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Family Satisfaction With Nursing Home Care: The Role of Facility Characteristics and Resident Quality-of-Life Scores

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Abstract

This article explores the factor structure of a new family satisfaction with nursing home care instrument and determines the relationship of resident quality of life (QOL) and facility characteristics with family satisfaction. Data sources include (1) family satisfaction interviews (n = 16,790 family members), (2) multidimensional survey of resident QOL (n = 13,433 residents), and (3) facility characteristics (n = 376 facilities). We used factor analysis to identify domains of family satisfaction and multivariate analyses to identify the role of facility-level characteristics and resident QOL on facility-mean values of family satisfaction. Four distinct domains were identified for family satisfaction: “care,” “staff,” “environment,” and “food.” Chain affiliation, higher resident acuity, more deficiencies, and large size were all associated with less family satisfaction, and resident QOL was a significant (albeit weak) predictor of family satisfaction. Results suggest that family member satisfaction is distinct from resident QOL but is associated with resident QOL and facility characteristics.

Keywords

long-term care services and supports; quality of life; satisfaction; family

Introduction

There is growing recognition of resident- and family-reported measures as quality outcomes for nursing homes (NHs); more states and individual facilities are using consumer satisfaction measures in long-term care services and supports (LTSS; Kane, 2003; Kane et al., 2003, 2005). While residents should be asked about their own quality of life (QOL; Kane et al., 2003), family members also play an important role in this process as key consumers

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and as an important source of information about quality in NHs (Kane et al., 2005). Family member satisfaction is distinct from, but related to, the potential role of family members as proxies of resident QOL (Andresen, Vahle, & Lollar, 2001; Crespo, Bernaldo de Quiros, Gomez, & Hornillos, 2012). Most family members continue their involvement in their loved one's life after NH placement (Gaugler, 2005), and most studies report high levels of family satisfaction with NH care (Castle, 2004; Gaugler, Leitsch, Zarit, & Pearlin, 2000). Further, family satisfaction may be considered in NH pay-for-performance efforts. Thus, understanding which organizational factors are associated with family member satisfaction with resident NH care, including QOL, can guide performance improvement programs tailored to meet the needs of different consumers. To that end, this study explores the attributes of a new family satisfaction tool and identifies predictors on a facility level, including aggregate resident–reported QOL.

Researchers have developed tools to assess family member satisfaction with NH care (e.g., Castle, 2004; Ejaz, 2003; Grant, 2004; Kane et al., 2005; Straker et al., 2012). These are often developed for individual facilities, however, or do not comprehensively assess the multidimensional nature of satisfaction. Few states have annual surveys on family member satisfaction and even fewer have implemented a standardized measure of family satisfaction into their yearly NH surveys. More recently, Consumer Assessment of Healthcare Providers and Systems developed a family satisfaction survey for NH residents (Frentzel et al., 2012), but it has had limited uptake by states. Also, the My InnerView survey has been used by facilities in many states (National Research Corporation, 2015); however, NHs must privately contract with the National Research Corporation to use My InnerView, so its results are not representative of all Medicaid-certified NHs. The current study uses data from Minnesota, one of the few states in the United States to collect such measures and to develop and examine a multidimensional measure of family satisfaction for the *entire population* of residents in Medicaid-certified NHs in Minnesota. The Minnesota family survey was developed as an offshoot of the NH resident survey the state has used for several years (Shippee, Hong, Henning-Smith, & Kane, 2014). That tool was modified from work done under a Centers for Medicaid and Medicare Services (CMS) contract. We believe family satisfaction measures add an important perspective of key consumers: Family members who often are active participants in the decisions about LTSS placement and advocates for better care.

Our analysis focuses on facility-level predictors of family satisfaction, including the role of aggregate resident QOL. Family members are often key decision makers in choosing NHs and they make comparisons between facilities using aggregate scores. At a time when pay-for-performance programs are becoming more popular, understanding facility-level predictors of family satisfaction could help individual NHs that try to improve their satisfaction scores. Family satisfaction scores can help other families make better decisions about NHs and guide state-level efforts to identify high and low performers.

Literature Review

Family Satisfaction Versus Resident QOL

Consumer voice in LTSS is as an important indicator of care that is different from the information derived from clinical measures (Applebaum, Straker, & Geron, 2000; Shippee et al., 2014; Kane, 2001). Typically, consumer perspective is solicited through resident and family satisfaction surveys. While resident satisfaction is the primary concern, increasing attention is given to the perspective of family members in part because of challenges in collecting satisfaction surveys from NH residents due to residents' cognitive decline and low response rates (Castle, 2004) but also because family members are important decision makers in their own right (Kane, 2001; Levin & Kane, 2006). Furthermore, for public reporting, obtaining valid information from multiple stakeholders is important for reflecting different viewpoints. Family members have a different perspective on NH quality from residents (Williams, Straker, & Applebaum, 2014). Recent studies show that family member satisfaction is more aligned with existing quality measures such as NH compare versus resident measures (Aalikoglu, Christmyer, & Kozlowski, 2012; Williams et al., 2014) and thus represents different source of information than that collected from residents. Family members are typically more critical of NH care than residents (Crespo et al., 2012; residents appear to adapt to their surrounding and lower their expectations, while family members may maintain more externally based views (Hasson & Arnetz, 2011).

Multilevel Framework to Understand Family Satisfaction

Family satisfaction can be influenced by facility and family member characteristics and by the relationships between family members and residents. Our conceptual framework adapts the Zubritsky model (Zubritsky et al., 2013) for QOL for selecting predictors of family satisfaction. Based on this model, we identify structural facility-related factors (e.g., staffing), predisposing family member characteristics (e.g., type of family member), and interindividual characteristics that reflect the relationship between family member and the resident, including resident QOL. Resident reports of their QOL could influence family perception of resident well-being, in part depending on the relationship between resident and the family member.

Facility characteristics such as smaller size, nonprofit ownership, no chain affiliation, and rural location are associated with greater family satisfaction (Grant, 2004; Tornatore & Grant, 2004). Family members are more satisfied when staff have positive, sensitive communication with their loved ones and show that they know the needs of their care recipients (Ejaz, Noelker, Schur, Whitlatch, & Looman, 2002; Engel, Kiely, & Mitchell, 2006; Thompson, Menec, Chochinov, & McClement, 2008).

