

Technical Report: Evaluation of the Long-Stay Nursing Home Resident Quality of Life Survey

**Evaluation of the NF Payment Reform Legislation
2021 Report to the Legislature**

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January 14, 2021

Executive Summary

Background

Since 2005, the Minnesota Department of Human Services (DHS) and the survey research firm Vital Research have annually interviewed long-stay residents in Minnesota nursing facilities regarding their quality of life. Results from the survey are shared with nursing facilities, allowing them to better understand residents' perspectives on their services. The results are also incorporated into the Minnesota Nursing Home Report Card and utilized to calculate an overall quality score for the Value-Based Reimbursement payment system. This incentivizes facilities to consider aspects of quality of life that are meaningful to residents.

In 2016, the original survey was revised based on input from survey experts, quality of life experts, residents, families and providers to ensure the survey reflected contemporary expectations and practices. In its current form, the survey measures long-stay residents' quality of life over the following eight topics or domains: meaningful activities, food enjoyment, environment, dignity, autonomy, relationships, caregiving, and mood. The questions within each domain are averaged to create facility domain scores, and facility domain scores are averaged to create an overall resident quality of life score for each facility. These composite scores are then adjusted to account for characteristics of the facility and their resident populations. These adjusted scores are utilized to compare facilities' performances.

Purpose

One theme that emerged from qualitative findings based on discussions with nursing home clinical leaders, quality experts, and administrators was a desire for person-centered, comprehensive measures of resident quality of life. The Long-Stay Resident Quality of Life Survey could be a valuable tool for offering this person-centered, comprehensive perspective on resident quality of life. The survey was developed with input from residents, families, quality experts, and providers to ensure that the survey measures aspects of quality of life that are meaningful for residents. In addition, the survey measures multiple domains of quality of life to offer a more comprehensive picture of residents' lives. However, some nursing home clinical leaders, quality experts, and administrators expressed frustrations regarding the validity of the survey (the extent to which the measures actually reflect resident quality of life), as well as the responsiveness of the survey (the extent to which it is possible to achieve improvements in the measures with appropriate efforts and actions). In this report, we utilize quantitative methods to identify strategies for improving the validity and reliability of the Long-Stay Resident Quality of Life Survey. In addition, we explore opportunities for reducing the length of the survey. We do not propose major changes to the content or delivery of the survey, as that is beyond the scope of these analyses.

Data and Methods

Data are from the 2017-2019 Long-Stay Resident Quality of Life surveys. First, we examine whether patterns in residents' responses to the survey support the same dimensions, or domains, as the current Long-Stay Resident Quality of Life Survey. Second, based on the patterns in residents' responses, we develop and validate a new domain structure. Third, we compare the properties of the current and new domain structures. When evaluating domains and items, the following criteria were considered:

- a. **Construct validity:** Do the items relate to each other in a manner consistent with the current set of domains? According to patterns in residents' responses, which items are the best indicators of each domain?
- b. **Correlation with other items:** To what extent is each item correlated with other items in the survey and within its domain? Are there any weak correlations suggesting that an item is not a reliable measure of a domain? Are there any items that are so highly correlated that they are measuring redundant aspects of quality of life?
- c. **Frequency of endorsement:** Are there any items that are so frequently or infrequently endorsed that they are not useful in distinguishing among residents in terms of quality of life?
- d. **Percentage missing:** Are there any items at risk of bias because a high percentage of residents did not respond to the question?
- e. **Balance:** Are a similar number of items used to measure each domain of resident quality of life?
- f. **Content validity:** Do the items used to measure a domain seem to be reasonable measures of that aspect of resident quality of life?

To evaluate the domains and items, exploratory factor analyses (EFA), confirmatory factor analyses (CFA), item-rest correlations, tetrachoric and polychoric correlations, descriptive analyses, and histograms were conducted.

Summary of Findings

Based on EFA results, a new model for categorizing items into domains is proposed. The new domain structure includes the following domains of long-stay resident quality of life: meaningful activities, food enjoyment, dignified care, quality of service, autonomy, environment, communication with staff, and mood. CFA revealed that the new domain structure fits better with the underlying pattern of residents' responses than the current domain structure, although the difference in fit is modest.

Upon evaluating domains and items based on the aforementioned criteria, we recommend items for removal from the survey both in the event the current domain structure is maintained and in the event the new domain structure is adopted. We propose that omitting the following items would enhance the validity, improve the reliability, and reduce the length of both the current and new models of the survey. We recommend that Q10 (“Is it easy for you to get around in your room?”) is removed because its high correlation with Q11 (“Can you get to the things you need in your room?”) suggests it is measuring a redundant aspect of quality of life. We recommend that Q18 (“Do the people who work here treat you politely?”) is removed because it is highly correlated with 5 other items in the survey, indicating that the question adds little unique information regarding residents’ quality of life. In addition, Q18 has a high level of endorsement (95% agreement), suggesting that the item is not very useful in differentiating among residents in terms of quality of life. We recommend that Q35 (“Do the same people take care of you most of the time?”) is removed because CFA results suggest the item has low construct validity, and item-rest correlations suggest the item is weakly related to the other items in its domain. In addition, removal of Q35 would result in increased balance across the domains.

In the event that the new domain structure is adopted, we also propose that Q30 (“Are you friends with anyone who lives here?”) is removed from the survey. CFA results suggest that Q30 has low construct validity, and item correlations suggest Q30 is weakly related to the other items in its domain. During focus groups with nursing facility administrators and quality experts, concerns about the measure were raised; specifically, some felt that the measure did not reflect overall relationship quality in the facility, but rather residents’ varying definitions of what it means to be a friend. In addition, given the organization of the new domain structure, removing Q30 from the survey would not disrupt the balance of items among domains.

For both the current and new domain structures, we recommend that Q38 (“Would you recommend [name of facility] to someone who needs care?”) and Q39 (“Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?”) are moved to a separate domain termed “resident global assessment”. This recommendation is made to improve the content validity of the domains, given that residents’ responses to Q38 and Q39 may be influenced by multiple domains of quality of life.

CFA analyses suggest that removing the recommended items from the survey and creating a new resident global assessment domain leads to a slight improvement in model fit for both the current and the new domain structures. When comparing the distributions of facility domain scores across models, none of the domain score distributions for the new model of domains exhibit as extreme of a ceiling effect as the dignity domain score distributions in the current models. This is notable given that ceiling effects make it more challenging to distinguish among facilities in terms of quality of life. Overall, the new structure of domains with the recommended items removed is the best fitting model; it also is the shortest survey, and thus imposes the least burden on respondents.

Recommendations

Recommended Action: Adopt the new structure of domains (i.e. meaningful activities, food enjoyment, dignified care, quality of service, autonomy, environment, communication with staff, and mood).

This new domain structure has several advantages. First, the new domains are more consistent with underlying patterns in the data, suggesting that the domains are more valid and reliable. Second, the new domain structure results in more balanced domains, which makes it easier to compare variability in domain scores across domains. Third, the new domain structure results in a more normal distribution of facility domain scores, which makes it easier to distinguish among facilities in terms of quality of life.

Recommended Action: Move Q38 (“Would you recommend [name of facility] to someone who needs care?”) and Q39 (“Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?”) to a separate domain of quality of life that measures resident global assessment.

This recommendation is made to improve the content validity of the domains, given that residents’ responses to Q38 and Q39 may be influenced by multiple domains of quality of life. Q38 should be scored as the percent positive responses (i.e., proportion of facility residents agreeing that they would recommend the facility). For Q39, a facility percent positive score should be calculated in the same manner as it is currently calculated. In particular, residents’ responses should be assigned points as follows: “A” 4 points, “B” 3 points, “C” 2 points, “D” 1 point and “F” zero points. The points for all residents giving a valid response in a facility should be summed, and this total should then be divided by the maximum total points that the facility could have earned. The facility percent positive responses for Q38 and Q39 should then be averaged together to create a score for the domain. To be consistent with the current approach for calculating a composite measure of resident quality of life, this new resident global assessment domain should be given equal weight to the other domains. In the future, however, the Minnesota Department of Human Services may want to explore other approaches to weighting domain scores when calculating facilities’ composite quality of life scores. Notably, residents and family members might view some domains as being more important than others. Their preferences, obtained through surveys or focus groups, could be used to assign weights to the domains.

Recommended Action: In the event the new domain structure is adopted, remove the following items from the Long-Stay Resident Quality of Life Survey:

- **Q10:** Is it easy for you to get around in your room?
- **Q18:** Do the people who work here treat you politely?
- **Q30:** Are you friends with anyone who lives here?
- **Q35:** Do the same people take care of your most of the time?

Omitting these items would improve the validity, reliability, and balance of domains. An additional advantage of removing the items from the survey is that it would reduce the length of the survey and, in turn, reduce the cognitive burden associated with taking the survey.

Recommended Action: In the event the current domain structure is maintained, remove the following items from the Long-Stay Resident Quality of Life Survey:

- **Q10:** Is it easy for you to get around in your room?
- **Q18:** Do the people who work here treat you politely?
- **Q35:** Do the same people take care of your most of the time?

Omitting these items would improve the validity, reliability, and balance of domains. An additional advantage of removing the items from the survey is that it would reduce the length of the survey and, in turn, reduce the cognitive burden associated with taking the survey.

1. Background

Since 2005, the Minnesota Department of Human Services (DHS) and the survey research firm Vital Research have annually interviewed long-stay residents in Minnesota nursing homes regarding their quality of life. Results from the survey are shared with nursing facilities, allowing them to better understand residents’ perspectives on their services. The results are also incorporated into the Minnesota Nursing Home Report Card and utilized to calculate an overall quality score for the Value-Based Reimbursement payment system. This incentivizes facilities to consider aspects of quality of life that are meaningful to residents.

The original Long-Stay Resident Quality of Life survey was developed and tested by Drs. Rosalie and Robert Kane of the University of Minnesota. In 2016, a revised survey was introduced based on input from survey experts, quality of life experts, residents, families and providers. In its current form, the survey measures long-stay residents’ quality of life over the following eight topics or domains: meaningful activities, food enjoyment, environment, dignity, autonomy, relationships, caregiving, and mood. The domains and corresponding items included in the 2017-2019 Long-Stay Resident Quality of Life surveys are presented in Table 1. There are 48 items in total.

The items within each domain are averaged to create facility domain scores, and facility domain scores are averaged to create an overall resident quality of life score for each facility. These composite scores are then adjusted to account for characteristics of the facility and their resident populations. These adjusted scores are utilized to assign stars for the Minnesota Nursing Home Report Card and to compare facilities for the purpose of determining reimbursement.

Table 1. Long-Stay Resident Quality of Life Domains and Items (2017-2019)

Domain	Item
Meaningful Activities (5 Items)	Q1: Are there enough scheduled activities here?
	Q2: Do you like the activities that are scheduled here?
	Q3: Do you have something to look forward to most days?
	Q4: Are there things you do on the weekends that you enjoy?
	Q5: Are you given the chance to do things that are meaningful to you?
Food Enjoyment (4 Items)	Q6: Do you like the food here?
	Q7: Do you get your favorite foods here?
	Q8: Does the menu change enough?
	Q9: Do you enjoy the mealtimes here?
Environment (8 Items)	Q10: Is it easy for you to get around in your room?
	Q11: Can you get to the things you need in your room?
	Q12: Does noise keep you awake at night?*
	Q13: Can you enjoy the outdoors when you want to?
	Q14: Can you find a place to be alone when you want to be alone?
	Q15: Do you feel you have enough privacy?
	Q16: Are your personal items safe here?
	Q17: Do you feel safe here?

Domain	Item
Dignity (5 Items)	Q18: Do the people who work here treat you politely?
	Q19: Do the people who work here listen to you?
	Q20: Do the people who work here let you do the things you can do for yourself?
	Q21: Are the people who work here gentle with your care?
	Q22: Do the people who work here respect your modesty?
Autonomy (4 Items)	Q23: Can you get up in the morning at the time you want?
	Q24: Do the people who work here do things the way you want them done?
	Q25: Are you encouraged to speak up about things you don't like here?
	Q26: Are your concerns taken care of in a timely manner?
Relationships (4 Items)	Q27: Do the people who work here stop by just to talk?
	Q28: Do the people who work here talk with you about things that are important to you?
	Q29: Do the people who work here seem happy to work here?
	Q30: Are you friends with anyone who lives here?
Caregiving (9 Items)	Q31: Do you get help when you need it in a timely manner?
	Q32: Do the people who work here tell you what they are doing when they care for you?
	Q33: Do the people who work here check often enough to see if you need anything?
	Q34: Do the people who work here ask to come in before entering your room?
	Q35: Do the same people take care of your most of the time?
	Q36: Do the people who work here ever get angry at you?*
	Q37: Do the people who work here go above and beyond to give you a good life?
	Q38: Would you recommend [name of facility] to someone who needs care?
	Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?
Mood (9 Items)	Q40: In the past two weeks, how often have you felt bored?
	Q41: In the past two weeks, how often have you felt angry?
	Q42: In the past two weeks, how often have you felt relaxed?*
	Q43: In the past two weeks, how often have you felt worried?
	Q44: In the past two weeks, how often have you felt interested in things?*
	Q45: In the past two weeks, how often have you felt sad or unhappy?
	Q46: In the past two weeks, how often have you felt afraid?
	Q47: In the past two weeks, how often have you felt lonely?
Q48: In the past two weeks, how often have you felt happy?*	

Note: For items Q1-Q38, response categories were (1) generally yes; (0) generally no. For item Q39, response categories were (4) A, (3) B, (2) C, (1) D, (0) F. For items Q40-Q48, response categories were (0) often; (1) sometimes; (2) rarely; (3) never.

*Item reversed when calculating domain scores.

