Washington State Nursing Facility Characteristics, Foreign-born Employees and Quality Ratings: Does the proportion of foreign workers predict quality differences?

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Abstract

The number of elderly people in the U.S. is projected to more than double over the next 30 years, leading to an increase in demand for long-term care. Washington State is following national industry trends, relying heavily on the foreign-born workforce to provide care for a growing number of disabled people in institutional settings. This descriptive, cross-sectional study relates Washington State nursing facility characteristics, including independent quality ratings, to the view of facility administrators as gathered in an on-line survey. We used independent sources to determine profit and chain status, size of facility as measured by number of beds, and geographic location.We then asked administrators to estimate the proportion and origins of their foreign-born employees, and to describe any problems associated with these employees. After controlling for other characteristics, the proportion of foreign-born employees was not a negative predictive factor in facility quality ratings. Administrators reported their main concerns to be issues related to communication and to discrimination by residents against foreign-born employees.

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DEDICATION

I would like to dedicate this work to all my family and friends who supported me through the last five years but especially for my father, Brian Acker, my friend, Sarah Frey and my partner, Brownyn Vogler, without whom none of this would have been possible. Most importantly I want to make a special dedication to honor my mother for her beauty, strength and support in body and spirit.

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ABSTRACT

The number of elderly people in the U.S. is projected to more than double over the next 30 years, leading to an increase in demand for long-term care. Washington State is following national industry trends, relying heavily on the foreign-born workforce to provide care for a growing number of disabled people in institutional settings. This descriptive, cross-sectional studyrelates Washington State nursing facility characteristics, including independent quality ratings, to the view of facility administrators as gathered in an on-line survey. We used independent sources to determine profit and chain status, size of facility as measured by number of beds, and geographic location.We then asked administrators to estimate the proportion and origins of their foreign-born employees, and to describe any problems associated with these employees. After controling for other characteristics, the proportion of foreign-born employees was not a negative predictive factor in facility quality ratings. Administrators reported their main concerns to be issues related to communication and to discrimination by residents agains foreign-born employees.

INTRODUCTION

America's aging population is expanding as the baby boomer demographic bulge moves into its golden years. The number of individuals 65 years and older is expected to more than double over the next 30 years, growing from 39 to 89 million. The very old-- those aged 85 years and older-- will triple, hitting 19 million people (Federal Interagency Forum on Aging-Related Statistics, 2010). Washington State has one of the fastest growing elderly populations in the nation (U.S. Census Bureau, 2013). A rising life expectancy, generated in part by improved life-saving care for the chronic diseases of old age, will serve to significantly expand the demand for long-term nursing home care (Lee, Kovner, Mezey, & Ko, 2001). The number of individuals using long-term care facilities is expected double by 2050, growing to 19 million (DHS and DOL, 2003). While people are able to live longer with disabilities and chronic diseases, they are requiring more direct care from an increasingly more specialized and skilled health workforce (American Health Care Association, 2001). The costs of this care expansion are high.

Expanded care for the elderly is an important public policy issue, as the government provides so much of the cost for such care. In 2005, Medicaid accounted for nearly half (49%) of all long-term care financing (Georgetown University Health Policy Institute, 2007). About a third of current Medicaid expenditures are for elderly nursing home patients, about five times more than the program spends on care for low-income children (Bernstein, 2012). Part of the reason for this is that the average annual Medicaid expenditurefor a nursing home patient in 2012 was between $81,000 and $90,500 (Mullin, 2012), far higher than the cost of the merely episodic care required by a generally healthy population of children.

The 2010 Patient Protection and Affordable Care Act (ACA) commits the nation to expanding Medicaid eligibility even further, additionally fueling the demand for long-term care (Stone & Bryant, 2012). To date, 26 states including Washington, have elected a full expansion of Medicaid under the ACA, meaning the federal government will pay all Medicaid expansion costs between 2014 and 2016, settling at 90% by the year 2020 (Miller, Lentz, Maududi, & Harding, 2013).

The ACA also includes a number of features to expand the supply of health professionals for geriatric care, and is the first federal legislative effort specifically to address development of the direct care workforce in the long-term care industry (Stone & Bryant, 2012). A lack of qualified applicants combined with low interest in these jobs have led to challenges in both finding and recruiting applicants for nursing home positions (Lehning & Austin, 2010).

The lack of interest in pursuing long-term care as a career opportunity despite the demand for workers, stems from a number of factors including the difficult and sometimes unpleasant nature of the work, the perceived lack of value and respect for these workers, insufficient training and autonomy, and low wages with limited opportunities for career advancement (Miller, 2010). Long-term care direct-service positions are not known for their glamour. Nurses, aides and staff who work in nursing homes or other long-term care facilities find themselves near the bottom of the "nursing profession's prestige structure" (Jervis, 2002). At the same time, despite the low pay, many aspects of providing care for an elderly disabled population requires considerable skill (Ehrenreich, 2001).

