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## Original Study

# Does Person-Centered Care Improve Residents' Satisfaction With Nursing Home Quality?



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## A B S T R A C T

**Keywords:**

Nursing homes  
person-centered care  
satisfaction  
long-term care  
culture change  
quality

**Objective:** Person-centered care (PCC) is meant to enhance nursing home residents' quality of life (QOL). Including residents' perspectives is critical to determining whether PCC is meeting residents' needs and desires. This study examines whether PCC practices promote satisfaction with QOL and quality of care and services (QOC and QOS) among nursing home residents.

**Design:** A longitudinal, retrospective cohort study using an in-person survey.

**Setting:** Three hundred twenty nursing homes in Kansas enrolled or not enrolled in a pay-for-performance program, Promoting Excellent Alternatives in Kansas (PEAK 2.0), to promote PCC in nursing homes.

**Participants:** A total of 6214 nursing home residents in 2013–2014 and 5538 residents in 2014–2015, with a Brief Interview for Mental Status score  $\geq 8$ , participated in face-to-face interviews. Results were aggregated to the nursing home level.

**Measurements:** My InnerView developed a Resident Satisfaction Survey for Kansas composed of 32 questions divided into QOL, QOC, QOS, and global satisfaction subdomains.

**Results:** After controlling for facility characteristics, satisfaction with overall QOL and QOC was higher in homes that had fully implemented PCC. Although some individual measures in the QOS domain (eg, food) showed greater satisfaction at earlier levels of implementation, high satisfaction was observed primarily in homes that had fully implemented PCC.

**Conclusion:** These findings provide evidence for the effectiveness of PCC implementation on nursing home resident satisfaction. The PEAK 2.0 program may provide replicable methods for nursing homes and states to implement PCC systematically.

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The application of person-centered care (PCC) in long-term care (LTC) settings is known as the culture change movement, which started in the 1980s.<sup>1</sup> Its purpose was to improve quality, particularly quality of life (QOL), in LTC settings through the implementation of person-centered practices.<sup>2,3</sup>

Several methods to promote quality in nursing homes have been developed. Policy initiatives, such as the Omnibus Reconciliation Act

of 1987, report cards, certifications, and pay-for-performance programs, are just a few examples.<sup>4</sup> One pay-for-performance program is the Promoting Excellent Alternatives in Kansas (PEAK) 2.0 program. It was started in 2012 and uses a tiered payment structure to incentivize nursing homes in Kansas to implement PCC. Participating homes are provided with extensive training and education about PCC and what it means. A structured, external evaluation process is used to determine the PCC level. This allows for uniformity in the definition and level of implementation of PCC,<sup>5</sup> a gap previously found in the literature.<sup>6,7</sup>

Evaluating the effectiveness of PCC practices and nursing home quality can be challenging. Quality is a complex and multifaceted concept, and many efforts have been made to measure this construct.<sup>4</sup> However, external quality measures (eg, Nursing Home Compare) do not necessarily reflect whether residents are satisfied with the services they receive.<sup>8</sup> The resident's perspective is a key feature of

The authors declare no conflicts of interest.

This work was funded by the Retirement Research Foundation (grant number 2015-060). They initially approved the methodology and data sources, but had no other part in the work presented in this manuscript, nor in the decision to submit.

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<http://dx.doi.org/10.1016/j.jamda.2017.06.007>

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determining the effectiveness of PCC practices<sup>9,10</sup> and nursing home quality.<sup>11</sup> This perspective can help inform providers, policy makers, families, and consumers of LTC about QOL, quality of care (QOC), and quality of service (QOS).<sup>12</sup> Nevertheless, there are challenges to gaining the residents' perspective. In Castle's<sup>13</sup> review of 50 resident satisfaction studies, he found that many of them evaluated satisfaction differently. This can make comparability and interpretation of findings difficult.