2. Objective

One theme that emerged from qualitative findings based on discussions with nursing home clinical leaders, quality experts, and administrators was a desire for person-centered, comprehensive measures of resident quality of life (Refer to “Technical Report: Qualitative Component” for more detail about the qualitative findings). The Long-Stay Resident Quality of Life Survey could be a valuable tool for offering this person-centered, comprehensive perspective on resident quality of life. The survey was developed with input from residents, families, quality experts, and providers to ensure that the survey measures aspects of quality of life that are meaningful for residents. In addition, the survey measures multiple domains of quality of life to offer a more comprehensive picture of residents’ lives. However, some nursing home clinical leaders, quality experts, and administrators expressed frustrations regarding the validity of the survey (the extent to which the measures actually reflect resident quality of life), as well as the responsiveness of the survey (the extent to which it is possible to achieve improvements in the measures with appropriate efforts and actions).

The purpose of this report is to explore opportunities for enhancing the validity and reliability and reducing the length of the Long-Stay Resident Quality of Life Survey. First, we examine whether patterns in residents’ responses to the survey support the same dimensions, or domains, as the current Long-Stay Resident Quality of Life Survey. Second, based on the patterns in residents’ responses, we develop and validate a new domain structure for the survey. Third, we compare the properties of the current and new domain structures.

Survey domains and items were evaluated according to the following criteria:

- a. **Construct validity:** Do the items relate to each other in a manner consistent with the current set of domains? According to patterns in residents’ responses, which items are the best indicators of each domain?
- b. **Correlation with other items:** To what extent is each item correlated with other items in the survey and within its domain? Are there any weak correlations suggesting that an item is not a reliable measure of a domain? Are there any items that are so highly correlated that they are measuring redundant aspects of quality of life?
- c. **Frequency of endorsement:** Are there any items that are so frequently or infrequently endorsed that they are not useful in distinguishing among residents in terms of quality of life?
- d. **Percentage missing:** Are there any items at risk of bias because a high percentage of residents did not respond to the question?
- e. **Balance:** Are a similar number of items used to measure each domain of resident quality of life?
- f. **Content validity:** Do the items used to measure a domain seem to be reasonable measures of that aspect of resident quality of life?

We do not propose major changes to the content or delivery of the survey, as that is beyond the scope of these analyses.

3. Methods

3.1 Data and samples

Data from the 2017-2019 Long-Stay Resident Quality of Life surveys are used for the analyses. Data from these years were selected to ensure that the survey employed was identical across years. In 2017, there were 10,007 residents within 355 facilities; in 2018, there were 9,884 residents within 352 facilities; in 2019, there were 9,896 residents within 347 facilities. The data from 2017 were used as the development or exploratory sample, and the data from 2018 and 2019 were used as the validation or evaluation sample.

Items Q1-Q38 from the current meaningful activities, food enjoyment, environment, dignity, autonomy, relationships, and caregiving domains are included in all analyses. Q39 (“Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?”) is excluded from the exploratory factor analyses because it is measured and incorporated into the caregiving domain differently from other domain items. Sensitivity analyses that included Q39 in the exploratory factor analyses yielded similar results. Q39 is included in the confirmatory factor analyses in order to evaluate how recommended changes involving the item influence the validity and reliability of the survey. Items from the mood domain (Q40-Q48) are excluded from both the exploratory and confirmatory factor analyses because the items are conceptually distinct from items in the other domains. In addition, the items in the mood domain are measured differently from items in the other domains. For the items in the mood domain, residents are asked how often they experienced a mood: often, sometimes, rarely, or never; for the items in other domains, residents are asked whether they generally agree or generally disagree with each item. We maintain that these are compelling rationales for continuing to group items Q40-Q48 together as a distinct mood domain.

3.2 Evaluation criteria

a. Construct Validity:

Exploratory factor analyses (EFA)

EFA are conducted to identify dimensions, or domains, of long-stay resident quality of life based on patterns in residents’ responses. These analyses also offer insight into which items are the best indicators of each domain.

When determining to which factor an item should be allocated, the following three criteria were weighed: the relative sizes of the factor loadings, the balance of items across factors, and the perceived validity of each factor. In instances in which the difference between the largest and the second largest factor loading was greater than 0.25, the item was assigned to the factor with the highest factor loading. In instances in which the difference was 0.25 or less, we considered placing an item on the factor with a smaller

factor loading if (a) doing so would result in greater balance among the domains, and/or (b) the item was perceived to fit better conceptually with the other items in that factor.

Confirmatory factor analyses (CFA)

CFA produce statistics that allow one to quantify the extent to which a specified set of domains (i.e. factors), as well as the allocation of items among those domains, fit underlying patterns in the data. To assess how well the specified models fit the data, the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker-Lewis Index (TFI), and Standardized Root Mean Square Residual (SRMR) are calculated. These statistics all range from 0-1. A RMSEA of 0.05 or less¹ and a SRMR of 0.08 or less are indicative of a well-fitted model². For CFI and TFI, a value of 0.90 or greater is generally considered to be indicative of satisfactory fit, while a value of 0.95 or greater is considered to be indicative of good fit². Moreover, factor loadings from the CFA were used to assess how strong of a predictor an item was of its domain; items with factor loadings above 0.60 (or below -0.60 for negative items) were considered to be strong predictors of the domain.

b. Correlation with other items

Item-rest correlations were calculated to assess the correlation between each item and the rest of the items in its domain. Item-rest correlations below 0.30 were considered to indicate that the item has a weak relationship with the other items in the domain³. To assess whether any items in the survey were redundant, correlations were calculated among items from all of the domains. Correlation coefficients above 0.70 were flagged for further discussion of whether the highly correlated items appear to add little unique information regarding residents' quality of life.

c. Frequency of endorsement

Descriptive analyses were utilized to identify items that were so frequently or infrequently endorsed that they may not be useful in distinguishing among residents in terms of quality of life. Frequencies were calculated, and items were flagged if over 95% or less than 5% of residents agreed with the statement.

d. Percentage missing

Descriptive analyses were conducted to identify the percentage missing for each item. Items that had more than 10% missing were considered to be at greater risk for non-response bias⁴.

¹ Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.). *Testing Structural Equation Model*. (pp. 136-162). Newbury Park, CA: Sage.

² Brown, Timothy A. (2015). *Confirmatory Factor Analysis for Applied Research*. 2nd Edition. Guilford Press.

³ Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw Hill.

⁴ Bennett D.A. (2001). How can I deal with missing data in my study? *Aust N Z J Public Health*, 25(5), 464–469.

e. Balance of items across domains

Given that items are currently averaged to calculate domain scores, unbalanced domains may result in some items having a greater influence on facilities' overall resident quality of life score than other items. In addition, when domains are unbalanced, it is more difficult to compare variability in domain scores across domains. Therefore, we assess whether a similar number of items are used to measure each domain.

f. Content validity

To assess content validity, the report authors discussed whether they had any concerns regarding the validity of each item within a domain. If any concerns were raised, the validity of the item was discussed until the authors reached a consensus. If an item was considered for removal based on other criteria, the authors considered how the removal of that item would affect the overall content of the domain. In addition, items were considered to lack content validity if, during the qualitative portion of this study, nursing facility quality experts and administrators expressed concerns about the content of an item. Nursing facility quality experts and administrators were not asked about each item individually, so discussions regarding the content validity of individual items in the survey were initiated by these stakeholders.

3.3 Plan of Analysis

First, exploratory factor analyses (EFA) are conducted. The EFA results are then weighed against other criteria, notably the content validity of each domain as well as the balance of items across domains. After reflecting on these criteria, we propose a new model for organizing the items in the Long-Stay Resident Quality of Life Survey within domains.

Second, each item is evaluated against the criteria for both the current and new domain structures. After weighing these criteria, we make two sets of recommendations. First, we make item recommendations in the event that the current set of domains are maintained. Second, we make item recommendations in the event that the new set of domains are adopted.

Third, analyses are conducted to compare the current and new domain structures when item recommendations are versus are not implemented. Confirmatory factor analyses (CFA) were conducted to compare the fit of the models. Fit statistics for the current and new domain structures with or without item recommendations implemented are then compared to determine which model most closely represents underlying patterns in residents' responses.

Lastly, descriptive analyses are conducted to compare how the specification of domains for each model affects the distribution of facility domain scores. The distribution of domain scores for each model are examined to identify any domains in which there are ceiling or floor effects (instances in which domain scores cluster around the highest or lowest possible values). These distributions are then compared across models.

3.4 Data Analyses

Both the exploratory and confirmatory factor analyses were conducted using Mplus Version 8. The standard errors were adjusted to account for the fact that residents are clustered within facilities. A WLSMV estimator was utilized given its suitability for modeling categorical data. For the EFA, Geomin oblique rotation was utilized to allow the factors (domains) to be correlated with one another. For the CFA, factors were allowed to be correlated, and the factor variances were set to 1 to allow the factor loadings to be freely estimated.

Cronbach's alpha was utilized to calculate item-rest correlations. In addition, correlation coefficients were calculated among items from all of the domains. For correlations between two binary items (Q1-Q38), tetrachoric correlation coefficients are presented. For correlations between Q39 (Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?) and all other items, polychoric correlations are presented. Frequencies were calculated for each item to ascertain the frequency of endorsement and the percentage missing.

To create facility domain scores, first a facility percent positive for each item was calculated. For questions Q1-Q38, the response categories are (1) generally yes; (0) generally no. Therefore, the percent positive for these items is the percent of residents in a facility who responded generally yes⁵. For Q39, a facility percent positive score was calculated by assigning the following point values to residents' responses: "A" 4 points, "B" 3 points, "C" 2 points, "D" 1 point and "F" zero points. The points for all residents giving a valid response to Q39 in a facility were summed, and this total was then divided by the maximum total points that the facility could have earned. Facilities' percent positive scores for each item within a domain were then averaged to create facility domain scores. To compare the distribution of facility domain scores, means, standard deviations, and ranges were calculated. Histograms were also conducted to enable the visual comparison of the distribution of facility domain scores across models.

⁵ Items Q12 (Does noise keep you awake at night?) and Q36 (Do the people who work here ever get angry at you?) are negative items. Therefore, for these items the percent positive is the percent of residents who responded generally no.

4. Results

4.1. Exploratory Factor Analyses: Exploring the Dimensionality of the Long-Stay Resident Quality of Life Survey

In this section, EFA are conducted to identify dimensions, or domains, of long-stay resident quality of life based on patterns in residents' responses. These analyses also offer insight into which items are the best indicators of each domain.

Eigenvalues for the first 7 factors were 15.52, 2.41, 1.96, 1.82, 1.43, 1.03, and 0.92 respectively, suggesting that a 6 factor (or domain) structure was the best fit for the data. After weighting three criteria—the relative sizes of the factor loadings, the balance of items across factors, and the perceived validity of each factor—items were allocated to corresponding factors. The factor allocation and loadings for the 6 factors are presented in Table 4.1.1.

Table 4.1.1. EFA Results for the Long-Stay Quality of Life Survey

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Q1: Are there enough scheduled activities here?	0.610	0.067	0.065	-0.039	0.095	-0.039
Q2: Do you like the activities that are scheduled here?	0.576	0.141	0.130	0.033	-0.021	-0.079
Q3: Do you have something to look forward to most days?	0.699	-0.038	0.001	-0.020	0.008	0.106
Q4: Are there things you do on the weekends that you enjoy?	0.616	0.085	-0.014	0.094	-0.035	0.061
Q5: Are you given the chance to do things that are meaningful to you?	0.766	0.001	0.047	0.054	0.037	0.031
Q30: Are you friends with anyone who lives here?	0.233	0.034	-0.047	0.070	-0.031	0.320
Q6: Do you like the food here?	-0.001	0.949	0.049	0.006	-0.010	-0.044
Q7: Do you get your favorite foods here?	0.098	0.728	-0.046	0.019	0.062	0.161
Q8: Does the menu change enough?	0.144	0.555	0.046	-0.013	0.121	-0.002
Q9: Do you enjoy the mealtimes here?	0.187	0.649	0.085	0.067	0.054	0.025
Q18: Do the people who work here treat you politely?	0.011	-0.070	0.897	0.004	0.038	-0.091
Q19: Do the people who work here listen to you?	0.060	-0.046	0.814	0.020	0.043	0.027
Q21: Are the people who work here gentle with your care?	0.023	-0.048	0.845	0.069	0.042	-0.098
Q22: Do the people who work here respect your modesty?	0.060	-0.051	0.680	0.006	0.221	0.013
Q24: Do the people who work here do things the way you want them done?	0.012	0.024	0.655	0.056	0.161	0.014
Q26: Are your concerns taken care of in a timely manner?	0.062	0.095	0.675	0.015	0.062	0.039
Q29: Do the people who work here seem happy to work here?	0.009	0.14	0.713	-0.003	-0.008	0.048
Q31: Do you get help when you need it in a timely manner?	-0.082	0.118	0.796	0.113	-0.121	0.058
Q33: Do the people who work here check often enough to see if you need anything?	-0.051	0.138	0.608	0.020	-0.090	0.347
Q35: Do the same people take care of your most of the time?	-0.071	0.119	0.322	0.091	-0.060	0.089
Q36: Do the people who work here ever get angry at you?*	0.023	0.068	-0.684	-0.053	-0.012	0.224
Q37: Do the people who work here go above and beyond to give you a good life?	0.098	0.104	0.629	-0.121	-0.071	0.312
Q38: Would you recommend [name of facility] to someone who needs care?	0.215	0.179	0.644	-0.071	-0.031	0.001

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Q10: Is it easy for you to get around in your room?	0.018	0.023	0.004	0.882	0.006	-0.050
Q11: Can you get to the things you need in your room?	0.024	0.005	0.055	0.883	-0.033	-0.041
Q13: Can you enjoy the outdoors when you want to?	0.205	0.022	-0.033	0.337	0.203	0.117
Q20: Do the people who work here let you do the things you can do for yourself?	0.093	-0.173	0.418	0.265	0.204	0.049
Q23: Can you get up in the morning at the time you want?	-0.064	0.052	0.222	0.357	0.143	0.117
Q12: Does noise keep you awake at night?*	0.085	-0.077	-0.313	0.037	-0.293	0.175
Q14: Can you find a place to be alone when you want to be alone?	0.074	-0.007	-0.011	0.121	0.675	0.143
Q15: Do you feel you have enough privacy?	-0.023	0.138	0.212	0.020	0.664	-0.001
Q16: Are your personal items safe here?	-0.012	0.114	0.462	-0.006	0.277	-0.071
Q17: Do you feel safe here?	-0.003	0.049	0.534	-0.006	0.418	-0.095
Q25: Are you encouraged to speak up about things you don't like here?	0.124	-0.029	0.342	-0.009	0.186	0.278
Q27: Do the people who work here stop by just to talk?	-0.042	-0.036	0.238	0.012	0.016	0.703
Q28: Do the people who work here talk with you about things that are important to you?	0.038	0.017	0.328	0.03	0.057	0.662
Q32: Do the people who work here tell you what they are doing when they care for you?	0.021	0.003	0.531	-0.009	-0.023	0.366
Q34: Do the people who work here ask to come in before entering your room?	0.037	-0.068	0.362	-0.091	0.124	0.297

Note: The EFA was conducted using data from the 2017 Long-Stay Resident Quality of Life Survey. Factor loadings in bolded red indicate the recommended item placement. Factor loadings in bolded black represent instances in which an item loaded higher on one factor, but was recommended for placement on another factor because: (a) doing so would result in greater balance among the domains, and/or (b) the item was perceived to fit better conceptually with the other items in that factor.