Foreign-born workers, especially recent immigrants, are frequently identified as potential sources of new workers in long-term care (Priester & Reinardy, 2003). Thousands leave their

homelands each year to work in more developed countries in a variety of professions. Sometimes those trained as doctors or nurses in their home countries start out new careers in the U.S. as direct-care workers in nursing homes, hoping eventually to become licensed in the higher professional status positions for which they originally trained (Redfoot & Houser, 2005).

Quality problems in nursing homes persist, despite demands for improvement. The Institute of Medicine (IOM) published a landmark report almost 30 years ago calling for major reforms in the way nursing home quality is monitored (IOM, 1986). Implementation of IOM recommendations began in 1987 with the passage of the Nursing Home Reform Amendment to the Omnibus Budget Reconciliation Act (OBRA), which mandated increased minimum staffing regulations and quality of care monitoring (Mukamel & Spector, 2003).Medicaid and Medicare led efforts to apply quality ratings to nursing homes to enhance consumers' ability to assess quality and make informed choices beginning in 1998 with Nursing Home Compare, a national on-line nursing home report card implemented by the Centers for Medicare and Medicaid Services (Dube, 2009).

The Washington Health Care Association (WHCA) is a statewide nonprofit representing assisted living and skilled nursing facilities. Its mission is to promote quality long-term health care and services while advocating for owners of the facilities and their constituents. WHCA serves on the state's Healthcare Personnel Shortage Task Force, where it addresses staffing quality, retention and turnover (WHCA, 2013). As nursing home administrators manage the expansion of nursing home care to a growing population of eligible residents, they have called for more research in this area, especially in relation to the increasingly immigrant and foreign-born workforce (Khatutsky, Wiener, & Anderson, 2010).

Our study uses a variety of cross-sectional data sources to explore the role of foreign-born workers in relation to independent measures of quality of care.

METHODS

This cross sectional descriptive study uses data provided by Washington State skilled nursing facility administrators, supplemented with independently obtained data about those same nursing homes. We conducted an online survey of skilled nursing facilities in May and June of 2012, using the "WebQ" tool of the University of Washington's human-subject-certified Catalyst program (Geyer, et al., 2011). The sampling frame consisted of all 228 skilled nursing facilities eligible to join the WHCA, which provided the necessary contact information. A 23-question instrument was sent to nursing facilities throughout Washington State and remained open to participation for a month. Facility administrators were sent an initial email requesting their participation, with reminder emails each week for the subsequent three weeks. The final reminder included a message of encouragement from the WHCA's director of regulatory and governmental affairs. A total of 73 administrators completed the survey, yielding a 33% response rate (after removing from the denominator nine administrators with no email contact information and one closed facility).

Administrators were asked to respond to a variety of questions pertaining to the composition of their workforce, with a focus on foreign-born workers but considering only those who held positions below the level of registered nurses, including direct care and support staff.

In addition to the variables generated by survey questionnaire responses, we supplemented our data set with information obtained from publicly-available data sources about each of the nursing facilities. These additional variables included the profit status of the nursing

facility, whether the facility was part of a multi-facility chain, the number of beds licensed for the facility, the quality rating provided by "Nursing Home Compare," and the facility's location. Location data were used to generate variables about rural vs. urban status and whether the facility was in Eastern or Western Washington (Eastern and Western Washington are divided by a mountain range, with the urban Interstate 5 corridor running north-south through Western Washington). The data sources for these independently-obtained variables included the aforementioned Nursing Home Compare website, the WHCA database, and a national electronic database of all hospitals and nursing facilities (Hospital-Data.com, 2013).

We classified as nonprofit facilities those either government-owned or registered as nonprofits with the Internal Revenue Service. Chain status and bed count were ascertained from a review of the facility's website or one of the other data sources named above. Urban or rural location status was coded using the University of Washington's Rural-Urban Commuting Area Codes system, developed by the Department of Family Medicine's Rural Health Research Center (University of Washington, Rural Health Research Center, 2013). In general, urban areas were defined as those with a population of 10,000 or more.

The Nursing Home Compare database provided four measures of quality for each facility based on: 1) the ratio of staffing hours per bed (including RN, LPN, LVN, and CNA); 2) a resident survey; 3) a health inspection rating including the most recent comprehensive (annual) inspection and any inspections due to complaints in the last three years; and 4) an overall composite rating using a five-star ranking system. Scores are recorded on a scale of one to five, with one star indicating "much below average," and five stars "much above average."