Previous studies of PCC have been limited by inconsistent evaluation measures and variation in the level of PCC implementation, which has made interpretation of the effectiveness of PCC difficult.<sup>6</sup> Different methods of designing PCC interventions as well as ways to define this concept can also serve as barriers to evaluating PCC.<sup>3</sup> Previous studies examining outcomes of PCC interventions have also suffered from small sample sizes.<sup>14–17</sup>

This study addresses these evidence gaps by evaluating resident satisfaction in several hundred Kansas nursing facilities spread across a range of PCC implementation levels, ranging from non-implementation to full implementation. To the authors' knowledge, this is the first large-scale study of the effects of PCC on resident satisfaction. The satisfaction instrument used in this study was created by My InnerView, which conducted the first national survey of resident satisfaction in the United States.<sup>18</sup> PEAK is well situated for objective examination and analysis of outcomes of PCC because of the program's consistency in PCC definition, its objectively determined levels of PCC implementation, and its standardization of evaluation measures.<sup>5</sup> It is hypothesized that residents in nursing homes that have advanced further in the PEAK program, and have thus implemented PCC to greater degrees, will report greater satisfaction with the nursing home.

## Methods

A retrospective cohort study was conducted of the associations between level of PCC implementation and resident-reported overall satisfaction and satisfaction with QOL, QOC, and QOS among 320 facilities in Kansas during the PEAK 2.0 program years of 2013–2014 and 2014–2015.

### PEAK 2.0

PEAK consists of 4 domains of PCC that have 12 core areas within the domains. There are six levels of PCC implementation in the PEAK program. At the foundation level, homes learn about PCC, which ensures a consistent definition of PCC. Homes at levels 3 through 5 have fully implemented PCC practices and work on sustaining these practices.<sup>5</sup>

### Participants

All nursing homes in the state, regardless of PEAK 2.0 participation status, were asked to have all residents with a Brief Interview for Mental Status score of 8 or greater complete a resident satisfaction survey during the winters of 2014 and 2015. A total of 6214 residents in 305 nursing homes were surveyed in 2014, and 5538 residents in 283 nursing homes were surveyed in 2015. A total of 320 of the state's 349 facilities participated in at least one of the 2 years, with 265 facilities participating both years.

### Measures

Data were taken from a combination of KDADS (Kansas Department for Aging and Disability Services) program data,<sup>19–22</sup> Centers for Medicare and Medicaid Services' Nursing Home Compare publicly

available data,<sup>23,24</sup> CASPER (Certification and Survey Provider Enhanced Reporting) survey reports,<sup>25,26</sup> and 2010 US census data.<sup>27</sup>

### Survey

KDADS contracted with National Research Corporation to assess resident satisfaction with PCC in Kansas nursing homes. The 24-item instrument was developed in 2008 by National Research staff and researchers at the University of Minnesota.<sup>28</sup> National Research provided several additional questions to KDADS, tested in focus groups, for a uniquely tailored instrument that would address key areas of interest related to PEAK. The resulting version was used by KDADS and consisted of 32 individual items grouped according to 4 subscales: QOL, QOC, QOS, and global satisfaction (R. Kortum, BS, e-mail communication, December 2016).

### Process

Specially trained interviewers conducted face-to-face interviews in participating homes within an approximately 1-month time frame. Interviews took place in residents' rooms or another quiet place in the nursing home. If an interviewer determined during the interview that a resident was too cognitively impaired or otherwise had difficulty understanding the interview, the survey was not included in the final data set (R. Kortum, BS, e-mail communication, February 2017).

### Outcome Variables

There were 9 questions measuring the subscale of QOL, 11 for QOC, 10 for QOS, and 2 global satisfaction measures. Participants rated these items on a 4-point scale from "excellent" to "poor."

### Predictor Variables

PEAK program levels were redefined as stages as follows: stage 0, nonparticipants; stage 1, foundation level; stage 2, level 1 (implementation of PCC in 3–4 program areas); stage 3, level 2 (implementation of PCC in 8–12 program areas); and stage 4, levels 3 to 5 (full implementation of PCC in all 12 program areas). A time variable (year) was included to control for secular trends.