Items from the mood domain (Q40-Q48) were not included in the EFA and, in turn, are not displayed above. These items are conceptually distinct and measured differently from items in the other domains; therefore, we recommend that items Q40-Q48 continue to be grouped together as a mood domain.

Q39 was excluded from the EFA because it is measured and incorporated into the caregiving domain differently from other domain items. Sensitivity analyses suggest that including Q39 in the exploratory factor analysis yields similar results.

*Item reversed when calculating domain scores.

Considering balance as a criterion for item placement did result in a greater balance of items across factors (i.e. domains). Nonetheless, the number of items within each factor still varied considerably, ranging from 4 (Factor 2) to 13 (Factor 3). In an effort to further improve the balance of the survey, an additional EFA was conducted to explore the dimensionality of the largest factor (Factor 3) and the possibility of dividing the factor into two domains. The results are presented in Table 4.1.2.

Table 4.1.2. EFA Results to Explore the Dimensionality of Factor 3

Item	Factor 1	Factor 2
Q18: Do the people who work here treat you politely?	0.904	-0.013
Q19: Do the people who work here listen to you?	0.667	0.236
Q21: Are the people who work here gentle with your care?	0.853	0.032
Q22: Do the people who work here respect your modesty?	0.625	0.205
Q24: Do the people who work here do things the way you want them done?	0.528	0.293
Q36: Do the people who work here ever get angry at you?*	-0.703	0.089
Q26: Are your concerns taken care of in a timely manner?	0.308	0.551
Q29: Do the people who work here seem happy to work here?	0.342	0.516
Q31: Do you get help when you need it in a timely manner?	0.201	0.679
Q33: Do the people who work here check often enough to see if you need anything?	-0.064	0.847
Q35: Do the same people take care of your most of the time?	0.002	0.414
Q37: Do the people who work here go above and beyond to give you a good life?	0.000	0.810
Q38: Would you recommend [name of facility] to someone who needs care?	0.195	0.661

Note: The EFA was conducted using data from the 2017 Long-Stay Resident Quality of Life Survey. Factor loadings in bolded red indicate the recommended item placement.

*Item reversed when calculating domain scores.

We propose dividing Factor 3 into two domains for the following reasons. First, the two dimensions identified by the EFA are interpretable concepts: (1) dignified care, and (2) quality of service. Second, items in Factor 3 are almost evenly distributed between the two factors, and dividing Factor 3 in this way would result in greater overall balance among the domains. Finally, the eigenvalue for the second factor is not far from the advised benchmark.

Based on these considerations, we propose a new model for organizing items from the current Long-Stay Resident Quality of Life Survey into domains (See Table 4.1.3.). In this new model, the survey measures long-stay residents' quality of life over the following eight topics or domains: meaningful activities, food enjoyment, dignified care, quality of service, autonomy, environment, communication with staff, and mood.

Table 4.1.3. New Domain Structure for the Long-Stay Resident Quality of Life Survey

Domain	Item
Meaningful Activities (6 Items)	Q1: Are there enough scheduled activities here?
	Q2: Do you like the activities that are scheduled here?
	Q3: Do you have something to look forward to most days?
	Q4: Are there things you do on the weekends that you enjoy?
	Q5: Are you given the chance to do things that are meaningful to you?
	Q30: Are you friends with anyone who lives here?
Food Enjoyment (4 Items)	Q6: Do you like the food here?
	Q7: Do you get your favorite foods here?
	Q8: Does the menu change enough?
	Q9: Do you enjoy the mealtimes here?
Dignified Care (6 Items)	Q18: Do the people who work here treat you politely?
	Q19: Do the people who work here listen to you?
	Q21: Are the people who work here gentle with your care?
	Q22: Do the people who work here respect your modesty?
	Q24: Do the people who work here do things the way you want them done?
	Q36: Do the people who work here ever get angry at you?*
Quality of Service (8 Items)	Q26: Are your concerns taken care of in a timely manner?
	Q29: Do the people who work here seem happy to work here?
	Q31: Do you get help when you need it in a timely manner?
	Q33: Do the people who work here check often enough to see if you need anything?
	Q35: Do the same people take care of your most of the time?
	Q37: Do the people who work here go above and beyond to give you a good life?
	Q38: Would you recommend [name of facility] to someone who needs care?
	Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?* ^a
Autonomy (5 Items)	Q10: Is it easy for you to get around in your room?
	Q11: Can you get to the things you need in your room?

Domain	Item
	Q13: Can you enjoy the outdoors when you want to?
	Q20: Do the people who work here let you do the things you can do for yourself?
	Q23: Can you get up in the morning at the time you want?
Environment (5 Items)	Q12: Does noise keep you awake at night?*
	Q14: Can you find a place to be alone when you want to be alone?
	Q15: Do you feel you have enough privacy?
	Q16: Are your personal items safe here?
	Q17: Do you feel safe here?
Communication with Staff (5 Items)	Q25: Are you encouraged to speak up about things you don't like here?
	Q27: Do the people who work here stop by just to talk?
	Q28: Do the people who work here talk with you about things that are important to you?
	Q32: Do the people who work here tell you what they are doing when they care for you?
	Q34: Do the people who work here ask to come in before entering your room?
Mood (9 Items)	Q40: In the past two weeks, how often have you felt bored?
	Q41: In the past two weeks, how often have you felt angry?
	Q42: In the past two weeks, how often have you felt relaxed?*
	Q43: In the past two weeks, how often have you felt worried?
	Q44: In the past two weeks, how often have you felt interested in things?*
	Q45: In the past two weeks, how often have you felt sad or unhappy?
	Q46: In the past two weeks, how often have you felt afraid?
	Q47: In the past two weeks, how often have you felt lonely?
	Q48: In the past two weeks, how often have you felt happy?*

*Item reversed when calculating domain scores.

^aQ39 was excluded from the EFA because it is currently measured and incorporated into the facility domain score differently from other items. Sensitivity analyses, however, suggest that Q39 fits best within the Quality of Service Domain.

4.2. Confirmatory Factor Analyses: Comparing the Current and New Domain Structures for the Long-Stay Resident Quality of Life Survey

CFA are utilized to assess the fit of the domains specified in the current model of domains (outlined in Table 1) and the new model of domains (outlined in Table 4.1.3.). In turn, statistics from the current and new models are compared to determine which model more closely represents underlying patterns in residents' responses.

Factor loadings from the CFA for the current model of domains are presented in Table A.1. in the Appendix. Both the RMSEA (0.026) and the SRMR (0.054) statistics for the current model suggest that the model fits the data well. The CFI and TFI also surpass the 0.90 threshold for a satisfactory model, with values of 0.932 and 0.926 respectively. Overall, these fit statistics indicate that the current set of domains meets the standards for satisfactory model fit; however, there is room for improvement.

Factor loadings from the CFA for the new model of domains are presented in Table A.2. in the Appendix. Both the RMSEA (0.022) and the SRMR (0.044) statistics for the new model suggest that the model fits the data well. The CFI statistic (0.952) surpasses and the TFI statistic (0.948) is just below the 0.95 threshold for a well-fitted model. Overall, these fit statistics suggest that the new set of domains satisfy the standards for a well-fitted model.

The fit statistics for the current model and the new model of domains are compared in Table 4.2.1. Fit statistics suggest that the new model of domains is more reflective of the underlying patterns in residents’ responses than the current model. However, the differences in fit between the two models are modest.

Table 4.2.1. Comparing Fit Statistics for the Current and New Model of Domains

	Current Model	New Model
RMSEA	0.026	0.022
CFI	0.932	0.952
TFI	0.926	0.948
SRMR	0.054	0.044

Note: These statistics all range from 0-1. A RMSEA of 0.05 or less and a SRMR of 0.08 or less are indicative of a well-fitted model. For CFI and TFI, a value of 0.90 or greater is generally considered to be indicative of satisfactory fit, while a value of 0.95 or greater is considered to be indicative of good fit.

4.3. Evaluating Items in the Long-Stay Resident Quality of Life Survey

In this section, individual items within the Long-Stay Resident Quality of Life Survey are evaluated based on the following criteria: construct validity, correlation with other items, frequency of endorsement, percentage missing, balance of items across domains, and content validity. After weighing these criteria, we make two sets of recommendations. First, we make item recommendations in the event that the current set of domains are maintained. Second, we make item recommendations in the event that the new set of domains are adopted.

Recommendations for the Current Domain Structure

Items were evaluated against the criteria outlined above for the current model of domains; see Table A.3. in the Appendix for a detailed evaluation of each item. Upon weighing the criteria, we make the following recommendations in the event the current set of domains is maintained.

Q10: Is it easy for you to get around in your room?

Q10 is highly correlated with Q11, “Can you get to the things you need in your room?” (correlation coefficient= 0.79), suggesting that the two items may be measuring redundant aspects of resident quality of life. The two items have nearly identical CFA factor loadings (Q10: 0.66; Q11: 0.67), item-rest correlations (Q10: 0.39; Q11: 0.39), frequencies of endorsement (Q10: 85.07%; Q11: 85.96%), and percentages missing (Q10: 4.72%; Q11: 5.10%). An assessment of the content of these items suggested that these items are tapping

into very similar aspects of environment, namely residents' ability to access features and items in their room. In addition, removing this item would result in greater balance across the domains. Between Q10 and Q11, we decided to recommend Q10 for removal from the survey because it had a smaller factor loading; also, from a content perspective, we believe that the reason a resident would desire greater ease in getting around their room is to get to the things they need.

Q18: Do the people who work here treat you politely?

Q18 was strongly correlated with a number of other items (Q19 "Do the people who work here listen to you?" (correlation coefficient=0.81); Q21 "Are the people who work here gentle with your care?" (correlation coefficient=0.82); Q24 "Do the people who work here do things the way you want them done?" (correlation coefficient=0.74); Q29 "Do the people who work here seem happy to work here?" (correlation coefficient=0.77); & Q31 "Do you get help when you need it in a timely manner?" (correlation coefficient=0.74)). This suggests that Q18 does not contribute much unique information regarding residents' quality of life. The item also had an extremely high level of endorsement (95% agreement), suggesting that the item is not very useful in differentiating among residents in terms of quality of life. As a result, we maintain that removing this item would reduce burden for respondents' taking the survey without harming the validity or reliability of the survey.

Q35: Do the same people take care of you most of the time?

Q35 did not load highly on the caregiving domain (CFA factor loading = 0.40), suggesting that it is not a strong predictor of caregiving as currently measured. In addition, Q35 had a small item-rest correlation (correlation coefficient=0.22), suggesting it is weakly related to other items in the caregiving domain. The item appears to be an indicator of staff turnover, which is measured elsewhere in the nursing facility report card. Furthermore, removing Q35 from the survey would result in more balanced domains. Based on these considerations, we believe that removing Q35 from the survey would improve the validity and reliability of the caregiving domain, while also reducing respondent burden.

Q38: Would you recommend [name of facility] to someone who needs care?; & Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?

Although Q38 and Q39 are currently considered indicators of caregiving, we maintain that these items are not specific to the caregiving domain. Although the care residents receive may inform residents' overall assessments of a facility, these assessments may also be based on their evaluation of other domains, such as meaningful activities and food enjoyment. Therefore, to improve the content validity of the domains, we recommend that Q38 and Q39 are moved from the caregiving domain to a separate domain termed "resident global assessment". Q38 should be scored as the percent positive responses (i.e., proportion of facility residents agreeing that they would recommend the facility). For Q39, a facility percent positive score should be calculated in the same manner as it is currently calculated. In particular, residents' responses should be assigned points as follows: "A" 4 points, "B" 3

points, “C” 2 points, “D” 1 point and “F” zero points. The points for all residents giving a valid response in a facility should be summed, and this total should then be divided by the maximum total points that the facility could have earned. The facility percent positive responses for Q38 and Q39 should then be averaged together to create a score for the domain.