Variables from the online survey and other sources were imported into STATA 11.2 data analysis software. We conducted cross tabulations, with significance of association tested by chi-square. We conducted a linear regression analysis to attempt to predict quality ratings from facility characteristics, including the proportion of foreign-born workers as reported by administrators.

Administrators were asked for comments in several places in the survey, which generated qualitative text data. We hand-coded these responses to identify recurring themes and extract exemplar quotes to supplement the results of the quantitative data analysis. Additionally, we met with the WHCA's director of governmental and regulatory affairs to clarify contextual issues.

Funding for the research study was provided by a grant from the University of Washington's Harry Bridges Center for Labor Studies. The Human Subjects Division at the University of Washington approved the study (41830-EG).

RESULTS

Characteristics of nursing facilities in our study are provided in Table 1. Three in four (75%) were for-profit organizations, most (58%) were part of a multi-facility (chain) operation, most (81%) were urban, and/or located in Western Washington (78%), and the average size was 98 beds. Most (60%) were members of the WHCA organization, and the average overall quality rating of respondents was 3.3 stars (from a range of 1 to 5 stars).

We compared the 73 respondents in this study to the 145 non-respondents. For each publicly-available variable, we calculated an index of dissimilarity. The largest difference was that 11% more Western Washington facilities responded than did those from Eastern Washington, for an index of dissimilarity of 5.6%. (See Table 1.)

As the main variables of interest in our study were facility quality ratings and administrator assessments of issues associated with a foreign-born workforce, we calculated characteristics and quality ratings in relation to the foreign-born proportion of the workforce (25% and less, 26-50%, or more than 50%). All facilities reporting more than half their lower-level workforce was foreign-born were located in urban, Western Washington. Almost all (93%) rural facilities and the majority (81%) of those in Eastern Washington fell in the category of having the fewest foreign-born employees. While the largest facilities were evenly distributed among the three proportion categories of foreign-born workers, the smallest facilities were most likely to have the smallest proportion of foreign-born workers.

Factors that did not seem to be related to the proportion of foreign-born workers included profit status or multi-facility (chain) status. Nursing facilities with the highest quality ratings were more likely to have more foreign-born employees. (See Table 2.)

More than half of administrators (56%) reported their facilities did not offer any type of educational training opportunities for employees. The majority of facilities that did offer employee training had 25% or fewer foreign-born employees, and were more likely to be smaller, and to be located in urban, Western Washington. We found no correlation between training opportunities offered and facility profile characteristics, such as profit status, chain or multi-ownership status or facility size. The primary types of trainings offered (from a closed list of choices) included tuition assistance for classes of an employee's choice (18%); off-site skills development training (10%); English language training (8%); classes required to enter a professional degree program (1%); and/or some other form(s) of training (27%). Other forms of

training offered were described in an open-ended question and included nursing assistant training and education assistance for advanced degrees. Detailed training data are not tabled.

Overall, 43% of administrators, in response to a yes/no question, reported having difficulty finding and hiring U.S.-born job applicants. While more than half (56%) of responding facilities with the most foreign-born employees reported difficulty finding US-born applicants to fill positions, this was not statistically different from the 37% of facilities with the fewest foreign-born employees who said it was similarly difficult ($p=0.177$). See Table 2.

In open-ended comments, one administrator noted, "The interest in long term care and geriatric care lags significantly behind the interest in wanting to work in a hospital setting." Another administrator who reported difficulty filling facility vacancies said, "There is a shortage of trained individuals, and in a largely Medicaid population of residents it is challenging to compete with other for-profit and larger healthcare facilities on the wage front." Other administrators cited general "lack of interest" and that "many [U.S.-born applicants] seem to be unwilling to put in the time."

Administrators were asked in an open-ended question to report the country or region of origin for the majority of their foreign-born employees. Respondents could name multiple countries or regions. The majority reported that their foreign-born employees were largely from an Asian or Pacific Island country (69%), usually the Philippines. A large proportion (41%) reported that a significant number of their employees came from an African country, about a third (36%) reported a Latin American country, and 11% named other regions. Among those who reported having more than half their employees from abroad, 12 of 16 facilities reported that dominant countries of origin were in Africa and 11 of 16 reported that dominant origin countries

were in Asia or the Pacific Islands. Among facilities with the smallest proportion of workers from other countries, dominant countries were most likely to be in Asia (27 of 41 facilities) or Latin America (19 of 41 facilities). The large majority of African-dominated nursing facilities (>90%) were urban and located in Western Washington, and 70% of these had more than 100 beds. Asian-country dominant nursing facilities, by contrast, were equally likely to be small as large, and most of the Latin-American dominated facilities (77%) were small-sized facilities. (See Tables 2 and 3.)