Family member characteristics include the type of family member (e.g., spouse vs. children), frequency of visits, and whether a family member provided care prior to NH admission. There is some evidence that the relationship of family member to resident affects their level of satisfaction, with spouses and children differing in their level of satisfaction with care (Novella et al., 2001). Family member who visit often report higher satisfaction (Tsai, Tsai,

& Huang, 2012). In our analyses, we investigate the differences by frequency of visiting and phone contact.

Interindividual characteristics include the family member's relationship with the resident and resident reports of their QOL. Unfortunately, we do not have measures of caregiver involvement in NH care, but we capture level of engagement via frequency of visits and contacts. Furthermore, we posit that family members' views could be influenced by resident ratings of their QOL. This could be especially true for family members who visit less and may rely more on external reports. Only a few studies have examined the role of resident QOL on family satisfaction; they typically either examined whether staff and family members could be used as proxies for NH residents (Kane et al., 2005) or explored the agreement between NH resident responses and family reports of satisfaction on limited topics (e.g., amenities) but did not specifically focus on the role of resident-reported QOL (Castle, 2006). More research is needed to understand the association between family reports of satisfaction and resident QOL and how these reports differ by relationship type and frequency of contact as well as their alignment at the facility level.

This study addresses a gap in the literature on family satisfaction for NH residents in several ways. First, we identify the factor structure of a new *family satisfaction with resident NH care* instrument. The satisfaction tool recognizes that, similar to resident QOL, family satisfaction is multidimensional, encompassing social, psychological, and physical domains (Brod, Stewart, Sands, & Walton, 1999; Kane, 2003; Shippee, Henning-Smith, Kane, & Lewis, 2015), and thus a tool that addresses family satisfaction with resident NH care should reflect all of these domains. Minnesota is one of two states (Ohio developed a family satisfaction tool in 2001 and updated in 2010; Ejaz et al., 2003; Straker, Chow, Mwangi, & Reddecliff, 2011) that have developed and validated a tool to be used in all Medicaid-certified facilities in the state. However, the Ohio tool (see Ejaz et al., 2003; Straker et al., 2011) is considerably longer (the original tool had 97 items and the updated tool had 17 background questions plus 54 satisfaction questions across 11 domains; Williams et al., 2014), which may increase respondent burden and limit response rates (Straker & Ejaz, 2012). Many other tools are created by individual facilities/providers (not validated), are not multidimensional, or are created to address satisfaction with care for particular resident population (e.g., residents with dementia), rather than the general NH population (Castle, 2004; Andresen et al., 2001; Grant, 2004; Thompson et al., 2008; Ejaz et al., 2002; Engel et al., 2006; Levy-Storms & Miller-Martinez, 2005; Tornatore & Grant, 2004).

Second, existing studies tend to have a narrowly defined sample (e.g., NH resident close to death; Engel et al., 2006), focus only on specific conditions such as dementia patients' family satisfaction; Ejaz et al., 2002), or do not adjust for relevant resident-related characteristics in facility analyses (e.g., analyses include only facility characteristics without adjusting for resident case mix; Grant, 2004). This study uses data from family members of residents in all Medicaid-certified facilities in the state and applies a multilevel conceptual framework to understand family satisfaction.

Third, none of the existing studies examined the association between resident-reported QOL and family member satisfaction. This study compares the role of resident-reported QOL

scores aggregated to the facility level with family satisfaction reports in that same facility. Because Minnesota collects annual resident QOL surveys, we can examine the relationship between resident-reported QOL and family member satisfaction at the facility level. While the data do not permit a dyadic examination of the relationship between family satisfaction and resident, even facility-level linkage is a contribution missing from previous studies.

To address these gaps, this article has three objectives:

1. To identify the factor structure of a new tool assessing family satisfaction with NH care,
2. To examine variation in family satisfaction by type of family relationship, gender, and frequency of contact with NH resident,
3. To identify facility and organizational predictors of family NH satisfaction, including the role of aggregate resident–reported QOL.

Research Design

Sample

Family members of Minnesota NH residents were recruited to participate in the 2010 statewide family satisfaction survey in all Medicaid-certified NHs (377), and all but one facility participated. Family members were identified by facilities as meeting at least one of the following: (1) the person who visits the nursing facility most often, (2) the person who attends the care conferences for the resident, (3) the person who holds the resident's power of attorney for health care. or (4) the person who is notified of any change in the resident's health or functional status. Facilities were responsible for identifying and recruiting participants. Facilities provided the state with a list of participants, including their name, address, and phone number. Selected participants were then mailed a survey by the state Department of Human Services (DHS), with an option to complete the survey online. To increase response rates, reminder postcards were sent and phone interviews were conducted with family members who did not respond to the initial mailing. A total of 27,596 surveys were mailed, and 16,790 surveys were returned (60% response rate). Of the completed surveys, 15,499 (92%) were completed by mail. Two percent were completed online and 6% were completed by phone. An average of 45 family surveys were completed per facility (range: 6–218; Vital Research, 2010). All but one of the 377 eligible facilities agreed to participate in the family satisfaction survey and no facility was excluded because of low response rate (Vital Research, 2010).

Characteristics of all Medicaid-certified facilities in the state of Minnesota who had completed family member satisfaction and resident QOL surveys were included in our data (376 of 377 eligible facilities). Resident QOL data come from resident interviews in 376 NH facilities. They were eligible for participation in the survey as long as they were not in medical isolation, their guardian did not decline participation, or they were not "very severely" cognitively impaired, defined as a score of "6" on the Cognitive Performance Scale (range: 0–6; Vital Research, 2010). Across all facilities, 96% of residents met these criteria. In 2010, 16,187 residents were surveyed about their QOL and 13,433 residents

successfully completed the survey (85% response rate; Vital Research, 2010). While the survey was designed to accommodate cognitive impairment (Kane et al., 2003), 2% of respondents were not eligible to complete the survey because of severe cognitive impairment.