### Control Variables

Factors previously shown to distinguish culture change adopters from nonadopters<sup>2,6</sup> and to correlate with nursing home quality<sup>29–31</sup> were controlled for: profit status, Continuing Care Retirement Community affiliation, size, occupancy, chain membership, insurance payment type, survey health deficiencies, expected hours of staffing per resident-day, actual hours of staffing, county-based Herfindahl-Hirschman index, and an urban-rural measure. The Multivariate Imputation with Chained Equations (MICE) algorithm in R<sup>32</sup> was used to impute missing data. The 5 data sets were averaged and these values were used to complete the covariate data set.

Propensity score adjustment was performed to control for potential confounders to the degree that randomization would affect all observed characteristics (but not on unobserved ones).<sup>33</sup> The Generalized Boosted Model<sup>34,35</sup> was used to generate propensity scores for the 5 treatment groups. Single values were generated representing a given home's probability of being in any of the 5 treatment groups (stages 0–4) each year. Propensity scores rather than the potential confounders were used in the analyses.

**Table 1**  
Sample Demographics by Program Stage

	2013-2014					2014-2015				
	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4
Not-for-profit, %	26*	32	51		50	24*	36	35	56	56
CCRC-affiliated, %	11*	24	31		50	10*	21	27	35	56
Chain-owned, %	51	47	50		13	53	49	39	47	11
Certified beds, mean (SD)	64 <sup>†</sup> (37)	74 (41)	67 (31)		99 (31)	63 (39)	65 (30)	72 (41)	72 (35)	88 (33)
Occupancy, mean % (SD)	78* (17)	81 (18)	87 (9)		86 (10)	75* (18)	81 (18)	84 (12)	88 (9)	90 (9)
Medicaid residents, mean % (SD)	60 (77)	56 (17)	53 (21)		46 (19)	52 (26)	51 (18)	57 (19)	53 (20)	52 (22)
Private-pay/-insurance residents, mean % (SD)	40 (70)	32 (12)	37 (20)		42 (19)	35 (25)	39 (19)	30 (15)	37 (19)	41 (19)
Aide HRD, mean (SD)	2.6* (0.76)	2.5 (0.53)	2.7 (0.61)		3.5 (0.68)	2.6 (0.77)	2.6 (0.64)	2.8 (0.58)	2.7 (0.60)	3.3 (0.86)
LPN HRD, mean (SD)	0.64 <sup>†</sup> (0.31)	0.78 (0.61)	0.58 (0.23)		0.56 (0.21)	0.65 (0.33)	0.58 (0.25)	0.74 (0.61)	0.58 (0.27)	0.71 (0.24)
RN HRD, mean (SD)	0.88 (0.95)	0.67 (0.27)	0.73 (0.25)		0.86 (0.12)	0.91 (0.70)	0.74 (0.27)	0.78 (0.35)	0.77 (0.24)	0.83 (0.17)
Exp. tot. hrs., mean (SD)	3.9 <sup>†</sup> (0.48)	3.8 (0.34)	3.8 (0.32)		3.8 (0.23)	3.9 <sup>†</sup> (0.49)	3.8 (0.36)	3.8 (0.22)	3.7 (0.35)	3.7 (0.42)
Health deficiencies, mean (SD)	7.1 (7.5)	7.3 (6.0)	5.6 (6.9)		3.6 (3.8)	7.4 (8.0)	6.5 (6.7)	7.5 (7.8)	4.4 (4.3)	3.6 (5.0)
Herfindahl-Hirschman index, mean (SD)	3510 (3105)	2849 (2416)	3061 (2551)		2127 (1730)	3247 <sup>†</sup> (3059)	3672 (2771)	3052 (2792)	2211 (1526)	2284 (1659)
Percent urban, mean % (SD)	55 (44)	51 (44)	56 (40)		62 (41)	57 (43)	49 (42)	56 (43)	60 (40)	56 (44)
Total N	178	34	115	0	8	128	95	34	52	9

CCRC, Continuing Care Retirement Community; Exp. tot. hrs., expected total hours of RN, LPN, and aide staffing given facilities' case-mix; HRD, hours per resident-day; LPN, licensed practitioner nurse; RN, registered nurse; SD, standard deviation.