Administrators were asked to name their concerns about foreign-born employees. They were offered a menu of choices that included difficulties related to language, cultural or religious differences, patient discrimination against foreign staff, racial or cultural tension between employees, higher rates of illness and family issues or higher rates of absenteeism or turnover. A large majority (81%) reported having experienced one or more of these issues with their foreign-born employees. Most administrators (73%) reported issues related to language differences, while a smaller proportion (38%) reported challenges related to cultural and/or religious differences. Almost half (49%) the administrators reported discrimination by patients/clients toward their foreign-born workers. (See Table 4.)

One administrator stated in an open-ended question, "My concern is that he/she can speak English that is understandable, and he/she can comprehend English and understand U.S. culture…" Another noted, "[My foreign-born staff are] very good and hard working staff limited in effectiveness due to language and cultural differences." One administrator reported that communication problems had led to "abuse allegations [which] required us to suspend [the

employee], pending investigations. Most often residents do not think they understand [and] sometimes the body language is misunderstood."

The larger the reported proportion of foreign-born employees the more likely administrators were to report issues with their employees. All administrators of facilities where foreign-born employees comprised half or more of the workforce said they experienced one or more issues, compared to a smaller proportion (68%) of those with 25% or fewer foreign-born employees.

In an open-ended response to a question about demographic shifts in the foreign-born workforce in long-term care, one administrator stated she has, "definitely [seen] an increase in workers from Africa and India," and another stated she has seen "a shift from Southeast Asia to more African employees." Administrators with more African employees reported more concerns (97%) than non-African-dominated facilities (70%). More than half (59%) the facilities with African-dominated workforce reported more issues related to communication barriers from cultural and/or religious differences, compared to 25% of non-African employee dominated facilities. A large majority (79%) of facilities with predominantly African employees reported patient/client discrimination against their foreign-born employees, compared to 30% of other facilities, suggesting race is a factor in this problem. Data not tabled.

Fewer than half of administrators (47%) reported educational training opportunities available in their facilities. Facilities offering more training reported more difficulties with foreign-born employees. However, this could be attributed to the fact that those facilities reporting more difficulties with their foreign-born employees were also more likely to offer training; more than half (54%) of facilities reporting issues offered some form of training. See

Table 4. Of facilities whose administrators reported communication issues due to cultural and/or religious differences, 68% offered some form of education training with 83% offering English language training. Nearly two thirds (64%) of facilities whose administrators reported issues with patient/client discrimination toward foreign-born employees offered training opportunities to their workforce. Data not tabled.

About a quarter of administrators (23%) reported racial or cultural tension among their foreign-born employees. One administrator reported that "at times, the teamwork is racially divided." Other administrators reported noticing employee tension due to cultural acceptability of gender roles. For example, "male African employees did not like having female supervisors" or tension occurs when "Filipino male versus female issues arise."

Quality ratings suffered when nursing homes were for-profit or had chain or multi ownership status. Nonprofit, non-chain facilities had above average overall and staff ratio ratings (greater than 4 stars). Notably, ratings from resident surveys were higher for facilities with larger number of foreign-born staff. In facilities reporting greater than 50% foreign-born staff, the average quality rating by residents was 4.0 stars compared to 3.2 stars in facilities with 25% or fewer foreign workers. (See Table 5.)

In multivariate analysis, after controlling for profit status and multi-ownership (chain) status, facility size, and location of the facility, facilities with greater than 50% foreign-born employees had a significantly higher resident survey quality rating than those with 50% or less foreign-born employees. In the model, facilities with the largest proportion of foreign-born workers had a coefficient of .786 ($p=0.026$), reflecting the three quarters of a rating point higher in relation to those facilities with only 25% or fewer foreign-born workers. (See Table 6.)

DISCUSSION

This study focused on the views of Washington State nursing facility administrators with regard to their foreign-born workforce. Administrators corroborated research reports of significant increases in foreign-born workers to relieve a nationwide long-term care workforce shortage (Hussein & Manthorpe, 2008, Lowell, 2012), suggesting that, as one administrator wrote, "it would be impossible to fill all vacancies with only U.S.-born applicants."

Nursing facility administrators juggle difficult and sometimes competing roles. They must answer to one or more boards of directors, the majority of which are focused on the profit performance of the facility. They are responsible for attracting and retaining a qualified and competenct workforce, increasingly foreign-born in nature. They must also attempt to attract and retain those residents whose cost of care is not higher than associated revenues. In response to these complex and often competing challenges, administrators must also seek to improve patient satisfaction ratings, as higher facility quality ratings contribute to profits, workforce satisfaction, and patient retention (Castle & Ferguson, 2010).