Variables and Instruments

The family members' satisfaction instrument was developed by researchers from the University of Minnesota to address the need for multidomain measures of family satisfaction with NH care and has been pilot tested for reliability and validity (Kane, 2003; Kane et al., 2003, 2005; Vital Research, 2010). Item development followed an extensive literature review on existing family satisfaction measures (Kane, 2008). Along with including relevant and previously validated items, one of the primary goals of the instrument development was to keep the survey short to improve feasibility and response rate and to keep response options consistent throughout (Kane, 2008). The instrument was also designed to correspond wherever feasible to measures in the previously validated resident QOL survey (Kane, 2003; Shippee et al., 2014), with items related to each of the domains in that survey, with the exception of negative and positive moods. While items do not match exactly, they were designed to measure similar concepts to allow for comparison between family member satisfaction and resident QOL. Following the initial instrument development by researchers at the University of Minnesota, feedback was obtained from Vital Research, a contracted research and evaluation firm from Los Angeles, CA, and the Minnesota DHS (Vital Research, 2010). The pilot test in four NHs (two urban and two rural) showed that it was feasible to collect data on family satisfaction (Kane, 2008), however, modifications were made to the original version. In particular, the original tool included responses on a scale of 1–10 in order to capture the most variation, but feedback from the pilot study suggested that respondents found the wide range difficult to use. Additionally, the original instrument did not include measures of staff responsiveness, but qualitative feedback from pilot study respondents suggested that such measures would be useful and appropriate. The instrument otherwise demonstrated validity across settings and types of respondents (Kane, 2008). The original instrument was modified to have a narrower rating scales (1–5 vs. the original 1–10) and to include measures of staff responsiveness (Vital Research, 2010).

Following the pilot test and subsequent modifications, the survey was implemented statewide. The final 2010 family satisfaction survey includes 35 items related to family member satisfaction with the NH on a range of topics, including items related to resident QOL. Respondents were asked to give the facility a grade between "A" (*excellent*) and "F" (*failing*) on each item. Respondents were also given the option of answering "don't know/not applicable," which was recoded as missing. We coded the variables, so that higher values match better grades (i.e., 5 = A). Family satisfaction scores had fewer than 1% missing on each item. Independent variables had less than 10% missing for all covariates except frequency of phone contact, which was missing in 12% of cases.

Resident QOL scores come from the 2010 *Resident QOL and Satisfaction with Care Survey*. This survey of NH residents used a 52-item in person interview addressing their perceived QOL across multiple domains. In previous work, we identified six domains for resident

QOL: “environment” (4 items), “personal attention” (6 items), “food” (3 items), “social engagement” (9 items), “negative mood” (6 items), and “positive mood” (3 items). Not all 52-items loaded onto a domain (Shippee et al., 2015). Responses for this study are aggregated at the facility level.

Facility-level characteristics come from information reported by facilities to the DHS. Facility characteristics include chain affiliation, staff retention (percentage of staff who did not leave throughout the year), and quality indicator score (based on facility scores on 23 measures of quality, including prevalence of infections, falls, unexplained weight loss, pressure sores, and use of antipsychotic drugs without a diagnosis of psychosis). Higher score indicates higher quality of care, resident acuity (higher score indicates more severe case mix), Medicaid status (as a binary variable with 1 = over 50% on admission), number of deficiencies based on CMS reports, size (large with 75 beds or more vs. fewer than 75 beds), ownership type, and metropolitan status. There were no missing data on facility characteristics.

Analytic Strategy

Using Mplus software version 6, we conducted exploratory factor analyses to determine relevant domains of satisfaction for family members. We used exploratory factor analysis because this was the first tool of its kind in Minnesota and we did not know a priori how items might load together. While the instrument was designed to complement the resident QOL tool, the items did not match exactly in content, scoring, or quantity. Therefore, we could not assume that there would be the same number or type of domains. We conducted principal component factor analysis as our extraction method. We tried both orthogonal and oblique rotations and used geomin rotation (oblique) for the final output. Geomin rotation with Kaiser normalization allows the factors to be correlated in an attempt to better approximate sample structure. We assessed the number and distribution of eigenvalues greater than 1 and retained items at each iteration with rotated factor loadings divergent by at least 0.4 (and items not loading onto the same factor). Two items that did not load onto any factor were removed (see results). Otherwise, the items showed high internal consistency for each factor and thus represent a consistent concept.

Bivariate relationships were assessed using *t*-tests of differences in means in order to detect differences in QOL reporting between types of family relationships. Correlations were calculated between all family-rated domains of satisfaction and resident-rated domains of QOL at the facility level because the data do not include linking keys to match family members with individual residents. Nested multivariate regression models were used to assess significant predictors of family satisfaction. We tested different facility covariates in supplementary models and present variables that show significant associations with outcomes of interest.

First (Model 1), we entered facility characteristics as well as family member characteristics. We ran separate ordinary least squares (OLS) regression for each family satisfaction domain with list-wise deletion for missing data (due to low proportion of missing data, findings were similar with imputation approaches). We used OLS because the family satisfaction domains were normally distributed, continuous outcomes. Next (Model 2), we ran the same models

but added in facility-level resident QOL domains because we wanted to examine the effect of resident-reported facility QOL ratings on family satisfaction, when accounting for other predictors. Finally, we conducted sensitivity analyses to identify predictors of having lower satisfaction (available upon request). To do so, we created indicator variables for each domain of family satisfaction, equaling "1" if the family member rated his or her satisfaction 1 *SD* below the domain mean. We then ran descriptive statistics on the lower satisfaction group, logistic regression models to generate odds ratios of being in the lower satisfaction group, and OLS regression models to see how predictors of satisfaction differed for this group compared with the full group. Bivariate and multivariate analyses were conducted using Stata V.11 (StataCorp LP, 2009).

