.315, $SE\ B$=0.492, p<0.007) were related to satisfaction with overall care. Higher preference satisfaction ratings were associated with greater satisfaction with overall care (Tables 3 and 4). The model R^2 was 0.334 for the full model including daily preferences and 0.318 for the full model including activity preferences.

Satisfaction with Overall Care and Covariates

The Ohio NH Resident Satisfaction survey subscale (overall satisfaction) had acceptable reliability in our sample (Cronbach alpha=0.762). As expected, satisfaction with overall care was significantly related to age, race, cognitive status, and depression in both models. Satisfaction with overall care was not significantly related to sex, education, marital status, length of stay, or function.

Discussion

This study examined the relationship between preference satisfaction ratings and satisfaction with overall care. MLM revealed that NH residents with higher preference satisfaction ratings were more satisfied with their overall care. Using the conceptual domains in MDS Section F, we found that satisfaction ratings with both daily preferences and activity preferences were significant predictors of satisfaction with overall care. In alignment with previous research (Chong, 2003; Curtis, Sales, Sullivan, Gray, & Hedrick, 2005; Lucas et al., 2007), we also found that age, race, cognitive status, and depressive symptoms were significantly related to satisfaction with overall care.

No prior work has explored the relationship between satisfaction with overall care and preference satisfaction ratings in the nursing home setting. However, our findings align with recent research in community-based setting where the extent to which older adults' preferences are 'taken into account' in care was related to older adults' overall satisfaction with their health care (Tavares, Hwang, & Cohen, 2021).Our findings are complimentary to

past work on the relationship between the implementation of PCC practices and higher satisfaction with overall care (Duan, Mueller, Yu, & Talley, 2020; Poey et al., 2017). Considering preference-based care as an operationalization of PCC, our findings support the relationship between PCC and higher satisfaction with overall care.

This work also expands on past findings related to the positive relationship between perceived choice and higher satisfaction with overall care (Amyx, Mowen, & Hamm, 2000; Bangerter et al., 2017; Hulicka, Morganti, Cataldo, 1975). Residents' satisfaction with care related to their preferences is dependent on residents feeling like they have choices available and that their preferences for those choices are honored. We delve deeper into this relationship by exploring satisfaction by type of preference. The conceptual domains in Section F of the MDS represent unique aspects of residents' needs (e.g., daily preferences represent physiological needs and activity preferences represent psychosocial needs). While the relationship between both domains and satisfaction with overall care were fairly similar, satisfaction with daily preferences was a marginally better predictor of satisfaction with overall care than satisfaction with activity preferences. If future research also supports this finding it could be explained by residents' hierarchy of needs demonstrated in Maslow's work (1943)—satisfaction with daily preferences results in higher satisfaction with overall care because it is necessary to fulfill physiological and safety needs before higher psychosocial level needs like belongingness, esteem, and self-actualization (i.e., activity preferences).

Along with assessing residents' important daily and activity preferences, one of the goals of the MDS Section F is to include the residents' perspective in the assessment process to increase resident buy-in and improve accuracy of the assessment (Saliba et al., 2012; Saliba & Buchanan, 2012). Past research indicates most residents are able to participate in interviews with staff to self-report on items related to mood, pain, and cognitive impairment (Thomas, Wysocki, Intrator, & Mor's, 2014). However, cross-sectional assessment of residents' needs and abilities, even in their own voice, is insufficient to truly incorporate the resident perspective into assessment and care planning. Instead, longitudinal evaluation of care quality from the resident perspective is needed.

With preference importance ratings already included as part of the MDS, the addition of preference satisfaction ratings to Section F would be a feasible and pragmatic way to assess the quality of preference-based care over time. In NHs, care quality is typically measured using clinical quality indicators (QIs; i.e., falls, pressure ulcers, urinary tract infections, etc.). QIs inform pay-for-performance initiatives, quality improvement plans, and consumer-focused tools such as Nursing Home Compare (CMS, 2018). Despite their widespread use, QIs lack the resident voice and perspective (Castle & Ferguson, 2010; Cefalu, 2011; Mor et al., 2003; Stiefel & Nolan, 2012). Preference satisfaction ratings could serve as a meaningful QI from the resident perspective as they have proven reliable and acceptable in the NH setting (Heid et al., 2019). Furthermore, the infrastructure to use preference satisfaction ratings could easily be attained using an already available, no-cost, mobile responsive application (https://compass.linkedsenior.com).