Currently, residents’ responses to each item are averaged to create domain scores for each facility, and a facility’s domain scores are averaged to calculate a composite long-stay resident quality of life score for each facility. This approach ensures that each domain is given an equal weight in the overall quality of life score; however, depending on the number of items in a domain, some items may have more weight on the overall quality of life score than other items. To maintain consistency with this current approach, the new resident global assessment domain would be given equal weight to the other domains when calculating composite resident quality of life scores. Given that the resident global assessment domain consists of fewer items than the other quality of life domains, both Q38 and Q39 will have a greater influence on facilities’ composite resident quality of life scores than items in other domains. We maintain that this lack of balance is warranted given that residents’ assessments of whether to recommend a facility and of the grade they would give a facility seem to be particularly important indicators of resident quality of life. In the future, however, the Minnesota Department of Human Services may want to explore other approaches to weighting domain scores when calculating facilities’ composite quality of life scores. Notably, residents and family members might view some domains as being more important than others. Their preferences, obtained through surveys or focus groups, could be used to assign weights to the domains.

Table 4.3.1. demonstrates how removing items Q10, Q18, and Q35 from the survey and creating a new resident global assessment domain influences the balance and content of the current set of domains.

Table 4.3.1. Current Domain Structure with Item Recommendations Implemented

Domain	Item
Meaningful Activities (5 Items)	Q1: Are there enough scheduled activities here?
	Q2: Do you like the activities that are scheduled here?
	Q3: Do you have something to look forward to most days?
	Q4: Are there things you do on the weekends that you enjoy?
	Q5: Are you given the chance to do things that are meaningful to you?
Food Enjoyment (4 Items)	Q6: Do you like the food here?
	Q7: Do you get your favorite foods here?
	Q8: Does the menu change enough?
	Q9: Do you enjoy the mealtimes here?
Environment (7 Items)	Q11: Can you get to the things you need in your room?
	Q12: Does noise keep you awake at night?*
	Q13: Can you enjoy the outdoors when you want to?
	Q14: Can you find a place to be alone when you want to be alone?
	Q15: Do you feel you have enough privacy?

Domain	Item
	Q16: Are your personal items safe here?
	Q17: Do you feel safe here?
Dignity (4 Items)	Q19: Do the people who work here listen to you?
	Q20: Do the people who work here let you do the things you can do for yourself?
	Q21: Are the people who work here gentle with your care?
	Q22: Do the people who work here respect your modesty?
Autonomy (4 Items)	Q23: Can you get up in the morning at the time you want?
	Q24: Do the people who work here do things the way you want them done?
	Q25: Are you encouraged to speak up about things you don't like here?
	Q26: Are your concerns taken care of in a timely manner?
Relationships (4 Items)	Q27: Do the people who work here stop by just to talk?
	Q28: Do the people who work here talk with you about things that are important to you?
	Q29: Do the people who work here seem happy to work here?
	Q30: Are you friends with anyone who lives here?
Caregiving (6 Items)	Q31: Do you get help when you need it in a timely manner?
	Q32: Do the people who work here tell you what they are doing when they care for you?
	Q33: Do the people who work here check often enough to see if you need anything?
	Q34: Do the people who work here ask to come in before entering your room?
	Q36: Do the people who work here ever get angry at you?*
	Q37: Do the people who work here go above and beyond to give you a good life?
Resident Global Assessment (2 Items)	Q38: Would you recommend [name of facility] to someone who needs care?
	Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be? ^a

Note: Items from the mood domain (Q40-Q48) were not included in the EFA or CFA and, in turn, are not displayed above. These items are conceptually distinct and measured differently from items in the other domains; therefore, we recommend that items Q40-Q48 continue to be grouped together as a mood domain.

*Item reversed when calculating domain scores.

^aThe response categories were reverse coded 0=F, 1=D, 2=C, 3=B, 4=A, so that higher values are associated with more positive assessments.

Recommendations for the New Domain Structure

Items were evaluated against the criteria outlined above for the new model of domains; see Table A.4. in the Appendix for a detailed evaluation of each item. Our recommendations for the new model of domains are largely consistent with our recommendations for the current model of domains. We once again recommend that Q10 (“Is it easy for you to get around in your room?”), Q18 (“Do the people who work here treat you politely?”), and Q35 (“Do the same people take care of your most of the time?”) are removed from the new model for the same reasons as listed for the current model. We also recommend that Q38 (“Would you recommend [name of facility]

to someone who needs care?") and Q39 ("Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?") are moved from the quality of service domain to a separate domain termed "resident global assessment."

In addition to these recommendations, we recommend that Q30 is removed from the survey for the new model of domains.

Q30: Are you friends with anyone who lives here?

Q30 did not load highly on the meaningful activities domain (CFA factor loading=0.41), suggesting that it is not a strong predictor of meaningful activities. In addition, Q30 had a small item-rest correlation (0.24), suggesting it is weakly related to the other items in the meaningful activities domain. During focus groups with nursing facility administrators and quality experts, concerns about the measure were raised; specifically, some felt that the measure did not reflect overall relationship quality in the facility, but rather residents' varying definitions of what it means to be a friend. Furthermore, removing Q30 from the new model of domains would not result in unbalanced domains. Based on these considerations, we believe that omitting Q30 from the survey would improve the validity and reliability of the new structure of domains, while also reducing respondent burden.

Table 4.3.2. demonstrates how removing items Q10, Q18, Q30, and Q35 from the survey and creating a new resident global assessment domain influences the balance and content of the new set of domains.

Table 4.3.2. New Domain Structure with Recommended Items Removed

Domain	Item
Meaningful Activities (5 Items)	Q1: Are there enough scheduled activities here?
	Q2: Do you like the activities that are scheduled here?
	Q3: Do you have something to look forward to most days?
	Q4: Are there things you do on the weekends that you enjoy?
	Q5: Are you given the chance to do things that are meaningful to you?
Food Enjoyment (4 Items)	Q6: Do you like the food here?
	Q7: Do you get your favorite foods here?
	Q8: Does the menu change enough?
	Q9: Do you enjoy the mealtimes here?
Dignified Care (5 Items)	Q19: Do the people who work here listen to you?
	Q21: Are the people who work here gentle with your care?
	Q22: Do the people who work here respect your modesty?
	Q24: Do the people who work here do things the way you want them done?
Quality of Service (5 Items)	Q36: Do the people who work here ever get angry at you?*
	Q26: Are your concerns taken care of in a timely manner?
	Q29: Do the people who work here seem happy to work here?
	Q31: Do you get help when you need it in a timely manner?
	Q33: Do the people who work here check often enough to see if you need anything?

Domain	Item
	Q37: Do the people who work here go above and beyond to give you a good life?
Autonomy (4 Items)	Q11: Can you get to the things you need in your room?
	Q13: Can you enjoy the outdoors when you want to?
	Q20: Do the people who work here let you do the things you can do for yourself?
	Q23: Can you get up in the morning at the time you want?
Environment (5 Items)	Q12: Does noise keep you awake at night?*
	Q14: Can you find a place to be alone when you want to be alone?
	Q15: Do you feel you have enough privacy?
	Q16: Are your personal items safe here?
	Q17: Do you feel safe here?
Communication with Staff (5 Items)	Q25: Are you encouraged to speak up about things you don't like here?
	Q27: Do the people who work here stop by just to talk?
	Q28: Do the people who work here talk with you about things that are important to you?
	Q32: Do the people who work here tell you what they are doing when they care for you?
	Q34: Do the people who work here ask to come in before entering your room?
Resident Global	Q38: Would you recommend [name of facility] to someone who needs care?
Assessment (2 Items)	Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be? ^a

Note: Items from the mood domain (Q40-Q48) were not included in the EFA or CFA and, in turn, are not displayed above. These items are conceptually distinct and measured differently from items in the other domains; therefore, we recommend that items Q40-Q48 continue to be grouped together as a mood domain.

*Item reversed when calculating domain scores.

^aThe response categories were reverse coded 0=F, 1=D, 2=C, 3=B, 4=A, so that higher values are associated with more positive assessments.

Comparing full models versus models with item recommendations implemented

Confirmatory factor analyses were then conducted to compare the fit of the current and new domain structures when item recommendations are versus are not implemented (see Table 4.3.3.). CFA for the current model suggest that removing items Q10, Q18, and Q35 from the survey and creating a new resident global assessment domain does not weaken model fit, but actually results in improved model fit—although the difference in fit between the two models is modest. Similarly, CFA for the new model suggest that removing items Q10, Q18, Q30, and Q35 from the survey and creating a new resident global assessment domain leads to a slight improvement in model fit. Overall, the new model of domains with item recommendations implemented is the best fitting model; it also is the shortest survey, and thus imposes the least burden on residents.

Table 4.3.3. Comparing Fit Statistics for the Current and New Model of Domains

	Current Model (Full)	Current Model (Item Recommendations Implemented)	New Model (Full)	New Model (Item Recommendations Implemented)
RMSEA	0.026	0.023	0.022	0.019
CFI	0.932	0.949	0.952	0.967
TFI	0.926	0.944	0.948	0.963
SRMR	0.054	0.048	0.044	0.039

Note: These statistics all range from 0-1. A RMSEA of 0.05 or less and a SRMR of 0.08 or less are indicative of a well-fitted model. For CFI and TFI, a value of 0.90 or greater is generally considered to be indicative of satisfactory fit, while a value of 0.95 or greater is considered to be indicative of good fit.

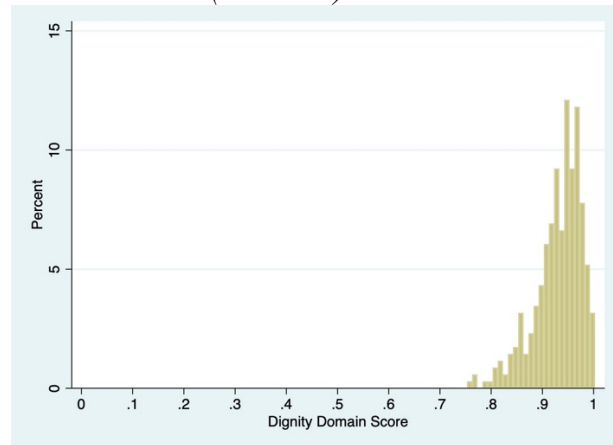
Items from the mood domain (Q40-Q48) were not included in the EFA or CFA because these items are conceptually distinct and measured differently from items in the other domains. We recommend that items Q40-Q48 continue to be grouped together as a mood domain.

4.4 Distribution of facility domain scores

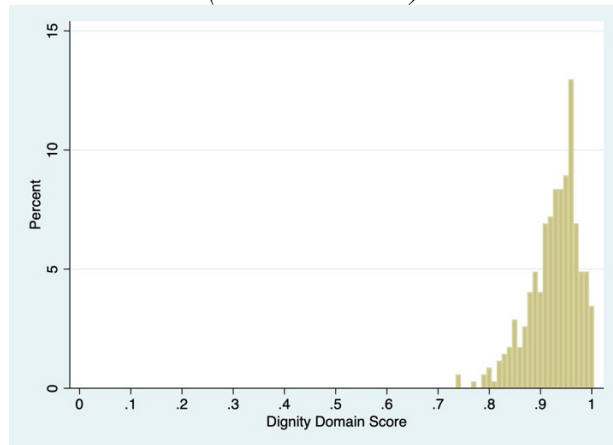
Descriptive analyses were conducted to compare how the specification of domains for each model affects the distribution of facility domain scores. Means, standard deviations, and ranges for the facility domain scores for each model are presented in Table A.5. in the Appendix. See Figures A.1.-A.4. for histograms, or visual representations of the distribution of facility domain scores for each model. Overall, differences in the distributions of facility domain scores across the four models were modest. One of the most notable differences was observed when comparing the current structure of domains to the new structure of domains. In both the current model with all items included and the current model with all item recommendations implemented, the dignity domain exhibited evidence of a ceiling effect, with a mean of about 0.93 and a standard deviation of about 0.05 in both models. None of the domains in the new model exhibited as strong of a ceiling effect. The dignity domain’s counterpart in the new model (dignified care) has a more normal distribution (mean with all items included = 0.90, mean with item recommendations implemented = 0.89, standard deviation for both new models = 0.06). Histograms for the dignity and dignified care domains are presented below in Figure 4.3.1.

Figure 4.3.1. Distribution of Facility Dignity Domain and Dignified Care Domain Scores

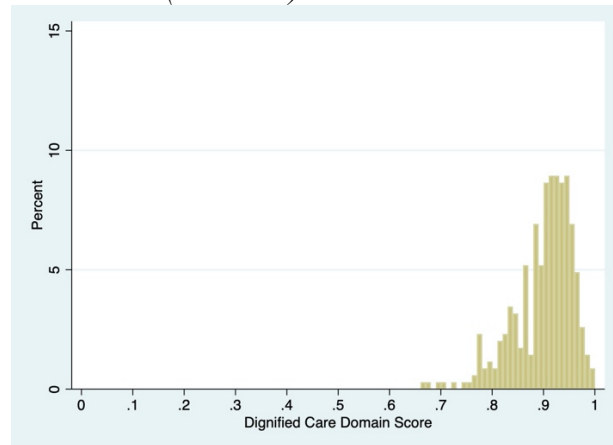
Current Model (All Items)



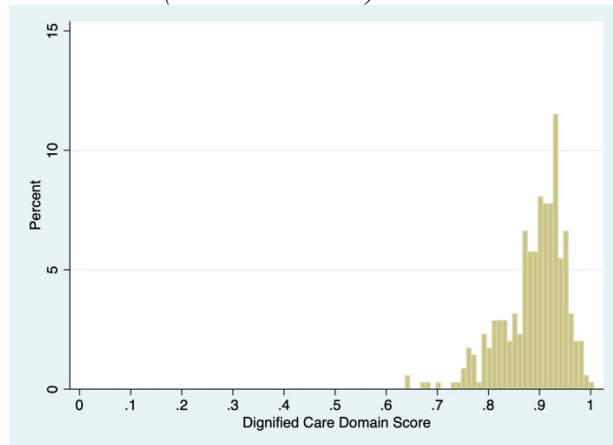
Current Model (Items Removed)



New Model (All Items)



New Model (Items Removed)



Note: Facility domain scores were calculated using data from the 2019 Long-Stay Resident Quality of Life Survey.