Results

Family Member Characteristics

Table 1 presents characteristics of family members included in the study. The most common relationship to the NH resident was son or daughter, followed by "other family," spouse, and nonfamily. The majority (65%) of family respondents were women. More than half of all family respondents visited the NH resident in person at least weekly, with 18% of the sample visiting daily. Seven percent visited less than once a month. In contrast, nearly half (47%) of family respondents talked with the NH resident on the phone less than once a month. Still, more than 13% called daily. Resident and facility characteristics are available elsewhere (Shippee et al., 2015).

Factor Analysis

Results of the exploratory factor analysis are included in Table 2. Four distinct domains were identified for family member satisfaction: "care," "staff," environment, and food. Cronbach's α scores for each factor had high values: .96 for care, .95 for staff, .91 for environment, and .86 for food. High values suggest that the items had high internal consistency for each factor and thus represented a consistent concept. Domains differed in the number of items that loaded into each. The care domain was the largest, with 12 items, and the food domain was the smallest, with 3 items. We removed Items Q12, "Offering activities that are interesting to the resident," and Q27, "Answering questions you may have," because they did not load well on any of the four factors.

Facility-Level Scores for Each Domain of Family Satisfaction

Table 3 presents descriptive statistics on facility-level scores for each domain. Facility-level scores were positively skewed, ranging from 3.69 of 5 (for food) to 4.09 (for care). This positive skew aligns with other research on family member satisfaction with NH care (Castle, 2004). It is also similar to other family satisfaction surveys carried out by other states (e.g., Ohio family satisfaction survey has an average rating of 86 of 100; Ejaz, 2003). *SD*s for our domains ranged from 0.24 to 0.31, indicating low levels of variability in family scoring of satisfaction across facilities.

Variation in Family Member Satisfaction

Table 4 presents variation in family satisfaction by type of family relationship, gender, and frequency of contact. Results from *t*-tests of differences between means indicate that adult children were significantly more likely than spouses to report better scores in all satisfaction domains. Other family members (i.e., not spouses or children) were significantly more likely than spouses to report lower satisfaction in the environmental domain. Nonfamily members reported significantly lower satisfaction in the environmental and food domains compared with spouses. Family members who visited in person once a week or more had higher satisfaction in the care domain, compared with family members who visited less than once a week, while family members who visited less than once a week had lower satisfaction in the environmental domain. There were no significant differences in family satisfaction scores for any domain by gender of the family member or by frequency of contact by phone.

Correlation Between Family Satisfaction and Resident-Reported QOL

In order to better understand the relationships between family satisfaction and resident QOL domains, we examined correlations between family satisfaction and resident-reported facility QOL domains. All correlation scores were modest (correlation coefficients ranged from .08 to .41). Resident QOL in the *personal attention (from staff)* and *food enjoyment* domains had highest correlations with family satisfaction domains (.4). Resident QOL domains regarding *environment* and *mood* had the lowest correlations with family satisfaction.

Facility and Organization Predictors of Family Member Satisfaction

Table 5 presents results from multivariate analyses examining facility and organization predictors of family satisfaction, including the role of resident-reported facility QOL scores. In Model 1, controlling for all covariates but not resident QOL scores, all but Medicaid status and rural/suburban location were significant for each of the four domains. In particular, being part of a chain, having higher case mix, having more deficiencies, and large size were facility-level indicators associated with lower family satisfaction across all four domains. Higher quality indicator scores (for quality of care) and government (vs. private) or nonprofit (vs. for profit) ownership were associated with higher family satisfaction scores across all four domains. Of family characteristics, only son/daughter relationship status and visit frequency were significant for any domain. Children of NH residents had higher satisfaction for care, environment, and food domains. And, more frequent visits were associated with higher satisfaction with care and environment.

After adding resident-reported facility QOL scores to Model 2, most of the facility characteristics remained significant, whereas there was a decrease in the number of significant associations for family characteristics. Aggregate scores for resident QOL were associated with family member satisfaction across all four domains, but the size of the effect was small and direction of the effect was not consistent. Higher scores in resident QOL domains of personal attention and food were associated with higher family satisfaction for all four domains. More negative resident mood was associated with lower family member satisfaction for all four domains. Resident QOL scores in environment, engagement, and positive mood had mixed associations with family satisfaction domains. The R^2 and adjusted

R^2 statistics (ranging from .29 for staff to .36 for environment) indicate that the model fit improved in Model 2, with more of the variance explained by the included covariates. The largest increase in the adjusted R^2 statistic was in the food domain, increasing from .25 to .35 in the fully adjusted models.

In sensitivity analyses, we found that individuals with the lowest satisfaction were more likely to be nonchildren of the residents and were more likely to visit daily or less than monthly. We identified several facility-level characteristics that were significantly associated with higher odds of being in the lower satisfaction group for each domain. In particular, higher facility acuity had an extremely high association with being in the lower satisfaction group. In contrast, not-for-profit status and micro (suburban) location were associated with lower odds of being in the lower satisfaction group across all four domains. (Results available upon request.)

Discussion

This article had three objectives: (1) to identify the factor structure of a new family satisfaction instrument using data from all NHs in Minnesota; (2) to examine variation in family satisfaction by type of family relationship, gender, and frequency of contact with NH resident; and (3) to assess facility-level predictors of family NH satisfaction, including the role of aggregate resident–reported QOL.

First, our findings point to the multifactorial nature of the family satisfaction instrument. This study builds on previous work on resident-reported QOL and finds that, like resident evaluation of QOL (Shippee et al., 2015), family member satisfaction is multifaceted. In order to gain a full understanding of family members' satisfaction, it is necessary to interview them about a variety of domains, rather than simply using one summary measure. We identified four domains of family satisfaction: *care, staff,* environment, and *food.* Care centered around family members' perceptions of their involvement in resident care, communication with staff around resident care, accessibility of medical personnel, and overall quality of care provided in the facility. Staff included items about whether staff members know and like the resident, consistent assignment of staff, and staff attitude and respect toward the resident. Environment included items related to smell, cleanliness, pleasantness, comfort, and safety of the facility. Finally, the food domain asked about menu choice, quality of food, and atmosphere at meal time.