Several previous studies have examined the relationships between nursing facility characteristics and quality ratings, however these focused on profit or chain status, staff turnover rates (Comondore, et.al., 2009; Rattue, 2011; Anderson, Weeks, Hobbs, & Webb, 2003) and geographic location (rural vs. nonrural) (Lutfiyya, Gessert, & Lipsky, 2013). Castle et. al. reported that high caretaker turnover is one of the most important predictors of lower quality ratings (Castle & Engberg, 2007; Castle, Engberg & Men, 2007).

Nursing home workforce job satisfaction is related to quality ratings in part because job satisfaction affects the rate of turnover. Employee dissatisfaction has been linked to a lack of

promotional opportunities, poor compensation, and poor facility management (Castle, Degenholtz, & Rosen, 2006). Because nursing facilities all pay relatively similar wages, they tend not to compete on that factor within the industry. The low skill, low status and low wages of nursing home employement - as in industries like agriculuture- are likely related to its foreign workforce composition (Clemens & Pritchett, 2013).

We provide some of the first research to analyze nursing facility foreign-born workforce composition in relation to quality ratings. Our findings suggest that once profit, chain, size and geographical status of a nursing facility are accounted for, the residual effect on nursing facility quality ratings related to the foreign-born charcteristics of the workforce is largely positive. Although we did not measure turnover in this study, fewer than 5% of the administrators who responded to our survey reported turnover and absenteeism as problems among their foreign-born employees. Perhaps the mechanism by which higher foreign workforce predicts higher quality is an association with lower turnover.

Administrators in the study reported a cultural gap between foreign-born workers and elderly American-born patients or clients. Aging Americans in long-term care settings have been known to express bias against workers from abroad, and this clash can impede effectiveness of care (Office of Minority Health, 2001). While non-white, U.S.-born direct care workers sometimes experience racism on the job, foreign-born workers report even higher levels of hostility and discrimination (Allen & Cherry, 2006). Redfoot and Houser (2005) have also reported patient discrimination based on the race or foreign-born status of healthcare workers. Though client discrimination against nursing home workers has been studied, little has been done to determine whether there is a relationship between this and facility quality.

While it would be virtually impossible to train elderly or disabled patients and residents to be more accepting of their caregivers, administrators can provide training to their health workers about how to manage discrimination and hostility in their patients. Cultural competency trainings for both administrators and staff could be helpful (Lehning & Austin, 2010). Our survey identified tension between employees, communication issues related to cultural and religious differences and language barriers as potential opportunities for training interventions.

There are limitations to this study, including a relatively low response rate of facility administrators. Although the independently-verifiable characteristics of respondent nursing facilities were very similar to those of non-respondents, we cannot be certain, that administrator reports of percent of foreign-born employee proportions at non-responding facilities and the problems associated with those workers are the same as those in our sample. This study is limited to Washington State, and also did not take into account perspective of the foreign-born workers themselves.

Policy makers to date have focused on narrow approaches to attempt to resolve nursing home quality problems, for example by mandating minimum staffing levels or requiring the licensing of administrators (Castle & Engberg, 2007). Addressing the complex and multifaceted factors related to job satisfaction and reducing turnover, however, may be more important pathways to improved quality ratings. In Washington State, unions representing long-term care workers have advocated for wage increases (SEIU Healthcare 775, 2013) with little to no progress to date. Providing health coverage for direct care workers has been identified as another opportunity for improved working conditions (Miller, 2012).

The ACA requires nursing facilities to disclose standardized ownership, finance and other quality indicators on a website such as Nursing Home Compare. Depending on how these requirements are implemented, nursing homes soon may be reporting staff wages, benefits and staff turnover (Castle & Ferguson, 2010) as indicators of quality.

Our study elucidates the possibility that not only is the proportion of foreign-born employees in nursing facilities not a threat to quality ratings, but perhaps it is associated with improved performance. We recommend additional research on the relationship between foreign-born workforce factors and issues of turnover, job satisfaction, and quality ratings.