5. Summary of Findings

The purpose of this report was to explore opportunities for enhancing the validity and reliability and reducing the length of the Long-Stay Resident Quality of Life Survey. Findings point to multiple strategies for achieving this aim. First, based on exploratory and confirmatory factor analyses, we propose a new approach to structuring domains of quality of life that better fits with underlying patterns in the data. In this new structure, there are 8 domains of quality of life: meaningful activities, food enjoyment, dignified care, quality of service, autonomy, environment, communication with staff, and mood (See Summary Table 5.1. for more detail regarding how the items are organized into domains).

Second, after weighing a number of criteria (construct validity, correlations among items, frequency of endorsement, percentage missing, the balance of items across domains, and content validity), we identify items whose omission from the current and/or new domain structures

would enhance the validity and reliability of the domain scores. We recommend omitting the following items from both the current and new set of domains: (Q10) Is it easy for you to get around in your room? (Q18) Do the people who work here treat you politely? and (Q35) Do the same people take care of your most of the time? In the event that the new structure of domains is adopted, we also propose that Q30 (“Are you friends with anyone who lives here?”) is omitted. See Summary Tables 5.1. and 5.2. for a more detailed description of the rationale for these recommendations. An advantage of removing the items from the survey is that it would reduce the length of the survey and, in turn, reduce the cognitive burden associated with taking the survey.

Regardless of whether the new or current domain structures are employed, we recommend that Q38 (“Would you recommend [name of facility] to someone who needs care?”) and Q39 (“Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?”) are moved to a separate domain termed “resident global assessment”. This recommendation is made to improve the content validity of the domains, given that residents’ responses to Q38 and Q39 may be influenced by multiple domains of quality of life.

The new domain structure has several advantages over the current domain structure, especially in the event that the item recommendations are implemented. The new domain structure is the best-fitting and has more balanced domains. In addition, the new domain structure results in a more normal distribution of facility domain scores; specifically, none of the new domain scores exhibit as extreme of a ceiling affect as the current version of the dignity domain. Finally, in the event the recommended items are removed from the survey, the new domain structure would include the fewest items (44 items) and impose the least burden on residents.

Overall, our analyses suggest that adopting the new structure of domains with the item recommendations implemented is the most promising approach for enhancing the validity and reliability and reducing the length of the survey. However, we maintain that any of the recommendations above, alone or in combination, would improve the Long-Stay Resident Quality of Life Survey.

Tables Summarizing Recommendations for the Current and New Domain Structures

The following tables summarize the item-by-item recommendations for the Long-Stay Resident Quality of Life Survey in the event the new domain structure is adopted (Summary Table 5.1.) or the current domain structure is retained (Summary Table 5.2.).

Summary Table 5.1. Item Recommendations for New Structure of Domains

Domains	Item Recommendations
<p><i>Meaningful Activities</i></p> <ul style="list-style-type: none"> • Q1: Are there enough scheduled activities here? • Q2: Do you like the activities that are scheduled here? • Q3: Do you have something to look forward to most days? • Q4: Are there things you do on the weekends that you enjoy? • Q5: Are you given the chance to do things that are meaningful to you? • Q30: Are you friends with anyone who lives here? 	<p>Remove from survey:</p> <ul style="list-style-type: none"> • Q30 <p><i>Criteria:</i> Small CFA factor loading suggests lacks construct validity; Weak correlations suggest weak relationship with other domain items; Qualitative data suggests this item lacks content validity</p>
<p><i>Food Enjoyment</i></p> <ul style="list-style-type: none"> • Q6: Do you like the food here? • Q7: Do you get your favorite foods here? • Q8: Does the menu change enough? • Q9: Do you enjoy the mealtimes here? 	<p>None</p>
<p><i>Environment</i></p> <ul style="list-style-type: none"> • Q12: Does noise keep you awake at night? • Q14: Can you find a place to be alone when you want to be alone? • Q15: Do you feel you have enough privacy? • Q16: Are your personal items safe here? • Q17: Do you feel safe here? 	<p>None</p>
<p><i>Dignified Care</i></p> <ul style="list-style-type: none"> • Q18: Do the people who work here treat you politely? • Q19: Do the people who work here listen to you? • Q21: Are the people who work here gentle with your care? • Q22: Do the people who work here respect your modesty? • Q24: Do the people who work here do things the way you want them done? • Q36: Do the people who work here ever get angry at you? 	<p>Remove from survey:</p> <ul style="list-style-type: none"> • Q18 <p><i>Criteria:</i> Strongly correlated with other items, suggesting adds little unique information; Exhibits a high frequency of endorsement (ceiling effect)</p>

Domains	Item Recommendations
<p><i>Autonomy</i></p> <ul style="list-style-type: none"> • Q10: Is it easy for you to get around in your room? • Q11: Can you get to the things you need in your room? • Q13: Can you enjoy the outdoors when you want to? • Q20: Do the people who work here let you do the things you can do for yourself? • Q23: Can you get up in the morning at the time you want? 	<p>Remove from survey:</p> <ul style="list-style-type: none"> • Q10 <i>Criteria:</i> Strongly correlated with another item, suggesting adds little unique information; Removal would increase balance across domains
<p><i>Quality of Service</i></p> <ul style="list-style-type: none"> • Q26: Are your concerns taken care of in a timely manner? • Q29: Do the people who work here seem happy to work here? • Q31: Do you get help when you need it in a timely manner? • Q33: Do the people who work here check often enough to see if you need anything? • Q35: Do the same people take care of your most of the time? • Q37: Do the people who work here go above and beyond to give you a good life? • Q38: Would you recommend [name of facility] to someone who needs care? • Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be? 	<p>Remove from survey:</p> <ul style="list-style-type: none"> • Q35 <i>Criteria:</i> Small CFA factor loading suggests lacks construct validity; Weak correlations suggest weak relationship with other domain items; Removal would increase balance across domains <p>Remove from quality of service domain, move to a new domain that measures resident global assessment:</p> <ul style="list-style-type: none"> • Q38 & Q39 <i>Criteria:</i> Lack content validity because not specific to the quality of service domain
<p><i>Communication with Staff</i></p> <ul style="list-style-type: none"> • Q25: Are you encouraged to speak up about things you don't like here? • Q27: Do the people who work here stop by just to talk? • Q28: Do the people who work here talk with you about things that are important to you? • Q32: Do the people who work here tell you what they are doing when they care for you? • Q34: Do the people who work here ask to come in before entering your room? 	<p>None</p>

Domains	Item Recommendations
<p><i>Mood</i></p> <ul style="list-style-type: none"> • In the past two weeks, how often have you felt: <ul style="list-style-type: none"> ○ Q40: bored? ○ Q41: angry? ○ Q42: relaxed? ○ Q43: worried? ○ Q44: interested in things? ○ Q45: sad or unhappy? ○ Q46: afraid? ○ Q47: lonely? ○ Q48: happy? 	None

Summary Table 5.2. Item Recommendations for Current Structure of Domains

Domains	Item Recommendations
<p><i>Meaningful Activities</i></p> <ul style="list-style-type: none"> • Q1: Are there enough scheduled activities here? • Q2: Do you like the activities that are scheduled here? • Q3: Do you have something to look forward to most days? • Q4: Are there things you do on the weekends that you enjoy? • Q5: Are you given the chance to do things that are meaningful to you? 	None
<p><i>Food Enjoyment</i></p> <ul style="list-style-type: none"> • Q6: Do you like the food here? • Q7: Do you get your favorite foods here? • Q8: Does the menu change enough? • Q9: Do you enjoy the mealtimes here? 	None
<p><i>Environment</i></p> <ul style="list-style-type: none"> • Q10: Is it easy for you to get around in your room? • Q11: Can you get to the things you need in your room? • Q12: Does noise keep you awake at night? • Q13: Can you enjoy the outdoors when you want to? • Q14: Can you find a place to be alone when you want to be alone? • Q15: Do you feel you have enough privacy? • Q16: Are your personal items safe here? • Q17: Do you feel safe here? 	<p>Remove from survey:</p> <ul style="list-style-type: none"> • Q10 <p><i>Criteria:</i> Strongly correlated with another item, suggesting adds little unique information; Removal would increase balance across domains</p>
<p><i>Dignity</i></p> <ul style="list-style-type: none"> • Q18: Do the people who work here treat you politely? • Q19: Do the people who work here listen to you? • Q20: Do the people who work here let you do the things you can do for yourself? • Q21: Are the people who work here gentle with your care? • Q22: Do the people who work here respect your modesty? 	<p>Remove from survey:</p> <ul style="list-style-type: none"> • Q18 <p><i>Criteria:</i> Strongly correlated with other items, suggesting adds little unique information; Exhibits a high frequency of endorsement (ceiling effect)</p>
<p><i>Autonomy</i></p> <ul style="list-style-type: none"> • Q23: Can you get up in the morning at the time you want? • Q24: Do the people who work here do things the way you want them done? • Q25: Are you encouraged to speak up about things you don't like here? 	None

Domains	Item Recommendations
<ul style="list-style-type: none"> • Q26: Are your concerns taken care of in a timely manner? 	
<p>Relationships</p> <ul style="list-style-type: none"> • Q27: Do the people who work here stop by just to talk? • Q28: Do the people who work here talk with you about things that are important to you? • Q29: Do the people who work here seem happy to work here? • Q30: Are you friends with anyone who lives here? 	None
<p>Caregiving</p> <ul style="list-style-type: none"> • Q31: Do you get help when you need it in a timely manner? • Q32: Do the people who work here tell you what they are doing when they care for you? • Q33: Do the people who work here check often enough to see if you need anything? • Q34: Do the people who work here ask to come in before entering your room? • Q35: Do the same people take care of your most of the time? • Q36: Do the people who work here ever get angry at you? • Q37: Do the people who work here go above and beyond to give you a good life? • Q38: Would you recommend [name of facility] to someone who needs care? • Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be? 	<p>Remove from survey:</p> <ul style="list-style-type: none"> • Q35 Criteria: Small CFA factor loading suggests lacks construct validity; Weak correlations suggest weak relationship with other domain items; Removal would increase balance across domains <p>Remove from caregiving domain, move to a new domain that measures resident global assessment:</p> <ul style="list-style-type: none"> • Q38 & Q39 Criteria: Lack content validity because not specific to the caregiving domain
<p>Mood</p> <ul style="list-style-type: none"> • In the past two weeks, how often have you felt: <ul style="list-style-type: none"> ○ Q40: bored? ○ Q41: angry? ○ Q42: relaxed? ○ Q43: worried? ○ Q44: interested in things? ○ Q45: sad or unhappy? ○ Q46: afraid? ○ Q47: lonely? ○ Q48: happy? 	None

6. Recommendations

Recommended Action: Adopt the new structure of domains (i.e. meaningful activities, food enjoyment, dignified care, quality of service, autonomy, environment, communication with staff, and mood).

This new domain structure has several advantages. First, the new domains are more consistent with underlying patterns in the data, suggesting that the domains are more valid and reliable. Second, the new domain structure results in more balanced domains, which makes it easier to compare variability in domain scores across domains. Third, the new domain structure results in a more normal distribution of facility domain scores, which makes it easier to distinguish among facilities in terms of quality of life.

Recommended Action: Move Q38 (“Would you recommend [name of facility] to someone who needs care?”) and Q39 (“Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be?”) to a separate domain termed “resident global assessment”.

This recommendation is made to improve the content validity of the domains, given that residents’ responses to Q38 and Q39 may be influenced by multiple domains of quality of life. Q38 should be scored as the percent positive responses (i.e., proportion of facility residents agreeing that they would recommend the facility). For Q39, a facility percent positive score should be calculated in the same manner as it is currently calculated. In particular, residents’ responses should be assigned points as follows: “A” 4 points, “B” 3 points, “C” 2 points, “D” 1 point and “F” zero points. The points for all residents giving a valid response in a facility should be summed, and this total should then be divided by the maximum total points that the facility could have earned. The facility percent positive responses for Q38 and Q39 should then be averaged together to create a score for the domain. To be consistent with the current approach for calculating a composite measure of resident quality of life, this new resident global assessment domain should be given equal weight to the other domains. In the future, however, the Minnesota Department of Human Services may want to explore other approaches to weighting domain scores, such as assigning weights based on residents’ and their families’ assessments of which domains are more important for quality of life.

Recommended Action: In the event the new domain structure is adopted, remove the following items from the Long-Stay Resident Quality of Life Survey:

- **Q10:** Is it easy for you to get around in your room?
- **Q18:** Do the people who work here treat you politely?
- **Q30:** Are you friends with anyone who lives here?
- **Q35:** Do the same people take care of your most of the time?

Omitting these items would improve the validity, reliability, and balance of domains. Refer to Summary Table 5.1. for a more detailed description of the rationale for these recommendations. An additional advantage of removing the items from the survey is that it would reduce the length of the survey and, in turn, reduce the cognitive burden associated with taking the survey.

Recommended Action: In the event the current domain structure is maintained, remove the following items from the Long-Stay Resident Quality of Life Survey:

- **Q10:** Is it easy for you to get around in your room?

- **Q18:** Do the people who work here treat you politely?
- **Q35:** Do the same people take care of you most of the time?

Omitting these items would improve the validity, reliability, and balance of domains. Refer to Summary Table 5.2. for a more detailed description of the rationale for these recommendations. An additional advantage of removing the items from the survey is that it would reduce the length of the survey and, in turn, reduce the cognitive burden associated with taking the survey.