These domains were similar to those identified in other studies (Ejaz, 2003; Straker et al., 2011), however, our scale has fewer domains. This difference may be related to our shorter survey instrument (e.g., 35 survey items in our family satisfaction survey, compared with 71 in the updated Ohio tool, discussed in Straker et al., 2011). There is some indication that the shorter instrument decreases respondent burden and improves response rate. The longer Ohio survey had only a 47% response rate of all eligible family respondents (Straker et al., 2011). Indeed, the literature on survey methodology indicates that survey length impacts response rate (Kellerman & Herold, 2001; Jepson, Asch, Hershey, & Ubel, 2004).

Consistent with most satisfaction surveys, our findings generally point to high family member satisfaction with their loved one's NH care. Our results align with previous research that finds that family members tend to have positively skewed distributions of satisfaction with NH care (Castle, 2004; Williams et al., 2014). Thus, the focus needs to be on those with slightly lower satisfaction. Moreover, there is still room for improvement. For example, family members reported the lowest satisfaction with food. This area deserves further research in order to better understand reasons for resident and family dissatisfaction and to design appropriate interventions to increase food quality, variety, and other areas of food enjoyment. Further, we identified significant variation in the predictors of satisfaction for family members with the lowest satisfaction. We also identified facility characteristics that are associated with being in the lowest satisfaction group. In particular, higher resident acuity was associated with much higher odds of being in the lowest satisfaction group. This may be an indication that the facilities with the most difficult case mix are the most vulnerable to lower family member satisfaction. Policy makers should target resources to assist these facilities in increasing satisfaction across domains. The variation we found in predictors of satisfaction, both for the lowest satisfaction group and for the full sample, provides evidence that tools evaluating NH resident QOL and family satisfaction must incorporate items from multiple domains in order to provide a realistic picture of life in the facility.

Aggregate resident–QOL scores had only modest correlations with family satisfaction domains. One reason for weaker correlation may be that these measures were not explicitly designed to study agreement. This difference suggests that family member satisfaction should be considered *in addition to,* but *not in lieu of*, resident-reported QOL. Each offers valuable information about NH quality and states should consider regularly collecting information on each.

Second, we found very little variation in family satisfaction scores by family member characteristics. One exception was relationship; spouses were most critical. Children tended to rate satisfaction higher than spouses for all four domains, other family members rated satisfaction higher than spouses for environment domains, and nonfamily members rated satisfaction higher for environment and food domains. The lack of variation by gender and frequency of contact suggests that other factors (i.e., facility characteristics and resident-reported QOL) may be more influential in determining family member satisfaction. We were surprised to find little relationship between frequency of contact and family member satisfaction. This finding deserves more attention. How do family members form their judgments? If direct exposure is not a strong influence, what is? We plan to examine these questions in more depth in further work.

Third, facility characteristics played a strong role in family satisfaction across all four domains. Chain affiliation, higher resident acuity, more deficiencies, and large size were all associated with worse family satisfaction in all four domains. Of these, higher resident acuity deserves particular attention because of its larger effect size. The findings around acuity are also most consistent in predicting lower family satisfaction. These findings may represent stigma attached to higher health needs in long-term care facilities described in qualitative studies (Shippee et al., 2014) and family members refusing to accept the fact that

their loved ones also need higher care. Higher quality indicator score and ownership type (government and nonprofit) were associated with better family member satisfaction in all four domains. Especially in light of the lack of association with frequency of contact, these findings suggest that family views may be shaped by external factors. Nonprofit ownership was associated with higher family satisfaction in the literature on quality efforts in NHs (Konetzka, Stearns, & Park, 2008). There was some variation by domain, including the role of staff retention, Medicaid status, and geographic location. Specifically, staff retention had a positive association with care, staff, and environment domains but negative with food enjoyment. Medicaid status (over 50% funding on admission) was only significant for environment domain and had a sizable negative impact. This finding may be attributed to fewer resources available to NHs that are primarily Medicaid funded, especially as it relates to additional amenities and environmental modifications. In Minnesota, NHs cannot charge private-paying residents more than the Medicaid rate, with the exception of private rooms. Perhaps, the impact of single rooms was the driver behind the association between Medicaid and the environment domain. Geographic location had mixed associations with family satisfaction. Compared with metro locations, rural location had a negative association with family satisfaction on staffing and care domains. This finding runs counter to other research finding better overall satisfaction in rural facilities (Grant, 2004). However, we may be detecting nuances by domain: Rural facilities may have fewer options for staffing choices compared to metro facilities. Suburban location had a positive association with care, environment, and food domains.

Despite low correlation between family satisfaction and resident QOL domains, aggregate resident QOL was a significant predictor of family satisfaction scores in multivariate models. This was especially true in the care and food domains, where all six domains of aggregate resident–QOL scores were significantly associated with all four domains of family member satisfaction in multivariate models. This finding may point to a broader construct of quality that both resident QOL scores and family satisfaction scores reflect: If the facility provides high-quality care, residents will have higher QOL and family members will be more satisfied.

This study should be considered in light of its limitations. The original data collection was not designed to link resident responders and their family members. The group means may be more similar than the paired comparisons. This work was necessarily done at the facility level, which is also the appropriate unit for policy activity. Because of the cross-sectional nature of the study, we cannot discern the direction of effect between resident-reported QOL, facility characteristics, and family member satisfaction. We also cannot address issues related to change in satisfaction over time. However, this study offers important insights into how resident-reported facility QOL scores may be associated with family member satisfaction in ways that can inform future research. Additionally, we are not able to link individual family members with individual residents and are therefore unable to identify how individual dyads compare in their evaluation of facility QOL. This limitation also precludes us from evaluating the impact of short versus long NH stays, as we are unable to determine which family members are associated with residents receiving postacute care. While this is an important area for future research, we believe facility-level analyses are useful for policy interventions because family members are often key decision makers in choosing between

facilities. Finally, in the multivariate analyses, none of our models explain more than 36.5% of the variance in family member satisfaction. Therefore, there are variables influencing satisfaction beyond what we observe in our model. Information on dyads and additional information resident characteristics may help to improve the percentage of explained variance in future work.