Stages are as follows: stage 0, nonparticipants; stage 1, foundation level; stage 2, level 1; stage 3, level 2; stage 4, levels 3-5.

\* $P < .01$ .

<sup>†</sup> $P < .05$ .

## Analyses

One-way analyses of variance, chi-square, and Fisher exact tests were used to examine demographic differences between homes at different stages of PCC implementation. Beta mixed regression models were used for the analyses because of the boundedness and non-normal distribution of the outcomes.<sup>36,37</sup> The SAS v. 9.4 GLIMMIX procedure was employed with the logit link function. All models were calculated for stage, time, and propensity scores. The reference group for all stage analyses was stage 0 (nonparticipation).

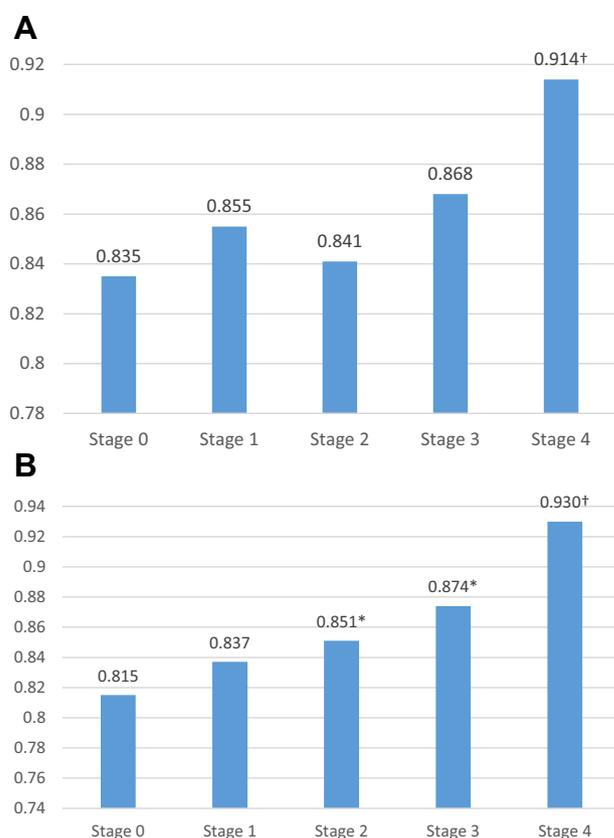
## Results

Demographic differences among homes at different program stages are reported in Table 1. Homes that had fully implemented PCC were more likely to be not-for-profit (50% vs 26% in 2013-2014; 56% vs 24% in 2014-2015), Continuing Care Retirement Communities (50% vs 11% in 2013-2014; 56% vs 10% in 2014-2015), and had higher occupancy rates (86% vs 78% in 2013-2014; 90% vs 75% in 2014-2015). Additionally, before propensity score adjustment, homes not in the PEAK program had higher acuity levels as evidenced by higher expected total hours of nurse and aide staffing. After propensity score adjustment, these factors were balanced across facilities at different program stages.