TABLES

Table 1: Washington State skilled nursing facility characteristics, comparing survey respondents and non-respondents

Nursing facility characteristics	Total N= 218 N (%)	Respondents N=73 N (%)	Non Respondents N= 145 N (%)	Index of Dissimilarity between Respondents and Non-Respondents
Urban	176 (80.7)	59 (80.8)	117 (80.7)	.0005
For profit	161 (74.2)	55 (75.3)	108 (75.0)	.0015
Chain or multi-ownership	130 (60.8)	42 (57.5)	88 (62.4)	.0245
Western Washington	154 (70.6)	57 (78.1)	97 (66.9)	.0560
Greater than 100 beds	87 (39.9)	32 (43.8)	56 (38.6)	.0260
Member WHCA	137 (62.8)	44 (60.3)	93 (64.1)	.0190
Average bed size	94 beds	98 beds	92 beds	.0320
Average overall quality rating	3.415	3.338	3.448	.0163
Average staffing quality rating	3.771	3.634	3.843	.0275
Average quality rating from survey of residents	3.537	3.451	3.589	.0194
Average health inspection rating	2.844	2.873	2.821	.0090

Source of data: Characteristics of respondents and non-respondents were collected from Washington Health Care Association and Hospital-Data.com. Quality ratings are from Nursing Home Compare. The formula calculating the Index of Dissimilarity was: (1/2)SUM | r/R – n/N | where r= positive respondents R= total respondents n= positive non-respondents N=total non-respondents and for characteristic averages (bed size and quality ratings) r=average of variable for respondents, R=average of total, n=average of variable for non-respondents, N= average of total.

Table 2: Washington State skilled nursing facility characteristics by proportion of foreign-born employees as reported by administrators.

	Proportion of foreign-born employees			
Nursing facility characteristics (N=73)	0-25% N (%)	26-50% N (%)	> 50% N (%)	P-Value

Member status of WHCA				
Member (44)	24 (54.5)	12 (27.3)	8 (18.2)	0.332
Non Member (29)	17 (58.6)	4 (13.8)	8 (27.6)	
Region of WA State				
Western (57)	28 (49.1)	13 (22.8)	16 (28.1)	0.032*
Eastern (16)	13 (81.3)	3 (18.8)	0 (0.0)	
Population size				
Urban (59)	28 (47.5)	15 (25.4)	16 (27.1)	0.008*
Rural (14)	13 (92.9)	1 (7.1)	0 (0.0)	
Facility size				
100 beds or fewer (41)	29 (70.7)	6 (14.6)	6 (14.6)	0.018*
Greater than 100 beds (32)	12 (37.5)	10 (31.3)	10 (31.3)	
Profit status				
For profit (55)	31 (56.4)	12 (21.8)	12 (21.8)	0.998
Not for profit or government (18)	10 (55.6)	4 (22.2)	4 (22.2)	
Chain or under multi-ownership				
Yes (42)	25 (59.5)	9 (21.4)	8 (19.1)	0.748
No (31)	16 (51.6)	7 (22.6)	8 (25.8)	
Facility Overall Ratings [a]				
Average or below (33)	17 (51.5)	8 (24.2)	8 (24.2)	0.865
Above average (38)	22 (57.9)	8 (21.1)	8 (21.1)	
Facility Staff Ratings				
Average or below (23)	14 (60.9)	2 (8.7)	7 (30.4)	0.132
Above average (48)	25 (52.1)	14 (29.2)	9 (18.8)	
Facility Quality Ratings				
Average or below (31)	21 (67.7)	6 (19.4)	4 (12.9)	0.125
Above average (40)	18 (45.0)	10 (25.0)	12 (30.0)	
Facility Health Ratings				
Average or below (42)	20 (47.6)	13 (31.0)	9 (21.4)	0.117
Above average (29)	19 (65.5)	3 (10.3)	7 (24.1)	
Training opportunities provided at facility				
Some [b] (34)	15 (44.1)	9 (26.5)	10 (29.4)	0.144
None (39)	26 (66.7)	7 (17.9)	6 (15.4)	
Difficulty finding US-born job applicants				
Yes (31)	15 (48.4)	7 (22.6)	9 (29.0)	0.399
No (42)	26 (61.9)	9 (21.4)	7 (16.7)	
Predominant region of foreign-born employees				
Africa (30)	8 (26.7)	10 (33.3)	12 (40.0)	0.000*
Asia and Pacific Islands (50)	27 (54.0)	12 (24.0)	11 (22.0)	0.800
Latin America (26)	19 (73.1)	5 (19.2)	2 (7.7)	0.052
Other [c] (8)	6 (75.0)	1 (12.5)	1 (12.5)	0.523

Source of data: Online survey of 218 skilled nursing facility administrators of Washington State, May-June 2012, with 73 respondents and a response rate of 33%.
Note: *significant at $p < .05$
[a] Facility quality ratings as reported by Nursing Home Compare, N= 71; Two facilities did not have ratings reported
[b] Training opportunity options provided on survey: English language training, Off-site skills development training, GRE classes, Tuition assistance for any classes of employee's choice, Other
[c] Other foreign-born regions reported included Canada and Eastern Europe