The results have important implications for how family satisfaction with NH care should be examined in future work. Much of the existing research on families and NH care assumes a simple, direct empirical relationship, where increased family involvement or satisfaction with NH care is associated with improved outcomes on the part of residents (Greene & Monahan, 1982; Mitchell & Kemp, 2000; Noelker & Harel, 1978; Penrod, Kane, & Kane, 2000; Zimmerman, Gruber-Baldini, Hebel, Sloane, & Magaziner, 2002). However, the findings here and elsewhere (Grabowski & Mitchell, 2009) suggest a more complex relationship, where family satisfaction or actual involvement is associated with the quality of care that residents receive and the QOL that residents report. Future research on family satisfaction with NH care and NH resident QOL should utilize longitudinal data to better describe the temporal nature of family and resident adaptation to NH admission to ascertain whether family satisfaction precedes resident QOL, whether resident QOL and quality of care trigger greater family involvement and/or lower satisfaction, or if a bidirectional, feedback loop between family- and resident-level indices occurs. Such findings could inform the targeting and timing of systems-, family-, or resident-level interventions to result in improved QOL for residents and improved satisfaction for family members.

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References

Aalikoglu S, Christmyer CS, Kozlowski BU. My eyes, your eyes—The relationship between CMS five-star rating of nursing homes and family ratings of experience of care in Maryland. Journal of Healthcare Quality. 2012; 34:5–12.

Andresen EM, Vahle VJ, Lollar D. Proxy reliability: Health-related quality of life (HRQoL) measures for people with disability. Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation. 2001; 10:609–619.

Applebaum, RA., Straker, JK., Geron, SM. Assessing satisfaction in health and long-term care. New York, NY: Springer; 2000.

Brod M, Stewart AL, Sands L, Walton P. Conceptualization and measurement of quality of life in dementia: The dementia quality of life instrument (DQoL). The Gerontologist. 1999; 39:25–35. [PubMed: 10028768]

Castle NG. Family satisfaction with nursing facility care. International Journal for Quality in Health Care: Journal of the International Society for Quality in Health Care/ISQua. 2004; 16:483–489.

Castle NG. Family members as proxies for satisfaction with nursing home care. Joint Commission Journal on Quality and Patient Safety/Joint Commission Resources. 2006; 32:452–458.

Crespo M, Bernaldo de Quiros M, Gomez MM, Hornillos C. Quality of life of nursing home residents with dementia: A comparison of perspectives of residents, family, and staff. The Gerontologist. 2012; 52:56–65. [PubMed: 21903614]

Ejaz FK. Developing a satisfaction survey for families of Ohio's nursing home residents. The Gerontologist. 2003; 43:447–458. [PubMed: 12937324]

Ejaz FK, Noelker LS, Schur D, Whitlatch CJ, Looman WJ. Family satisfaction with nursing home care for relatives with dementia. Journal of Applied Gerontology. 2002; 21:368–384.

Engel SE, Kiely DK, Mitchell SL. Satisfaction with end-of-life care for nursing home residents with advanced dementia. Journal of the American Geriatrics Society. 2006; 54:1567–1572. [PubMed: 17038076]

Frentzel EM, Sangl JA, Evensen CT, Cosenza C, Brown JA, Keller S, Garfinkel SA. Giving voice to the vulnerable: The development of a CAHPS nursing home survey measuring family members' experiences. Medical Care. 2012; 50:S20–S27. [PubMed: 23064273]

Gaugler JE. Family involvement in residential long-term care: A synthesis and critical review. Aging and Mental Health. 2005; 9:105–118. [PubMed: 15804627]

Gaugler JE, Leitsch SA, Zarit SH, Pearlin LI. Caregiver involvement following institutionalization: Effects of preplacement stress. Research on Aging. 2000; 22:337–359.

Grabowski DC, Mitchell SL. Family oversight and the quality of nursing home care for residents with advanced dementia. Medical Care. 2009; 47:568–574. [PubMed: 19365290]

Grant LA. Organizational predictors of family satisfaction in nursing facilities. Seniors Housing and Care Journal. 2004; 12:3–13.

Greene VL, Monahan DJ. The impact of visitation on patient well-being in nursing homes. The Gerontologist. 1982; 22:418–423. [PubMed: 7129176]

Hasson H, Arnetz JE. Care recipients' and family members' perceptions of quality of older people care: A comparison of home-based case and nursing homes. Journal of Clinical Nursing. 2011; 20:1423–1435. [PubMed: 21324007]

Jepson C, Asch DA, Hershey JC, Ubel PA. In a mailed physician survey, questionnaire length had a threshold effect on response rate. Journal of Clinical Epidemiology. 2004; 58:103–105.

Kane RA. Long-term care and a good quality of life: Bringing them closer together. The Gerontologist. 2001; 41:293–304. [PubMed: 11405425]

Kane RA. Definition, measurement, and correlates of quality of life in nursing homes: Toward a reasonable practice, research, and policy agenda. The Gerontologist. 2003; 43:28–36. [PubMed: 12711722]

Kane, RL. Report on preliminary study of satisfaction among family members of nursing home residents: Prepared for the Minnesota Department of Human Services. Minneapolis: University of Minnesota; 2008.

Kane RL, Kane RA, Bershadsky B, Degenholtz H, Kling K, Totten A, Jung K. Proxy sources for information on nursing home residents' quality of life. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences. 2005; 60:S318–S325.

Kane RA, Kling KC, Bershadsky B, Kane RL, Giles K, Degenholtz HB, … Cutler LJ. Quality of life measures for nursing home residents. The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences. 2003; 58:240–248.

Kellerman SE, Herold J. Physician response to surveys: A review of the literature. American Journal of Preventive Medicine. 2001; 20:61–67.

Konetzka RT, Stearns SC, Park J. The staffing-outcomes relationship in nursing homes. Health Services Research. 2008; 43:1025–1042. [PubMed: 18454779]

Levin CA, Kane RA. Resident and family perspectives on assisted living. Journal of Aging and Social Policy. 2006; 18:173–192. [PubMed: 17135102]

Levy-Storms L, Miller-Martinez D. Family caregiver involvement and satisfaction with institutional care during the 1st year after admission. Journal of Applied Gerontology. 2005; 24:160–174.