Appendix

Table A.1. Confirmatory Factor Analysis Results for the Current Model of Domains

Domain	Items	CFA Factor Loading
Meaningful Activities	Q1: Are there enough scheduled activities here?	0.709
	Q2: Do you like the activities that are scheduled here?	0.723
	Q3: Do you have something to look forward to most days?	0.687
	Q4: Are there things you do on the weekends that you enjoy?	0.701
	Q5: Are you given the chance to do things that are meaningful to you?	0.852
Food Enjoyment	Q6: Do you like the food here?	0.827
	Q7: Do you get your favorite foods here?	0.820
	Q8: Does the menu change enough?	0.735
	Q9: Do you enjoy the mealtimes here?	0.919
Environment	Q10: Is it easy for you to get around in your room?	0.663
	Q11: Can you get to the things you need in your room?	0.670
	Q12: Does noise keep you awake at night?*	-0.383
	Q13: Can you enjoy the outdoors when you want to?	0.600
	Q14: Can you find a place to be alone when you want to be alone?	0.666
	Q15: Do you feel you have enough privacy?	0.802
	Q16: Are your personal items safe here?	0.738
	Q17: Do you feel safe here?	0.862
Dignity	Q18: Do the people who work here treat you politely?	0.876
	Q19: Do the people who work here listen to you?	0.887
	Q20: Do the people who work here let you do the things you can do for yourself?	0.644
	Q21: Are the people who work here gentle with your care?	0.849
	Q22: Do the people who work here respect your modesty?	0.818
Autonomy	Q23: Can you get up in the morning at the time you want?	0.511
	Q24: Do the people who work here do things the way you want them done?	0.812
	Q25: Are you encouraged to speak up about things you don't like here?	0.628
	Q26: Are your concerns taken care of in a timely manner?	0.819

Domain	Items	CFA Factor Loading
Relationships	Q27: Do the people who work here stop by just to talk?	0.642
	Q28: Do the people who work here talk with you about things that are important to you?	0.846
	Q29: Do the people who work here seem happy to work here?	0.893
	Q30: Are you friends with anyone who lives here?	0.365
Caregiving	Q31: Do you get help when you need it in a timely manner?	0.827
	Q32: Do the people who work here tell you what they are doing when they care for you?	0.714
	Q33: Do the people who work here check often enough to see if you need anything?	0.788
	Q34: Do the people who work here ask to come in before entering your room?	0.533
	Q35: Do the same people take care of your most of the time?	0.402
	Q36: Do the people who work here ever get angry at you?*	-0.551
	Q37: Do the people who work here go above and beyond to give you a good life?	0.818
	Q38: Would you recommend [name of facility] to someone who needs care?	0.879
	Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be? ^a	0.693

Note: The CFA was conducted using data from the 2018 and 2019 Long-Stay Resident Quality of Life Surveys. Items from the mood domain (Q40-Q48) were not included in the EFA or CFA and, in turn, are not displayed above. These items are conceptually distinct and measured differently from items in the other domains; therefore, we recommend that items Q40-Q48 continue to be grouped together as a mood domain.

*Item reversed when calculating domain scores.

^aThe response categories were reverse coded 0=F, 1=D, 2=C, 3=B, 4=A, so that higher values are associated with more positive assessments.

Table A.2. Confirmatory Factor Analysis Results for the New Model of Domains

Domain	Item	CFA Factor Loading
Meaningful Activities	Q1: Are there enough scheduled activities here?	0.707
	Q2: Do you like the activities that are scheduled here?	0.720
	Q3: Do you have something to look forward to most days?	0.686
	Q4: Are there things you do on the weekends that you enjoy?	0.701
	Q5: Are you given the chance to do things that are meaningful to you?	0.850
	Q30: Are you friends with anyone who lives here?	0.411
Food Enjoyment	Q6: Do you like the food here?	0.828
	Q7: Do you get your favorite foods here?	0.820
	Q8: Does the menu change enough?	0.735
	Q9: Do you enjoy the mealtimes here?	0.918
Dignified Care	Q18: Do the people who work here treat you politely?	0.875
	Q19: Do the people who work here listen to you?	0.885
	Q21: Are the people who work here gentle with your care?	0.848
	Q22: Do the people who work here respect your modesty?	0.820
	Q24: Do the people who work here do things the way you want them done?	0.838
	Q36: Do the people who work here ever get angry at you?*	-0.574
Quality of Service	Q26: Are your concerns taken care of in a timely manner?	0.818
	Q29: Do the people who work here seem happy to work here?	0.824
	Q31: Do you get help when you need it in a timely manner?	0.826
	Q33: Do the people who work here check often enough to see if you need anything?	0.789
	Q35: Do the same people take care of your most of the time?	0.402
	Q37: Do the people who work here go above and beyond to give you a good life?	0.818
	Q38: Would you recommend [name of facility] to someone who needs care?	0.879
	Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be? ^a	0.694
Autonomy	Q10: Is it easy for you to get around in your room?	0.744
	Q11: Can you get to the things you need in your room?	0.754
	Q13: Can you enjoy the outdoors when you want to?	0.678

Domain	Item	CFA Factor Loading
	Q20: Do the people who work here let you do the things you can do for yourself?	0.801
	Q23: Can you get up in the morning at the time you want?	0.651
Environment	Q12: Does noise keep you awake at night?*	-0.391
	Q14: Can you find a place to be alone when you want to be alone?	0.676
	Q15: Do you feel you have enough privacy?	0.820
	Q16: Are your personal items safe here?	0.754
	Q17: Do you feel safe here?	0.877
Communication with Staff	Q25: Are you encouraged to speak up about things you don't like here?	0.688
	Q27: Do the people who work here stop by just to talk?	0.650
	Q28: Do the people who work here talk with you about things that are important to you?	0.861
	Q32: Do the people who work here tell you what they are doing when they care for you?	0.787
	Q34: Do the people who work here ask to come in before entering your room?	0.585

Note: The CFA was conducted using data from the 2018 and 2019 Long-Stay Resident Quality of Life Surveys. Items from the mood domain (Q40-Q48) were not included in the EFA or CFA and, in turn, are not displayed above. These items are conceptually distinct and measured differently from items in the other domains; therefore, we recommend that items Q40-Q48 continue to be grouped together as a mood domain.

*Item reversed when calculating domain scores.

^aThe response categories were reverse coded 0=F, 1=D, 2=C, 3=B, 4=A, so that higher values are associated with more positive assessments.

Table A.3. Evaluation of Items for the Current Model of Long-Stay Resident Quality of Life Domains

Domain	Item	CFA Factor Loading	Item-Rest Correlation	High Item Correlation (> 0.70)^b	Frequency of Endorsement	Percent Missing	Content Validity Concern
Meaningful Activities	Q1: Are there enough scheduled activities here?	0.709	0.39		0.86	9.39	
	Q2: Do you like the activities that are scheduled here?	0.723	0.38		0.84	13.34	
	Q3: Do you have something to look forward to most days?	0.687	0.45		0.74	7.59	
	Q4: Are there things you do on the weekends that you enjoy?	0.701	0.44		0.64	10.74	
	Q5: Are you given the chance to do things that are meaningful to you?	0.852	0.50		0.82	10.53	
Food Enjoyment	Q6: Do you like the food here?	0.827	0.59	Q9: 0.79	0.81	6.62	
	Q7: Do you get your favorite foods here?	0.820	0.53	Q9: 0.71	0.66	11.62	
	Q8: Does the menu change enough?	0.735	0.46		0.75	8.69	
	Q9: Do you enjoy the mealtimes here?	0.919	0.50	Q6: 0.79; Q7: 0.71	0.86	6.57	
Environment	Q10: Is it easy for you to get around in your room?	0.663	0.39	Q11: 0.79	0.85	4.72	
	Q11: Can you get to the things you need in your room?	0.670	0.39	Q10: 0.79	0.86	5.10	
	Q12: Does noise keep you awake at night?*	-0.383	0.19		0.14	2.94	
	Q13: Can you enjoy the outdoors when you want to?	0.600	0.30		0.83	9.89	
	Q14: Can you find a place to be alone when you want to be alone?	0.666	0.34		0.91	5.17	

Domain	Item	CFA Factor Loading	Item-Rest Correlation	High Item Correlation (> 0.70) ^b	Frequency of Endorsement	Percent Missing	Content Validity Concern
	Q15: Do you feel you have enough privacy?	0.802	0.42		0.90	3.06	
	Q16: Are your personal items safe here?	0.738	0.33	Q17: 0.77	0.88	6.68	
	Q17: Do you feel safe here?	0.862	0.34	Q16: 0.77; Q21: 0.72	0.96	2.42	
Dignity	Q18: Do the people who work here treat you politely?	0.876	0.50	Q19: 0.81; Q21: 0.82; Q24: 0.74; Q29: 0.77; Q31: 0.74	0.95	4.35	
	Q19: Do the people who work here listen to you?	0.887	0.52	Q18: 0.81; Q21: 0.79; Q22: 0.74; Q24: 0.73	0.89	7.72	
	Q20: Do the people who work here let you do the things you can do for yourself?	0.644	0.32		0.93	7.42	
	Q21: Are the people who work here gentle with your care?	0.849	0.52	Q17: 0.72; Q18: 0.82; Q19: 0.79; Q22: 0.78; Q26: 0.72; Q29: 0.73; Q31: 0.70	0.94	5.73	
	Q22: Do the people who work here respect your modesty?	0.818	0.45	Q19: 0.74; Q21: 0.78;	0.94	7.28	
Autonomy	Q23: Can you get up in the morning at the time you want?	0.511	0.27		0.81	5.56	

Domain	Item	CFA Factor Loading	Item-Rest Correlation	High Item Correlation (> 0.70) ^b	Frequency of Endorsement	Percent Missing	Content Validity Concern
	Q24: Do the people who work here do things the way you want them done?	0.812	0.42	Q18: 0.74; Q19: 0.73	0.87	8.96	
	Q25: Are you encouraged to speak up about things you don't like here?	0.628	0.33		0.80	13.84	
	Q26: Are your concerns taken care of in a timely manner?	0.819	0.39	Q21: 0.72; Q31: 0.75	0.86	9.41	
Relationships	Q27: Do the people who work here stop by just to talk?	0.642	0.42	Q28: 0.75	0.59	7.39	
	Q28: Do the people who work here talk with you about things that are important to you?	0.846	0.49	Q27: 0.75	0.73	10.42	
	Q29: Do the people who work here seem happy to work here?	0.893	0.26	Q18: 0.77; Q29: 0.73; Q31: 0.71; Q37: 0.70; Q38: 0.77	0.90	11.11	
	Q30: Are you friends with anyone who lives here?	0.365	0.23		0.69	5.60	Yes
Caregiving ^a	Q31: Do you get help when you need it in a timely manner?	0.827	0.50	Q18: 0.74; Q21: 0.70; Q26: 0.75; Q29: 0.71; Q33: 0.72	0.86	6.74	
	Q32: Do the people who work here tell you what they are doing when they care for you?	0.714	0.44		0.81	12.22	

Domain	Item	CFA Factor Loading	Item-Rest Correlation	High Item Correlation (> 0.70) ^b	Frequency of Endorsement	Percent Missing	Content Validity Concern
	Q33: Do the people who work here check often enough to see if you need anything?	0.788	0.51	Q31: 0.72	0.71	9.45	
	Q34: Do the people who work here ask to come in before entering your room?	0.533	0.31		0.80	8.31	
	Q35: Do the same people take care of your most of the time?	0.402	0.22		0.78	8.01	
	Q36: Do the people who work here ever get angry at you?*	-0.551	0.32		0.20	7.98	
	Q37: Do the people who work here go above and beyond to give you a good life?	0.818	0.53	Q29: 0.70; Q38: 0.73	0.79	14.26	
	Q38: Would you recommend [name of facility] to someone who needs care?	0.879	0.55	Q29: 0.77; Q37: 0.73 Q39: 0.74	0.87	7.86	Yes
	Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be? ^a	0.693	0.53	Q38: 0.74	A: 0.32 B: 0.37 C: 0.24 D: 0.05 F: 0.02	9.37	Yes

Note: Bolding indicates that an item is flagged for failing to meet the desirable threshold for a criterion. Items are flagged if their: (a) CFA factor loading is less than 0.600; (b) item-rest correlation is less than 0.30; (c) correlation with another item is greater than or equal to 0.70; (d) frequency of endorsement is 0.95 or greater; or (e) percentage missing is 10 or greater. Items are also flagged if there is a content validity concern. Items are highlighted in red if, after weighing these criteria and considering the balance of items across domains, we recommend that the item be removed from the survey and/or domain score calculations.

*Item reversed when calculating domain scores.

^a The response categories were reverse coded 0=F, 1=D, 2=C, 3=B, 4=A, so that higher values are associated with more positive assessments.

^b For correlations between binary items (Q1-Q38), tetrachoric correlation coefficients are presented. For correlations between Q39 and all other items, a polychoric correlation is presented.