Table 3: Predominant region of origin of foreign-born employees (as reported by Washington State skilled nursing facility administrators), compared to other nursing home characteristics

Nursing facility characteristics (N=73)	**Dominant world region of origin**			
	Africa N= (29)	Latin America (26)	Asia and Pacific Island [a](50)	Other (8)
Population				
Urban	26 (89.7)	21 (80.8)	42 (84.0)	7 (87.5)
Rural	3 (10.3)	5 (19.2)	8 (16.0)	1 (12.5)
Region WA				
Western	27 (93.1) *	18 (69.2)	41 (82.0)	5 (62.5)
Eastern	2 (6.9)	8 (30.8)	9 (18.0)	3 (37.5)
Facility size				
100 or less	9 (31.0) *	20 (76.9) *	26 (52.0)	5 (62.5)
Greater than 100	20 (69.0)	6 (23.1)	24 (48.0)	3 (37.5)
Recruit job applicants by				
Referral	12 (41.4)	8 (30.8)	14 (28.0)	2 (25.0)
Advertisement	12 (41.4)	15 (57.7)	29 (58.0)	6 (75.0)
Other	5 (17.2)	3 (11.5)	7 (14.0)	0 (0.0)
Facility Overall Rating				
Average or below	19 (65.5) *	10 (38.5)	22 (45.8)	2 (25.0)
Above average	10 (34.5)	16 (61.5)	26 (54.2)	6 (75.0)
Facility Staff Ratings				
Average or below	11 (37.9)	7 (26.9)	16 (33.3)	1 (12.5)
Above average	18 (62.1)	19 (73.1)	32 (66.7)	7 (87.5)
Facility Quality Ratings				
Average or below	11 (37.9)	14 (53.8)	20 (41.7)	4 (50.0)
Above average	18 (62.1)	12 (46.2)	28 (58.3)	4 (50.0)
Facility Health Rating				
Average or below	21 (72.4)	15 (57.7)	27 (56.3)	4 (50.0)
Above average	8 (27.6)	11 (42.3)	21 (43.8)	4 (50.0)

Source of data: Online survey of 218 skilled nursing facility administrators of Washington State, May-June 2012, with 73 respondents and a response rate of 33%.
Note: Respondents could multiple world regions.
[a] Two skilled nursing facilities did not have quality ratings, both reported predominant Asian Pacific Island as origin of foreign-born employees. Percentage for this population is based on N=48
*significantly different at $p < .05$

Table 4: Problems associated with the facility's foreign-born workforce (as reported by Washington State skilled nursing facility administrators)

Problems reported in relation to facility's foreign workforce (N=73)	**Proportion of foreign-born employees**				
	Overall N(%)	0-25% N (%)	26-50% N (%)	> 50% N (%)	p-value[a]
Communication/logistical difficulties due to language differences	53 (72.6)	24 (45.3)	15 (28.3)	14 (26.4)	*0.009**
Patient/client discrimination against foreign staff	36 (49.3)	16 (44.4)	10 (27.8)	10 (27.8)	*0.138*
Communication/logistical difficulties due to cultural or religious differences	28 (38.4)	9 (32.1)	9 (32.1)	10 (35.7)	*0.005**
Racial or cultural tension between employees	17 (23.3)	7 (41.2)	3 (17.6)	7 (41.2)	*0.090*
Higher rates of illness or family issues affecting performance among foreign-born employees	6 (8.2)	1 (6.7)	2 (33.3)	3 (50.0)	*0.102*
Higher rates of absenteeism among foreign-born employees	3 (4.1)	1 (33.3)	1 (33.3)	1 (33.3)	*0.718*
Higher turnover among foreign-born employees	3 (4.1)	1 (33.3)	1 (33.3)	1 (33.3)	*0.718*

Source of data: Online survey of 218 skilled nursing facility administrators of Washington State, May-June 2012, with 73 respondents and a response rate of 33%.
[a] *p-values in table denote differences between those responding "yes" and "no" to facing the respective issue*
Note: *significant at $p < .05$

Table 5: Washington State skilled nursing facility quality ratings in relation to administrator reports of problems associated with foreign-born workers