Mitchell JM, Kemp BJ. Quality of life in assisted living homes: A multidimensional analysis. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences. 2000; 55:P117–P127.

National Research Corporation. MyInnerView. 2015. Retrieved from https://www.myinnerview.com/index.php

Noelker L, Harel Z. Predictors of well-being and survival among institutionalized aged. The Gerontologist. 1978; 18:562–567. [PubMed: 750296]

Novella JL, Jochum C, Jolly D, Morrone I, Ankri J, Bureau F, Blanchard F. Agreement between patients' and proxies' reports of quality of life in Alzheimer's disease. Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation. 2001; 10:443–452.

Penrod JD, Kane RA, Kane RL. Effects of post-hospital informal care on nursing home discharge. Research on Aging. 2000; 22:66–82.

Shippee TP. On the edge: Balancing health, participation, and autonomy to maintain active independent living in two retirement facilities. Journal of Aging Studies. 2011; 26:1–15.

Shippee TP, Henning-Smith C, Kane RL, Lewis T. Resident and facility predictors of quality of life in long-term care. The Gerontologist. 2015; 55:643–655. DOI: 10.1093/geront/gnt148 [PubMed: 24352532]

Shippee TP, Hong H, Henning-Smith C, Kane RL. Longitudinal changes in nursing home resident-reported quality of life: The role of facility characteristics. Research on Aging. 2014; doi: 10.1177/0164027514545975

StataCorp, LP. Stata SE. College Station, TX: Author; 2009.

Straker, JK., Chow, K., Mwangi, S., Reddecliff, L. Implementation of the 2010 Ohio nursing home family satisfaction survey. Oxford, OH: Miami University; 2011.

Straker, JK., Ejaz, F. Final report on development and testing for resident satisfaction survey. Cleveland, OH: Miami University; 2012.

Thompson G, Menec V, Chochinov H, McClement S. Family satisfaction with care of a dying loved one in nursing homes: What makes the difference? Journal of Gerontological Nursing. 2008; 34:37–44. [PubMed: 19113002]

Tornatore JB, Grant LA. Family caregiver satisfaction with the nursing home after placement of a relative with dementia. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences. 2004; 59:S80–S88.

Tsai HH, Tsai YF, Huang TS. Development and validation of the family meaning of nursing-home visits scale. Journal of Clinical Nursing. 2012; 21:2108–2117. [PubMed: 22672063]

Vital Research. Implementation of the 2010 consumer satisfaction and quality of life survey in Minnesota nursing homes and satisfaction survey of family members of residents in Minnesota nursing homes: Final report prepared for the Minnesota Department of Human Services. Los Angeles, CA: Author; 2010.

Williams A, Straker JK, Applebaum R. The nursing home five star rating: How does it compare to resident and family views of care? The Gerontologist. 2014; doi: 10.1093/geront/gnu043

Zimmerman S, Gruber-Baldini AL, Hebel R, Sloane PD, Magaziner J. Nursing home facility risk factors for infection and hospitalization: Importance of registered nurse turnover, administration, and social factors. Journal of the American Geriatrics Society. 2002; 50:1987–1995. [PubMed: 12473010]

Zubritsky C, Abbott KM, Hirschman KB, Bowles KH, Foust JB, Naylor MD. Health-related quality of life: Expanding a conceptual framework to include older adults who receive long-term service and supports. The Gerontologist. 2013; 53:205–210. [PubMed: 22859435]

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Table 1

Family Member Characteristics for Minnesota Nursing Home Residents.

Family characteristics	Frequency in Study
Family member	
Husband or wife	14.19
Son or daughter	60.44
Other family	15.75
Nonfamily	9.63
Gender of family member	
Male	34.99
Female	65.01
Frequency of in person visits	
Everyday	17.59
More than once a week	32.87
About weekly	23.45
Less than weekly, more than monthly	11.72
About monthly	7.67
Less than monthly	6.70
Frequency of phone calls	
Everyday	13.25
More than once a week	14.61
About weekly	10.80
Less than weekly, more than monthly	8.83
About monthly	5.43
Less than monthly	47.08

Table 2

Factor Analysis Results for Family Satisfaction Tool.

	Factor			
Individual items	**Care**	**Staff**	**Environment**	**Food**
Q26 Including your thoughts and opinions in planning the resident's care	.98	−.09	−.09	.03
Q33 Management responding well to your concerns	.82	.02	.01	.04
Q28 Making you feel confident in the care the resident receives	.72	.13	.11	.02
Q32 Staff going the extra mile to resolve problems	.71	.18	.01	.00
Q29 Allowing you to provide help or care to the resident	.71	.05	.05	.01
Q23 Communicating with you about the resident's health status	.82	.02	.03	.02
Q30 Not counting on you to provide more help than you want to provide	.61	.12	.10	.00
Q31 Allowing the resident to choose to receive or refuse care	.59	.14	.06	.04
Q25 Making you feel welcome when you visit	.53	.09	.29	.04
Q34 Quality of care provided in the nursing facility	.44	.22	.30	.01
Q14 Being able to see physicians when needed	.42	.15	.06	.14
Q13 Being able to see professional nurses when needed	.48	.25	.05	.06
Q17 Having staff who like the resident	.00	.90	.02	.02
Q16 Having staff who know the resident	.02	.91	.04	.00
Q15 Having the same staff assigned consistently	.02	.75	.02	.09
Q18 Staff doing what they say they will do	.03	.56	.29	.02
Q7 Staff's attitude toward the resident (respect, concern, and caring)	.21	.56	.11	.01
Q11 Personal care and attention given to the resident	.19	.47	.23	.02
Q19 Staff respect for the resident's privacy	.21	.49	.17	.02
Q6 Respect for the resident's dignity	.19	.45	.22	.03
Q21 Smell of the facility	.01	.10	.89	.01
Q20 Cleanliness of the facility	.00	.00	.84	.02
Q24 Making the nursing facility a pleasant place to visit	.39	.00	.51	.02
Q35 Quality of nursing facility as a place to live	.32	.08	.49	.05
Q22 Resident safety	.31	.15	.40	.01
Q5 Comfort of the resident's room	.06	.04	.51	.12
Q9 Menu choice of food available to the resident	.02	.01	.02	.92
Q8 Quality of food served to the resident	.02	.00	.02	.87
Q10 Atmosphere at meal time	.03	.18	.23	.43
Geomin rotations (oblique type) in Mplus α Coefficients	.96	.95	.91	.86

Note. n = 16,734. Items removed: Q12—offering activities that are interesting to the resident and Q27—answering questions you may have.