Using preference satisfaction ratings as a QI has utility in practice and can benefit residents, providers, NHs, and NH-consumers. Residents benefit because they are empowered to be partners in planning and improving their care experience which has demonstrated better care-related outcomes (e.g., treatment burden, unwanted care; Tinetti et al., 2019). Providers benefit because preference satisfaction ratings provide actionable information on how to improve an aspect of residents' care experiences—understanding how satisfied residents are with care related to their preferences, assessing patterns of preference satisfaction, and informing quality assurance and performance improvement activities (Heid et al., 2019; VanHaitsma et al., 2014). NHs benefit because they can gain potentially higher reimbursement rates and reputations if used in pay-for-performance initiatives. NH-consumers benefit because they gain insight into which NHs can meet residents' needs and preferences (VanHaitsma et al., 2019).

While there are many potential benefits to using preference satisfaction ratings as a QI, there are additional contextual factors to consider. Some evidence suggests that resident interviews are not conducted universally due to staff discretion on the resident's condition or ability to participate, especially for residents who are non-native-English speakers and/or living with cognitive impairment, dementia, or delirium (Thomas et al., 2014). While our sample is representative of NH residents nationally based on demographic and clinical characteristics (Centers for Disease Control and Prevention, 2016), it does not account for the unique needs of the aforementioned groups. For non-native English speakers, it is the clinician and NH's responsibility to ensure interpreters are available and accessed when needed. For those living with severe cognitive impairment and dementia, more work is needed to establish accurate and reliable self-reported measures (National Advisory Council on Alzheimer's Research, Care, and Services, 2018). For staff completing the MDS, training on the process for resident interviewing (Saliba & Buchanan, 2008) is required, but additional training on the appropriateness of interviewing a person who cannot self-report preference satisfaction is needed (Thomas et al., 2014).

Limitations

Limitations of this study include its exploratory nature and relatively small sample size. However, it should be noted that this is the largest sample available to date that measures NH residents' preference satisfaction. As with satisfaction research in general, there is a risk for positivity bias in the data. Residents may report high levels of preference satisfaction or satisfaction with overall care due to reluctance to express negativity or fear of retribution (Harris-Kojetin & Stone, 2007) and/or residents may be influenced by the Hawthorne Effect where they report higher (or lower) levels of satisfaction due to the attention paid to the assessment of their level of satisfaction (Moran et al., 2002). Additionally, because they were not available in the dataset, this work does not account for organizational-level characteristics. Previous work demonstrates a relationship between organizational characteristics and satisfaction with overall care as well as organizational characteristics and the importance of resident preferences (Duan et al., 2020; Heid et al., 2017). Therefore, organizational characteristics are likely related to preference satisfaction ratings and should be included in future studies.

Next Steps

Next steps for this work include testing the relationship between preference satisfaction ratings and satisfaction with overall care in larger, more diverse samples across the long-term care continuum (e.g., short stay, rehab, assisted living, etc.). More research using tools that evaluate care quality from other vantages, such as Nursing Home Consumer Assessment of Healthcare Providers and Systems, could also be useful (Sangl et al., 2007). To enhance the clinical utility of Section F and meaningfulness of preference assessment, there is a need to extend beyond the current practice of simply asking residents which preferences are most important. Ideal practice would include soliciting additional information about how residents would like their important preferences to be satisfied and regular evaluation of how satisfied residents are with care related to their preferences.

Conclusion

While NH residents are the most accurate and effective source to report on their unique care experience and how satisfied they are with care related to their preferences, residents' voices are missing from this dialogue. This study is the first to reveal a relationship between nursing home residents' preference satisfaction ratings and their satisfaction with overall care. Findings from this study challenge the status quo in preference-based care (e.g., Section F on the MDS) and support further exploration of using preference satisfaction ratings as a person-centered QI in NHs.

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Key Points:

- Satisfaction ratings of care related to preferences are a potential indicator of perceived preference-based care quality.
- Residents with higher preference satisfaction ratings report higher levels of satisfaction with overall care.

Table 1

Descriptive Statistics for Preference Satisfaction Ratings

How well do you feel this preference has been satisfied in the last two weeks?	N[a]	Min	Max	Mean (SD)[b]
Daily Preferences				
Choose what clothes to wear	134	1	2	1.23 (0.423)
Take care of personal belongings or things	153	1	3	1.39 (0.608)
Choose between a tub bath, shower, bed bath, or sponge bath	140	1	3	1.39 (0.570)
Have snacks available between meals	84	1	3	1.45 (0.648)
Choose your own bedtime	144	1	3	1.36 (0.550)
Have your family or a close friend involved in discussions about your care	146	1	3	1.27 (0.542)
Be able to use the phone in private	120	1	3	1.25 (0.506)
Have a place to lock your things to keep them safe	121	1	3	1.38 (0.649)
Total	163			2.64 (0.385)
Activity Preferences				
Have books, newspapers, and magazines to read	136	1	3	1.41 (0.683)
Listen to music you like	139	1	3	1.35 (0.548)
Be around animals such as pets	91	1	3	1.51 (0.705)
Keep up with the news	141	1	3	1.23 (0.441)
Do things with groups of people	104	1	3	1.32 (0.488)
Do your favorite activities	144	1	3	1.44 (0.600)
Go outside to get fresh air when the weather is good	133	1	3	1.48 (0.681)
Participate in religious services or practices	132	1	3	1.28 (0.514)
Total	163			2.631 (0.371)

Note.