Table A.4. Evaluation of Items for the New Model of Long-Stay Resident Quality of Life Domains

Domain	Item	CFA Factor Loading	Item-Rest Correlation	High Item Correlation (> 0.70)^b	Frequency of Endorsement	Percent Missing	Content Validity Concern
Meaningful Activities	Q1: Are there enough scheduled activities here?	0.707	0.37		0.86	9.39	
	Q2: Do you like the activities that are scheduled here?	0.720	0.38		0.84	13.34	
	Q3: Do you have something to look forward to most days?	0.686	0.45		0.74	7.59	
	Q4: Are there things you do on the weekends that you enjoy?	0.701	0.44		0.64	10.74	
	Q5: Are you given the chance to do things that are meaningful to you?	0.850	0.49		0.82	10.53	
	Q30: Are you friends with anyone who lives here?	0.411	0.24		0.69	5.60	Yes
Food Enjoyment	Q6: Do you like the food here?	0.828	0.59	Q9: 0.79	0.81	6.62	
	Q7: Do you get your favorite foods here?	0.820	0.53	Q9: 0.71	0.66	11.62	
	Q8: Does the menu change enough?	0.735	0.46		0.75	8.69	
	Q9: Do you enjoy the mealtimes here?	0.918	0.50	Q6: 0.79; Q7: 0.71	0.86	6.57	
Dignified Care	Q18: Do the people who work here treat you politely?	0.875	0.49	Q19: 0.81; Q21: 0.82; Q24: 0.74; Q29: 0.77; Q31: 0.74	0.95	4.35	
	Q19: Do the people who work here listen to you?	0.885	0.53	Q18: 0.81; Q21: 0.79;	0.89	7.72	

				Q22: 0.74; Q24: 0.73			
	Q21: Are the people who work here gentle with your care?	0.848	0.49	Q17: 0.72; Q18: 0.82; Q19: 0.79; Q22: 0.78; Q26: 0.72; Q29: 0.73; Q31: 0.70	0.94	5.73	
	Q22: Do the people who work here respect your modesty?	0.820	0.42	Q19: 0.74; Q21: 0.78	0.94	7.28	
	Q24: Do the people who work here do things the way you want them done?	0.838	0.46	Q18: 0.74; Q19: 0.73	0.87	8.96	
	Q36: Do the people who work here ever get angry at you?*	-0.574	0.37		0.20	7.98	
Quality of Service	Q26: Are your concerns taken care of in a timely manner?	0.818	0.49	Q21: 0.72; Q31: 0.75	0.86	9.41	
	Q29: Do the people who work here seem happy to work here?	0.824	0.49	Q18: 0.77; Q21: 0.73; Q31: 0.71; Q37: 0.70; Q38: 0.77	0.90	11.11	
	Q31: Do you get help when you need it in a timely manner?	0.826	0.52	Q18: 0.74; Q21: 0.70; Q26: 0.75; Q29: 0.71; Q33: 0.72	0.86	6.74	
	Q33: Do the people who work here check often enough to see if you need anything?	0.789	0.48	Q31: 0.72	0.71	9.45	
	Q35: Do the same people take care of your most of the time?	0.402	0.22		0.78	8.01	

	Q37: Do the people who work here go above and beyond to give you a good life?	0.818	0.52	Q29: 0.70; Q38: 0.73	0.79	14.26	
	Q38: Would you recommend [name of facility] to someone who needs care?	0.879	0.57	Q29: 0.77; Q37: 0.73 Q39: 0.74	0.87	7.86	Yes
	Q39: Overall, what grade would you give [Name of Facility], [pause] where A is the best it could be and F is the worst it could be? ^a	0.694	0.54	Q38: 0.74	A: 0.32 B: 0.37 C: 0.24 D: 0.05 F: 0.02	9.37	Yes
Autonomy	Q10: Is it easy for you to get around in your room?	0.744	0.46	Q11: 0.79	0.85	4.72	
	Q11: Can you get to the things you need in your room?	0.754	0.47	Q10: 0.79	0.86	5.10	
	Q13: Can you enjoy the outdoors when you want to?	0.678	0.30		0.83	9.89	
	Q20: Do the people who work here let you do the things you can do for yourself?	0.801	0.29		0.93	7.42	
	Q23: Can you get up in the morning at the time you want?	0.651	0.29		0.81	5.56	
Environment	Q12: Does noise keep you awake at night?*	-0.394	0.22		0.14	2.94	
	Q14: Can you find a place to be alone when you want to be alone?	0.676	0.33		0.91	5.17	
	Q15: Do you feel you have enough privacy?	0.820	0.43		0.90	3.06	
	Q16: Are your personal items safe here?	0.754	0.33	Q17: 0.77	0.88	6.68	
	Q17: Do you feel safe here?	0.877	0.34	Q16: 0.77; Q21: 0.72	0.96	2.42	

Communication with Staff	Q25: Are you encouraged to speak up about things you don't like here?	0.688	0.36		0.80	13.84	
	Q27: Do the people who work here stop by just to talk?	0.650	0.42	Q28: 0.75	0.59	7.39	
	Q28: Do the people who work here talk with you about things that are important to you?	0.861	0.54	Q27: 0.75	0.73	10.42	
	Q32: Do the people who work here tell you what they are doing when they care for you?	0.787	0.43		0.81	12.22	
	Q34: Do the people who work here ask to come in before entering your room?	0.585	0.34		0.80	8.31	

Note: Bolding indicates that an item is flagged for failing to meet the desirable threshold for a criterion. Items are flagged if their: (a) CFA factor loading is less than 0.600; (b) item-rest correlation is less than 0.30; (c) correlation with another item is greater than or equal to 0.70; (d) frequency of endorsement is 0.95 or greater; or (e) percentage missing is 10 or greater. Items are also flagged if there is a content validity concern. Items are highlighted in red if, after weighing these criteria and considering the balance of items across domains, we recommend that the item be removed from the survey and/or domain score calculations.

*Item reversed when calculating domain scores.

^a The response categories were reverse coded 0=F, 1=D, 2=C, 3=B, 4=A, so that higher values are associated with more positive assessments.

^b For correlations between binary items (Q1-Q38), tetrachoric correlation coefficients are presented. For correlations between Q39 and all other items, a polychoric correlation is presented.

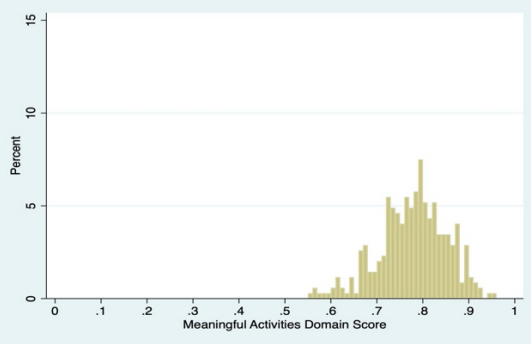
Table A.5. Descriptive Statistics for Facility Domain Scores by Model in 2019

Model	Domain	Mean of Facility Domain Scores	Standard Deviation	Minimum	Maximum
Current Model with All Items	Meaningful Activities	0.78	0.07	0.55	0.96
	Food Enjoyment	0.77	0.10	0.46	0.99
	Environment	0.88	0.05	0.65	0.99
	Dignity	0.93	0.05	0.75	1
	Autonomy	0.83	0.07	0.62	0.99
	Relationships	0.73	0.09	0.46	0.92
	Caregiving	0.80	0.07	0.53	0.95
Current Model with Item Recommendations Implemented	Meaningful Activities	0.78	0.07	0.55	0.96
	Food Enjoyment	0.77	0.10	0.46	0.99
	Environment	0.89	0.05	0.63	0.99
	Dignity	0.93	0.05	0.73	1
	Autonomy	0.83	0.07	0.62	0.99
	Relationships	0.73	0.09	0.46	0.92
	Caregiving	0.80	0.08	0.52	0.96
Resident Global Assessment	0.80	0.09	0.50	0.93	
New Model with All Items	Meaningful Activities	0.76	0.07	0.54	0.93
	Food Enjoyment	0.77	0.10	0.46	0.99
	Dignified Care	0.90	0.06	0.66	1
	Quality of Service	0.81	0.08	0.55	0.97
	Autonomy	0.86	0.06	0.61	0.99
	Environment	0.90	0.06	0.61	1
	Communication with Staff	0.75	0.08	0.50	0.94
New Model with Item Recommendations Implemented	Meaningful Activities	0.78	0.07	0.55	0.96
	Food Enjoyment	0.77	0.10	0.46	0.99
	Dignified Care	0.89	0.06	0.64	1
	Quality of Service	0.83	0.09	0.53	0.99
	Autonomy	0.86	0.06	0.66	0.99
	Environment	0.90	0.06	0.61	1
	Communication with Staff	0.75	0.08	0.50	0.94
Resident Global Assessment	0.80	0.09	0.50	0.93	

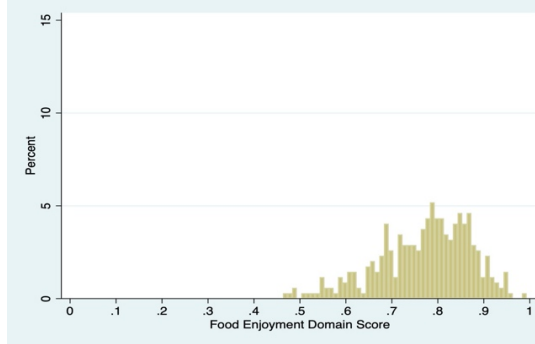
Note: Facility domain scores were calculated using data from the 2019 Long-Stay Resident Quality of Life Survey.

Figure A.1. Distribution of Facility Domain Scores for the Current Model with All Items

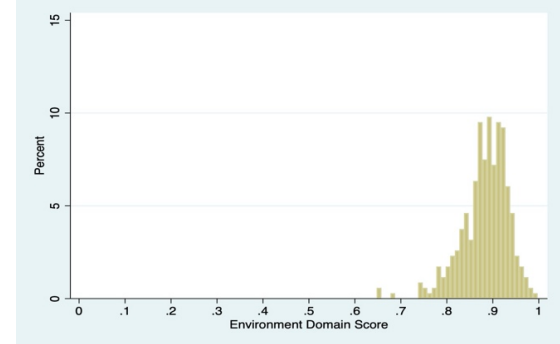
Meaningful Activities



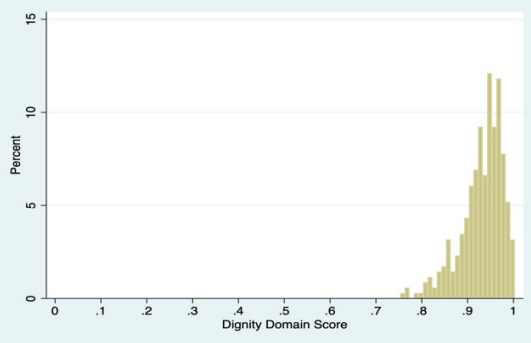
Food Enjoyment



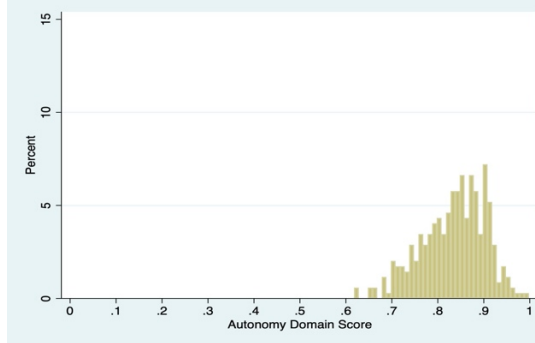
Environment



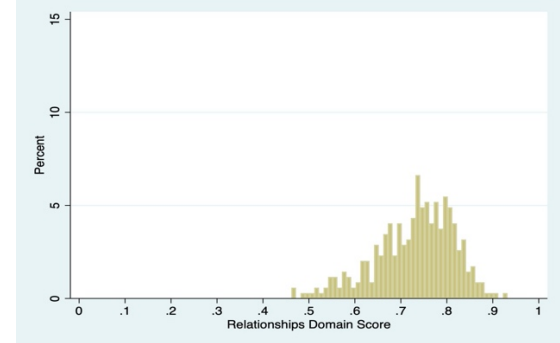
Dignity



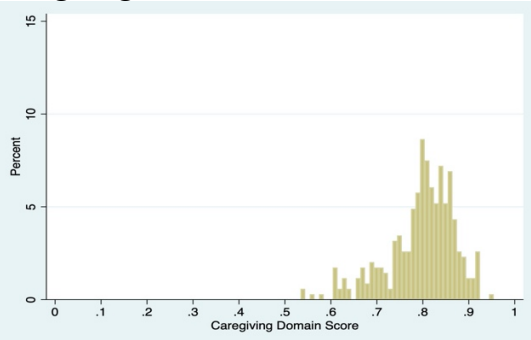
Autonomy



Relationships



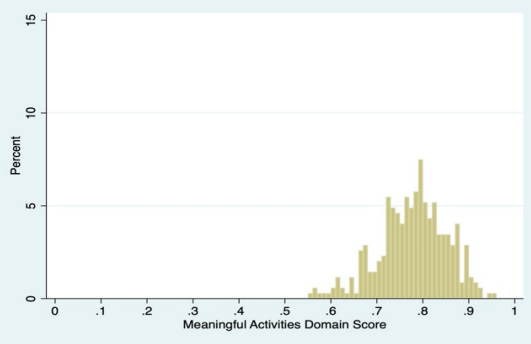
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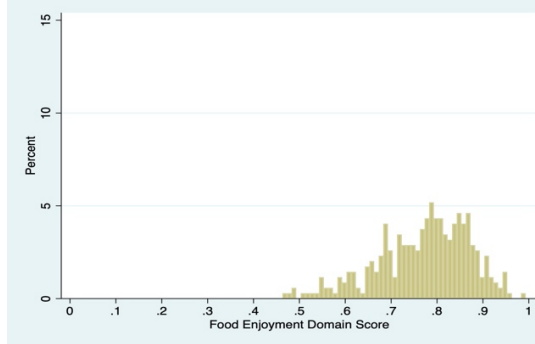
Note: Facility domain scores were calculated using data from the 2019 Long-Stay Resident Quality of Life Survey.