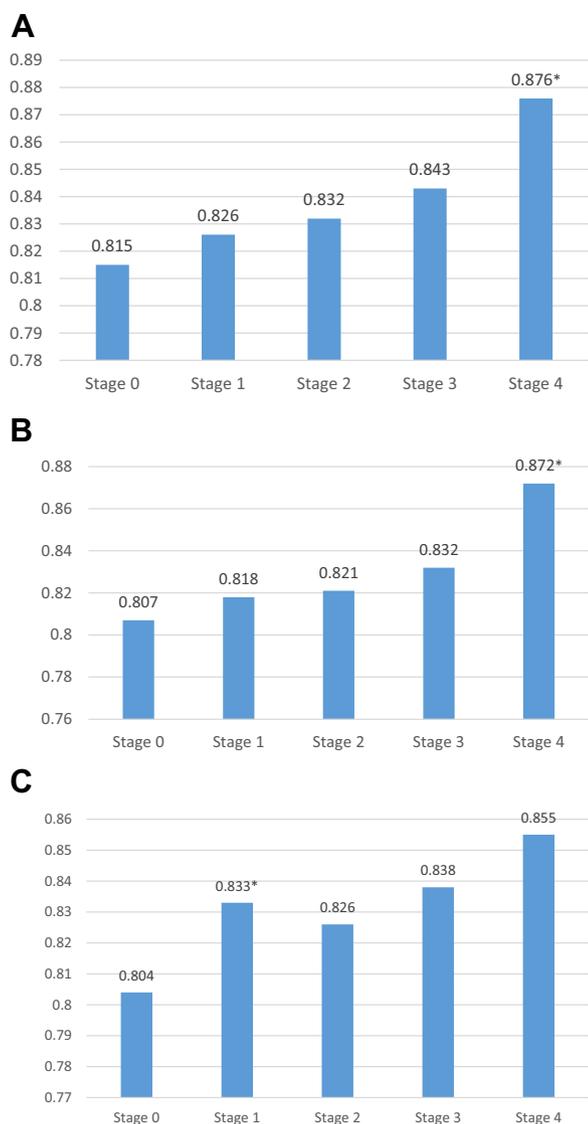
Figure 1A shows the adjusted proportion of residents rating their overall satisfaction with their facilities as “excellent” or “good” as a function of PEAK 2.0 stage. Only stage 4 ratings, from facilities that had comprehensively adopted PCC, were significantly higher than ratings from stage 0 facilities [odds ratio (OR) = 2.47,  $P = .005$ ]. Figure 1B shows the proportion of residents indicating that they would recommend their nursing home to others. Residents had greater odds of recommending stage 2, 3, and 4 nursing homes than those in stage 0 facilities (OR = 1.58,  $P = .011$ ; OR = 1.30,  $P = .024$ ; OR = 3.01,  $P = .001$  respectively).

Figure 2 shows the proportion rating QOL, QOC, and QOS overall as “excellent” or “good” as a function of PEAK stage. For overall QOL and overall QOC, only stage 4 facilities were rated significantly higher than stage 0 facilities (OR = 1.60,  $P = .029$ ; OR = 1.63,  $P = .02$  respectively). In contrast, only stage 1 was rated significantly higher than stage 0 facilities (OR = 1.22,  $P = .019$ ) for overall QOS.

Table 2 shows the ORs for the individual survey items by the QOL, QOC, and QOS subscales. The individual items for QOL and QOC were primarily significant in homes that had fully implemented PCC (7 of 9 QOL items; 10 of 11 QOC items). For QOS, some food and cleanliness



**Fig. 1.** (A) Proportion of residents rating overall satisfaction by stage. (B) Proportion of residents recommending nursing home by stage. Reference group is stage 0. Items are categorized as those rated as “excellent” and “good” vs “fair” and “poor.” Stages are as follows: stage 0, nonparticipants; stage 1, foundation level; stage 2, level 1; stage 3, level 2; stage 4, levels 3-5. \* $P \leq .01$ ; <sup>†</sup> $P \leq .05$ .



**Fig. 2.** (A) Average proportion of residents rating QOL by stage. (B) Average proportion of residents rating QOC by stage. (C) Average proportion of residents rating QOS by stage. Reference group is stage 0. Items are categorized as those rated as “excellent” and “good” vs “fair” and “poor.” Findings are reported for 9 QOL individual items (in A), for 11 QOC individual items (in B), and for 10 QOS individual items (in C). Stages are as follows: stage 0, nonparticipants; stage 1, foundation level; stage 2, level 1; stage 3, level 2; stage 4, levels 3-5. \**P* ≤ .05.

items received ratings significantly higher earlier in the process than those for stage 0 homes, which had not joined PEAK (5 of 10 QOS items). However, even with QOS, most individual items were rated significantly higher in stage 4 nursing homes than stage 0 homes (6 of 10 items).