[a] n displayed represents how many people rated the item as somewhat important, very important, or important but can't do on Section F of the MDS and were therefore asked about their satisfaction as a part of the parent study;

[b] scores range from 1–3, higher scores indicate higher preference satisfaction ratings

Table 2

Descriptive Statistics of Sample

	(n=163)	
	Mean/Frequency	**SD/Percent**
Age (In years)	81.5	10.9
Sex (Female)	113	69.3
Race (White)	135	82.8
Ethnicity (Not Hispanic or Latino)	163	100
Education level (High school)	87	53.4
Marital status (Widowed)	74	45.4
Religion (Catholic)	69	42.3
Veteran (No)	135	82.8
Length of stay (In days)	906.9	890.6
Cognitive status (MMSE)[a]	24.2	4.08
Function (ADL long-form)[b]	13.6	5.9
Depressive symptoms (PHQ-8)[c]	4.1	4.5
Satisfaction with overall care (Ohio Survey subscale)[d]	12.4	3.1

Note.

[a]Scores of 24–30 indicate “normal” cognitive ability; 20–23 mild cognitive impairment or possible early-stage dementia/Alzheimer’s disease; 10–19 middle-stage/moderate dementia/Alzheimer’s disease; 0–9 late-stage/severe dementia/Alzheimer’s disease,

[b]scores range from 0–28, higher scores indicate better function;

[c]scores of 0–4 indicate minimal or no depression; 5–9 mild depression; 10–14 moderate depression; 15–19 moderately severe depression; 20–24 severe depression;

[d]scores range from 0–16, higher scores indicate higher levels of satisfaction.

Table 3

MLM of Ratings of Daily Preferences and Satisfaction with Overall Care

Satisfaction with Overall Care			
	B	***SE B***	**P value**
Daily preferences	1.779	0.544	0.001*
Age	0.070	0.017	0.000*
Sex	−0.210	0.439	0.632
Race	0.922	0.195	0.000*
Education level	0.106	0.113	0.347
Marital status	0.058	0.178	0.745
Length of stay	0.000	0.000	0.452
Cognitive status[a]	0.123	0.039	0.002*
Function[b]	−0.009	0.032	0.769
Depressive symptoms[c]	−0.126	0.044	0.004*

Note.

[a]Scores of 24–30 indicate “normal” cognitive ability; 20–23 mild cognitive impairment or possible early-stage dementia/Alzheimer’s disease; 10–19 middle-stage/moderate dementia/Alzheimer’s disease; 0–9 late-stage/severe dementia/Alzheimer’s disease,

[b]scores range from 0–28, higher scores indicate better function;

[c]scores of 0–4 indicate minimal or no depression; 5–9 mild depression; 10–14 moderate depression; 15–19 moderately severe depression; 20–24 severe depression

Table 4

MLM of Ratings of Activity Preferences and Satisfaction with Overall Care

Satisfaction with Overall Care			
	B	***SE B***	**P value**
Activity preferences	1.315	0.492	0.007*
Age	0.068	0.017	0.000*
Sex	−0.224	0.453	0.621
Race	0.918	0.255	0.000*
Education level	0.128	0.115	0.264
Marital status	0.101	0.197	0.609
Length of stay	0.000	0.000	0.311
Cognitive status[a]	0.138	0.042	0.001*
Function[b]	0.003	0.029	0.922
Depressive symptoms[c]	−0.147	0.036	0.000*

Note.

[a]Scores of 24–30 indicate “normal” cognitive ability; 20–23 mild cognitive impairment or possible early-stage dementia/Alzheimer’s disease; 10–19 middle-stage/moderate dementia/Alzheimer’s disease; 0–9 late-stage/severe dementia/Alzheimer’s disease,

[b]scores range from 0–28, higher scores indicate better function;

[c]scores of 0–4 indicate minimal or no depression; 5–9 mild depression; 10–14 moderate depression; 15–19 moderately severe depression; 20–24 severe depression