Table 3

Mean Facility-Level Scores for Each Domain of Family Satisfaction.

Factors	Range	Mean	*SD*
Factor 1, “Care”	3.30–4.69	4.09	.24
Factor 2, “Staff”	3.27–4.76	4.03	.24
Factor 3, “Environment”	3.13–4.86	4.00	.31
Factor 4, “Food”	2.98–4.46	3.69	.25

Note. n = 376.

Table 4

Mean Scores for Each Domain by Family Member Characteristics.

	Satisfaction Domain							
	Care		Staff		Environment		Food	
Family characteristics	**Mean**	***SD***	**Mean**	***SD***	**Mean**	***SD***	**Mean**	***SD***
Family member								
Husband or wife (ref.)	4.06	.23	4.00	.23	3.98	.29	3.65	.24
Son or daughter	4.08***	.23	4.02**	.23	4.00***	.29	3.67***	.24
Other family	4.05	.24	4.00	.24	3.96**	.31	3.65	.25
Nonfamily	4.04	.24	3.99	.24	3.93***	.31	3.63*	.24
Gender of family member								
Male (ref.)	4.07	.23	4.01	.23	3.99	.30	3.66	.24
Female	4.06	.23	4.01	.23	3.98	.30	3.66	.24
Frequency of in person visits								
Less than once a week (Ref.)	4.06	.23	4.01	.23	3.96	.30	3.65	.24
Once a week or more	4.07*	.23	4.01	.23	3.99***	.29	3.66	.24
Frequency of phone calls								
Less than once a week (Ref.)	4.06	.23	4.01	.23	3.98	.29	3.66	.24
Once a week or more	4.06	.23	4.01	.23	3.99	.30	3.66	.24

Note. n = 16,734.

t-Test of differences in means significant at

*p < .05.

**p < .01.

***p < .001.

Table 5

Nested Multivariate Models Predicting Satisfaction Ratings by Family Members.

	Model 1								Model 2							
	Satisfaction Domain								Satisfaction Domain							
	Care		Staff		Environment		Food		Care		Staff		Environment		Food	
Variables	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***
Facility characteristics																
Chain affiliation	−.05***	.00	−.06***	.00	−.06***	.00	−.03***	.00	−.05***	.00	−.06***	.00	−.06***	.00	−.04***	.00
Staff retention	.16***	.02	.11***	.02	.09***	.02	−.05**	.02	.17***	.02	.12***	.02	.15***	.02	−.04***	.02
Quality indicator score	.002***	.00	.002***	.00	.003***	.00	.002***	.00	.001***	.00	.001***	.00	.001***	.00	.002***	.00
Resident acuity	−.49***	.03	−.4***	.02	−.44***	.03	−.37***	.03	−.60***	.03	−.47***	.03	−.46***	.03	−.38***	.03
Medicaid status (over 50%)	−.04	.02	.01	.02	−.18***	.02	−.03	.02	−.03	.02	.02	.02	−.16***	.02	−.03	.02
Deficiencies	−.01***	.00	−.01***	.00	−.01***	.00	−.01***	.00	−.008***	.00	−.01***	.00	−.01***	.00	−.009***	.00
Large size (75 beds or more)	−.09***	.00	−.11***	.00	−.12***	.01	−.14***	.00	−.08***	.00	−.1***	.00	−.10***	.00	−.11***	.00
Ownership (ref: for profit)																
Government	.16***	.01	.17***	.01	.27***	.01	.18***	.01	.12***	.01	.14***	.01	.22***	.01	.14***	.01
Not for profit	.08***	.00	.09***	.00	.22***	.01	.12***	.00	.06***	.00	.1***	.00	.19***	.01	.11***	.00
Location (ref: rural)																
Rural	−.02**	.00	−.05***	.00	−.03	.01	.00	.00	−.04***	.00	−.06***	.00	−.04***	.01	−.04***	.00
Suburban	.05***	.00	.00	.00	.06***	.01	.07***	.00	.03***	.00	−.02**	.00	.03***	.01	.04***	.00
Family characteristics																
Relationship (Ref: Spouse)																
Son or daughter	.01*	.01	.01	.01	.02**	.01	.01*	.01	.01	.01	.00	.01	.01	.01	.01	.01
Other family	.00	.01	.00	.01	−.01	.01	.01	.01	.00	.01	.00	.01	−.01	.01	.01	.01
Nonfamily	.00	.01	−.01	.01	−.01	.01	−.01	.01	.01	.01	.00	.01	.00	.01	.00	.01
Female	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Visit frequency	.01*	.00	.00	.00	.01**	.00	.00	.00	.00	.00	.01*	.00	.00	.00	.00	.00
Phone call frequency	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Resident quality-of-life domain																
Environment									−.03***	.01	.01	.01	.02**	.01	−.02**	.01
Personal attention									.18***	.01	.15***	.01	.22***	.01	.03***	.01

	Model 1								Model 2							
	Satisfaction Domain								Satisfaction Domain							
	Care		Staff		Environment		Food		Care		Staff		Environment		Food	
Variables	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***	**Coefficient**	***SE***
Food									.34***	.01	.24***	.01	.25***	.02	.5***	.01
Engagement									−.03***	.00	−.02***	.00	.00	.01	.03***	.00
Negative mood									−.24***	.00	−.02***	.00	−.02***	.00	−.01***	.00
Positive mood									.01*	.00	.00	.00	.03***	.00	.02***	.00
R^2	.23		.24		.29		.25		.3		.29		.37		.35	
Adjusted R^2	.22		.24		.29		.25		.3		.29		.36		.35	
df	17		17		17		17		23		23		23		23	