**Discussion**

This study examined the effect of different levels of objectively determined PCC implementation in a large number of nursing homes, which fills a gap in the existing literature.<sup>6</sup> Beta mixed regression analyses showed that residents in homes that had fully implemented PCC were more likely to rate their overall QOL and QOC highly. Residents in homes that had fully implemented PCC also reported higher overall satisfaction. These findings are consistent with previous studies that found improvements in both QOL and QOC in nursing homes that had implemented PCC practices.<sup>6,38</sup>

**Table 2**  
Odds Ratios for Overall Satisfaction, QOL, QOC and QOS and Individual QOL, QOC, and QOS Items by Stage

	Stage 1	Stage 2	Stage 3	Stage 4
<b>Overall Measures</b>				
Satisfaction overall	1.17	1.05	1.30	2.11*
Recommend to others	1.16	1.30 <sup>†</sup>	1.58 <sup>†</sup>	3.01*
QOL overall	1.07	1.13	1.22	1.60 <sup>†</sup>
QOC overall	1.08	1.09	1.19	1.63 <sup>†</sup>
QOS overall	1.22 <sup>†</sup>	1.15	1.26	1.43
<b>QOL items</b>				
Meet my choices and preferences	1.00	1.20	1.37	2.09*
Follow own routine	1.01	1.20	1.23	2.03*
Show respect	0.94	1.10	1.12	2.31*
Know what I like	1.12	1.13	1.40 <sup>†</sup>	1.86 <sup>†</sup>
Privacy	1.10	1.38*	1.07	1.70 <sup>†</sup>
Talk with me	1.18	1.09	1.33	1.30
Know me personally	1.19	1.20	1.26	1.43
Offer meaningful activities	1.03	1.09	1.23	1.70 <sup>†</sup>
Meet spiritual needs	1.15	1.17	1.15	2.08*
<b>QOC items</b>				
Nurse care	1.17	1.08	1.30	2.23*
Aide care	1.14	1.11	1.23	1.65 <sup>†</sup>
Aides' knowledge and skills	1.14	1.15	1.17	2.23*
Rehabilitation quality	1.01	1.06	1.13	2.00 <sup>†</sup>
Support for your care decisions	1.22	0.98	1.08	1.93*
Adequate weekday staff	1.12	1.04	1.26	1.82 <sup>†</sup>
Adequate weekend staff	1.14	1.10	1.10	1.45
Meeting grooming needs	0.98	1.11	1.02	2.08*
Informing you and family of status	1.07	1.41*	1.16	1.93 <sup>†</sup>
Showing care and concern	1.16	1.16	1.29	2.20*
Feeling a part of the community	1.04	1.08	1.11	2.16*
<b>QOS items</b>				
Meeting my needs and concerns	1.23	1.04	1.29	2.04*
Appeal of NH as a home	1.17	0.98	1.17	2.54*
Safety	1.00	0.97	1.22	2.85*
Security	1.25 <sup>†</sup>	1.19	1.13	2.16*
Cleanliness	1.46*	1.31 <sup>†</sup>	1.50*	2.70 <sup>†</sup>
Taste of food	1.35*	1.15	1.48 <sup>†</sup>	1.24
Food variety	1.31 <sup>†</sup>	1.21	1.40 <sup>†</sup>	1.47
Food quality	1.20	1.18	1.36	1.39
How enjoyable dining is	1.27 <sup>†</sup>	1.22	1.18	1.97*
Laundry services	1.23	1.36*	1.53 <sup>†</sup>	1.35

NH, nursing home.  
Reference group is stage 0. Items are categorized as those rated as “excellent” and “good” vs “fair” and “poor.” Stages are as follows: stage 0, nonparticipants; stage 1, foundation level; stage 2, level 1; stage 3, level 2; stage 4, levels 3-5.  
\**P* ≤ .01.  
<sup>†</sup>*P* ≤ .05.