Figure A.2. Distribution of Facility Domain Scores for the Current Model with Item Recommendations Implemented

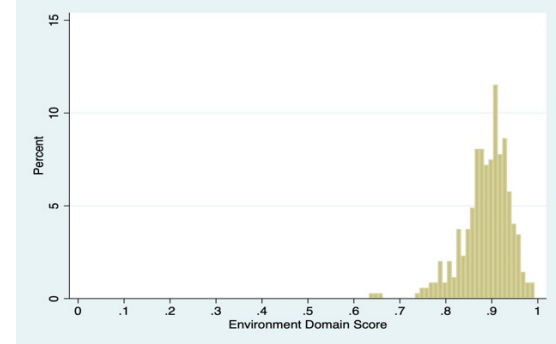
Meaningful Activities



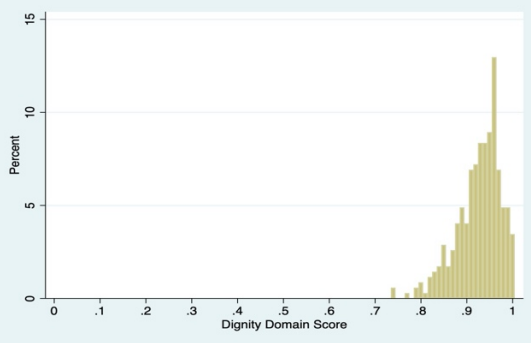
Food Enjoyment



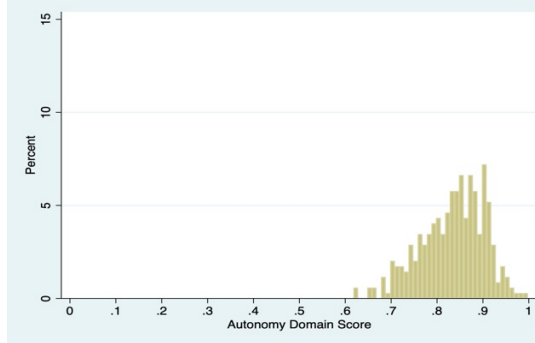
Environment



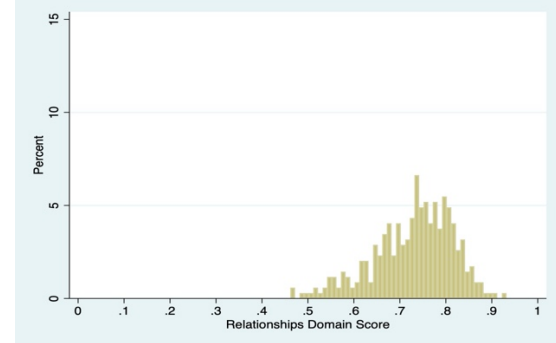
Dignity



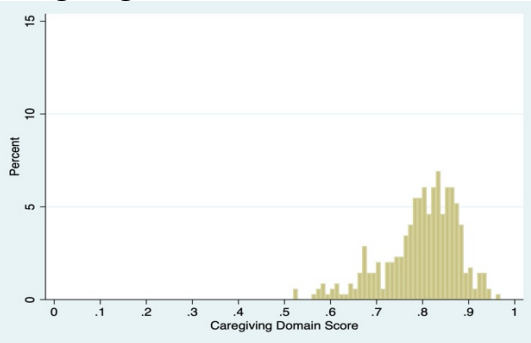
Autonomy



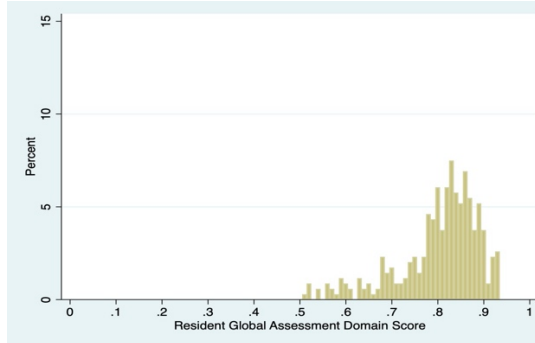
Relationships



Caregiving



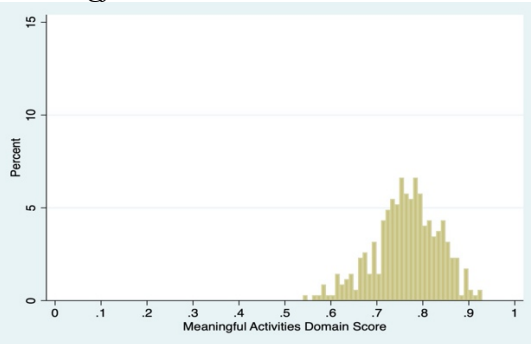
Resident Global Assessment



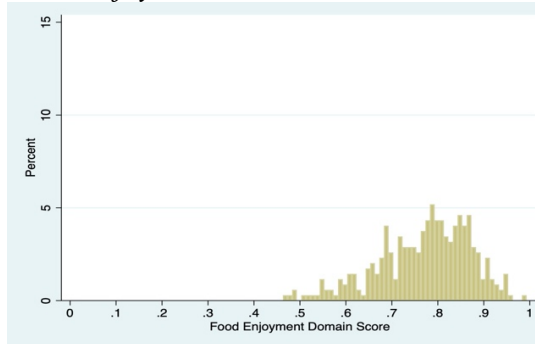
Note: Facility domain scores were calculated using data from the 2019 Long-Stay Resident Quality of Life Survey.

Figure A.3. Distribution of Facility Domain Scores for the New Model with All Items

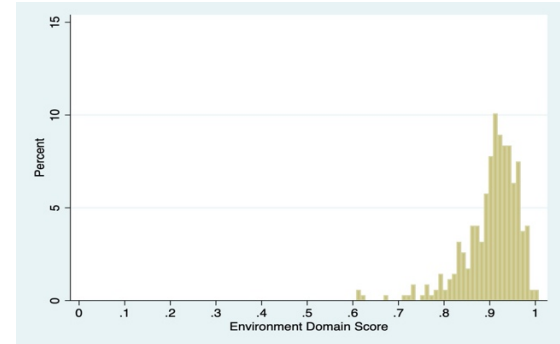
Meaningful Activities



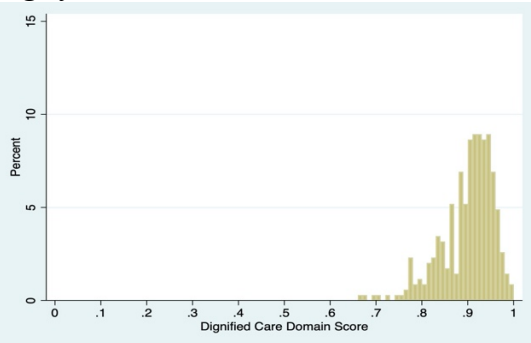
Food Enjoyment



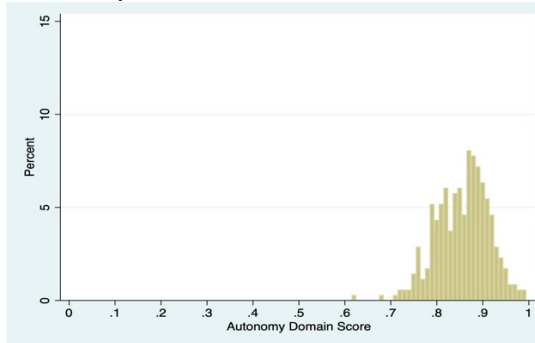
Environment



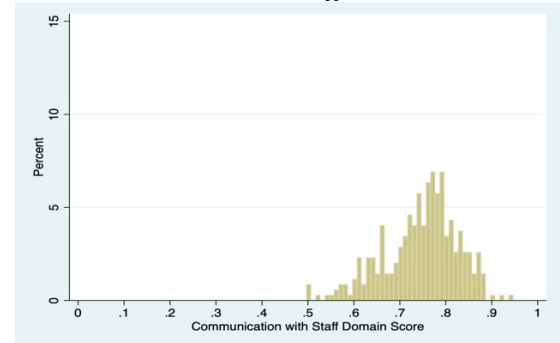
Dignified Care



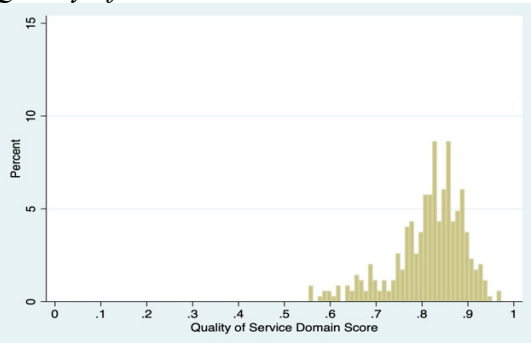
Autonomy



Communication with Staff



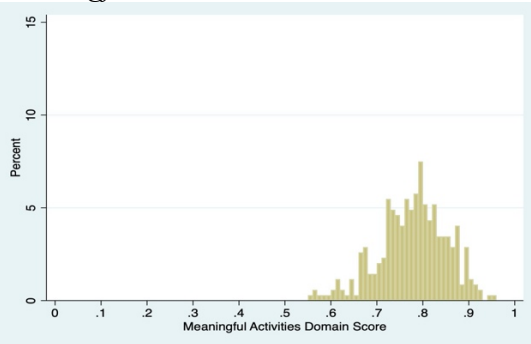
Quality of Service



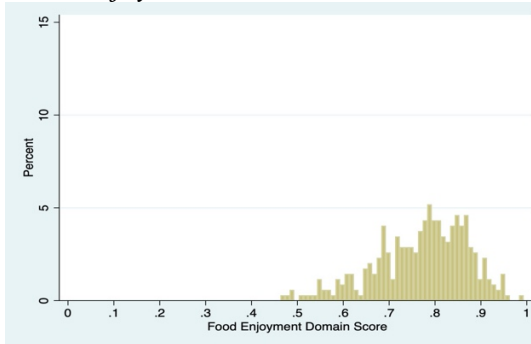
Note: Facility domain scores were calculated using data from the 2019 Long-Stay Resident Quality of Life Survey.

Figure A.4. Distribution of Facility Domain Scores for the New Model with Recommended Items Removed

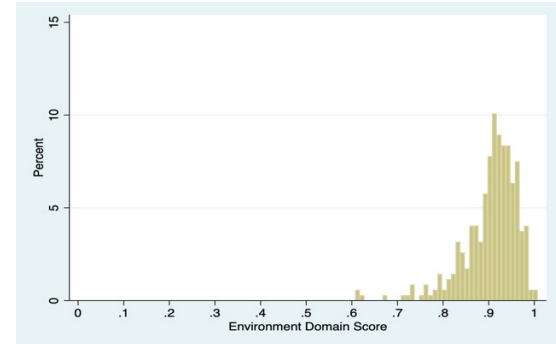
Meaningful Activities



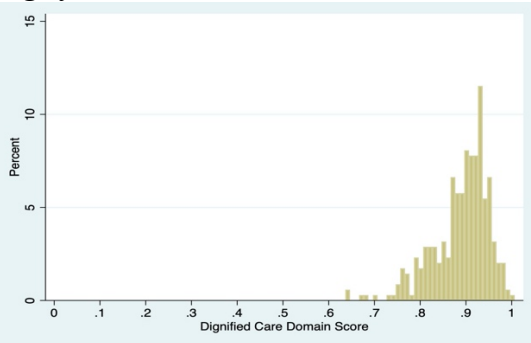
Food Enjoyment



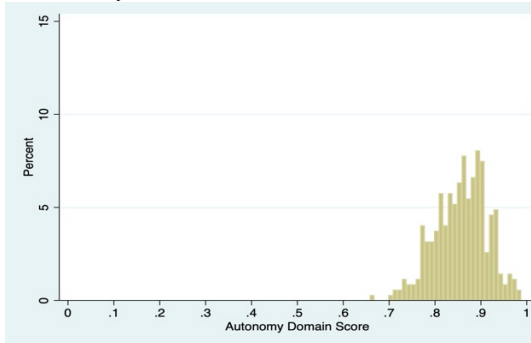
Environment



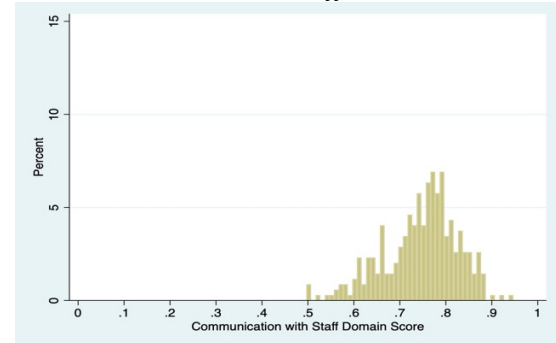
Dignified Care



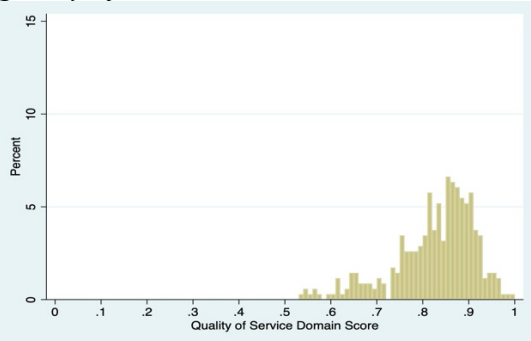
Autonomy



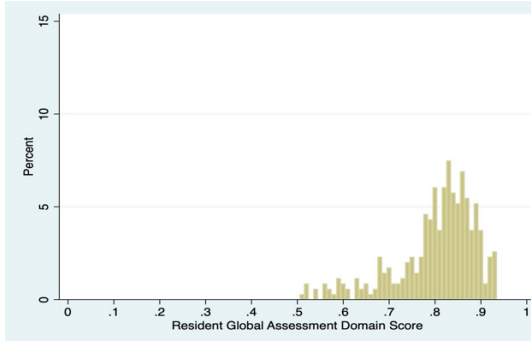
Communication with Staff



Quality of Service



Resident Global Assessment



Note: Facility domain scores were calculated using data from the 2019 Long-Stay Resident Quality of Life Survey.