	Ratings by Nursing Home Compare

Nursing facility characteristics (N=71)	Average Overall rating Avg	p-value	Average Staffing Ratio quality Avg.	p-value	Average Quality rating by resident Avg	p-value	Average Health Inspection rating Avg	p-value
Percent Foreign-Born								
≤ 25% foreign-born (39)	3.41		3.49		3.18		3.00	
> 25% foreign-born (32)	3.28	*0.675*	3.81	*0.144*	3.78	*0.017**	2.72	*0.355*
Percent Foreign-Born								
≤ 50% foreign-born (55)	3.29		3.67		3.29		2.89	
> 50% foreign-born (16)	3.50	*0.553*	3.50	*0.517*	4.00	*0.018**	2.81	*0.829*
Population								
Urban (58)	3.38		3.69		3.48		2.88	
Rural (13)	3.15	*0.554*	3.39	*0.288*	3.31	*0.596*	2.85	*0.933*
Facility size								
100 Beds or fewer (40)	3.26		3.68		3.71		2.71	
Greater than 100 beds (31)	3.40	*0.633*	3.60	*0.731*	3.25	*0.071*	3.00	*0.341*
Profit status								
For profit (55)								
Non-profit or government (16)	3.16 3.94	*0.026**	3.47 4.19	*0.006**	3.44 3.50	*0.835*	2.76 3.25	*0.177*
Chain or under multi-ownership								
Yes (42)	3.00		3.36		3.40		2.60	
No (29)	3.83	*0.005**	4.03	*0.002**	3.52	*0.665*	3.28	*0.025**
Difficulty finding US-born applicant								
Yes (31)	3.65		3.74		3.52		3.16	
No (40)	3.10	*0.064*	3.55	*0.392*	3.40	*0.652*	2.65	*0.091*
Predominant region of foreign-born								
Africa (29)	3.07		3.66		3.62		2.52	
Non-Africa (42)	3.52	*0.127*	3.62	*0.874*	3.33	*0.267*	3.12	*0.048**
Training Opportunities								
Some (34)	3.38		3.59		3.62		2.85	
None (37)	3.30	*0.773*	3.68	*0.695*	3.30	*0.208*	2.89	*0.898*
Communication/logistical difficulties due to language differences								
Yes (52)	3.39		3.62		3.48		2.89	
No (19)	3.21	*0.601*	3.68	*0.785*	3.37	*0.697*	2.84	*0.901*

Communication/logistical difficulties due to cultural or religious differences								
Yes (28)	3.29		3.61		3.71		2.71	
No (43)	3.37	*0.775*	3.65	*0.847*	3.28	*0.093*	2.98	*0.396*
Patient/client discrimination against foreign-born employees								
Yes (36)	3.14		3.75		3.33		2.56	
No (35)	3.54	*0.168*	3.51	*0.289*	3.57	*0.351*	3.20	*0.031**
Racial or cultural tension between employees								
Yes (17)	3.47		3.82		3.47		2.77	
No (54)	3.30	*0.614*	3.57	*0.338*	3.44	*0.931*	2.91	*0.688*

Source of data: Online survey of 218 skilled nursing facility administrators of Washington State, May-June 2012, with 73 respondents and a response rate of 33%.
Note: *significant at $p < .05$

Table 6: Linear regression models reporting predictors of quality ratings in Washington State skilled nursing facilities

Independent variables (Potential predictors)	**Ratings by Nursing Home Compare**							
	Overall quality rating of nursing home		Staffing adequacy rating of nursing home		Resident quality rating of nursing home		Health Inspection Rating of nursing home	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Percent foreign-born employees (compared to 25% and below)								
26-50%	.006	*0.987*	.569	*0.041**	.321	*0.340*	-.392	*0.330*
> 50%	.248	*0.529*	-.091	*0.747*	.786	*0.026**	-.179	*0.665*
Western Washington status (compared to Eastern Washington)	-.535	*0.179*	.011	*0.970*	-.102	*0.770*	-.389	*0.352*
Urban status (compared to rural)	.131	*0.752*	.044	*0.882*	-.206	*0.573*	.147	*0.736*
Facility size (compared to bed size 100 and fewer)	-.021	*0.950*	.001	*0.998*	.347	*0.231*	-.075	*0.826*
Profit status (compared to non-	-.353	*0.378*	-.397	*0.170*	-.015	*0.965*	-.084	*0.841*

profit)								
Chain or multi ownership status (compared to non-chain)	-.607	*0.080*	-.492	*0.049**	-.066	*0.827*	-.627	*0.085*

Data sources: Quality ratings were obtained from Nursing Home Compare. Proportion of nursing home employees and world region source of employees obtained from online survey of 218 Washington State skilled nursing facility administrators in May-June 2012, with 73 respondents (response rate of 33%). Location, size, profit and chain status were obtained from Washington Health Care Association, Nursing Home Compare, and nursing home websites. If the coefficient is **POSITIVE**, this reflects the proportion of a rating point higher for that status category in relation to the alternative, holding equal all other independent variables in the model (for example, in homes with more than 50% foreign-born workers, the resident quality rating is .786 points higher compared to homes with 25% and fewer foreign-born workers).
Note: *significant at $p < .05$

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