When looking at individual measures of QOL, residents in homes that had fully implemented PCC reported high satisfaction with the home “meeting your religious and spiritual needs.” This is consistent with Burack and colleagues,<sup>39</sup> who found that spiritual well-being was important to residents’ reported satisfaction. It may be that relationships, understanding, and trust between staff and residents must be formed over time. Then, staff can use this knowledge to support residents’ spiritual desires and needs.

Residents in homes that had fully implemented PCC also reported being satisfied with the choices available to them, the respect shown to them, their privacy needs being met and staff knowing their preferences from the QOL subdomain. Staff can have a strong influence on resident satisfaction,<sup>40</sup> and training staff is important to equip them with the skills necessary to meet resident needs.<sup>41</sup> PEAK staff train nursing home staff and administrators on the tenets, goals, and operationalization of PCC, which is central to the success of the program. This type of training could be implemented in other states or adopted by individual homes to provide a strong foundation for implementing change.

Higher ratings of satisfaction with QOC are consistent with the growing body of studies finding that PCC is associated with improved clinical outcomes.<sup>6,38</sup> In 2 previous large-scale studies,<sup>6,38</sup> moderately

improved outcomes were found in strong as compared to partial or non-PCC adopters. The current findings indicate that residents' ratings of satisfaction with QOC are best when facilities have fully implemented PCC. The improvement may result from elders' increased sense that they have the right to voice concerns about their health and from consistent assignment of staff to residents, which is part of the staff empowerment domain in PEAK.

Resident satisfaction was reported earlier in the PCC process on measures of QOS, especially measures related to food. Food has been found to be a strong indicator of satisfaction among residents as well as family members<sup>42,43</sup> and is part of the resident choice domain in PEAK. Choice has been found to be directly related to resident satisfaction.<sup>9</sup> Many homes focus on making changes to food and dining options when they first join the PEAK program, so these benefits may be realized earlier in the process (L. Cornelison, MS, e-mail communication, March 2017). Many stage 4 PEAK homes have multiple dining rooms to enhance residents' dining experience and offer more intimate settings rather than the large main dining room. Staff have reported positive outcomes and consistent, spontaneous use of these spaces by residents (M.L.K. and J.L.P., unpublished data 2016).

The study was limited to residents in homes that agreed to participate in the survey, which could have resulted in selection bias. However, a majority of homes in Kansas (320 of 349) chose to participate in the study, and the sample included both PEAK and non-PEAK homes. Participants were also limited to residents who were cognitively intact. It would be beneficial in future studies to explore whether satisfaction differs for individuals who are cognitively impaired.

## Conclusion

This study provides evidence for the importance of PCC for resident satisfaction. Incorporating the residents' perspective can provide critical feedback for nursing homes to ensure a high level of quality and that services are meeting residents' needs and desires.<sup>10,12</sup> The need for practical ways to implement PCC becomes increasingly necessary for nursing homes since the passage of Centers for Medicare and Medicaid Services' Final Rule in September 2016. The PEAK program is a well-structured, systematic method for implementing PCC in nursing homes. This model, or elements of the program, could be implemented by individual homes. States could also adopt the program and provide financial incentives that have proven effective in attracting homes not normally adopting PCC practices.<sup>44</sup> Consumers make choices based on their preferences<sup>45</sup> and if they are not satisfied with the services, they may elect to go elsewhere. This could have financial implications for homes. Thus, the program has benefits not only to residents but also to an organization's bottom line and reputation.

## Acknowledgments

We thank the Kansas Department for Aging and Disability Services for providing us with the resident satisfaction data used in this study and the National Research Corporation for providing us with details about the survey data collection process. We also thank the nursing homes and residents who participated in the survey, without whom this work would not be possible.

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