Organizational and Individual Conditions Associated With Depressive Symptoms Among Nursing Home Residents Over Time

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Purpose: To examine the effect of organizational culture and climate on depressive symptoms among nursing home residents. **Design and Methods:** Using a pooled cross-sectional design, this study examines a sample of 23 nursing homes, 1,114 employees, and 5,497 residents. Depressive symptoms were measured using the Minimum Data Set, Depression Rating Scale. Organizational culture and climate were measured using the Organizational Social Context Scale. Data were analyzed using hierarchical linear modeling. **Results:** Depressive symptoms were associated with 2 dimensions of organizational culture (proficiency and resistance), 3 dimensions of climate (stress, engagement, and functionality), geographic location, facility size, staffing ratios, and impairments in activities of daily living and cognition. **Implications:** Findings suggest that values and beliefs that guide behavior in an organization and employees' perceived impact of the work environment of their well-being have a significant impact on resident mental health.

Key Words: Organizational culture, Organizational climate, Depression, Long-term care facilities

Depression is a serious condition affecting the lives of many, including older adults. In the late 1990s, 7 million Americans aged 65 years and over suffered with depression (Steinman et al., 2007). Recent estimates suggest that about 11% of individuals aged 70 years and over in the United States are victims of depression regardless of their living situation (Steffens, Fisher, Langa, Potter, & Plassman, 2009), but the highest rates have been observed among institutionalized elders. In a multi-state study, almost 52% of U.S. nursing home residents were diagnosed with depression in 2007 (Gaboda, Lucas, Siegel, Kalay, & Crystal, 2011).

According to the *Diagnostic and Statistical Manual of Mental Disorders* (fourth edition, text revised), depression is characterized by a depressed mood, loss of interest in pleasurable activities, weight changes, sleep changes, agitation or psychomotor retardation, fatigue, feelings of worthlessness, concentration difficulties, and/or recurrent thoughts of death (American Psychiatric Association, 2000, 356). Depression has a significant impact on the health of older adults and has been associated with increased rates of cognitive and functional declines, malnutrition, suicidal ideations, hospitalizations, falls, mortality, and longer nursing home admissions (Cesari et al., 2002; Corna, Cairney, & Streiner, 2010; Iwasa et al., 2009; Koenig & Kuchibhatla, 1999; Kohler et al., 2010; Luber et al., 2001; Ulger et al., 2010; Yaffe, Edwards, Covinsky, Lui, & Eng, 2003). Given the growing prevalence of the disease, the detrimental effects of the disease on victims, and the increasing health care costs associated with the disease, depression has emerged as a major public health

issue for older adults and is expected to become the second leading cause of disease world-wide within the next decade (Chapman & Perry, 2008). As such, a growing body of research has emerged highlighting factors associated with the disease and recognition of the disease among older adults.

In nursing homes, where prevalence rates are the highest, a number of individual and organizational factors have been associated with resident depression. Higher rates have been identified among younger residents, female residents, non-Hispanic white residents, married residents, those with higher educations, those with some impairments in activities of daily living (ADL), and those with better cognitive function (Gaboda et al., 2011; Levin et al., 2007; Phillips, Rantz, & Petroski, 2011). Higher rates of depression have also been observed in for-profit facilities (Gruber-Baldini et al., 2005). Interviews with nursing home residents and staff indicate that organizational factors, including staff shortages and turnover, institutional regimes, and regulations, may also contribute to the manifestation of depression among residents (Choi, Ranson, & Wyllie, 2008; Choi, Wyllie, & Ransom, 2009).

In a consensus statement on depression in U.S. nursing homes, the American Geriatrics Society and the American Association for Geriatric Psychiatry (2003) reported that, "the nursing home culture (the way people live and work together and the type of environment they create) must foster good mental health care (p. 9)." Despite the recognized importance of the organizational culture in managing depression, no research to date has empirically examined the effect of organizational culture and climate in nursing homes on the presence of depressive symptoms. We address this gap through an examination of individual and organizational factors (including organizational culture and climate) on depressive symptoms among a sample of nursing home residents over time.

Organizational Culture

Culture is a widely discussed topic in the nursing home industry and is generally discussed in terms of culture change. Despite the common use of the term, rarely is it defined and understood. Researchers have failed to arrive at a commonly accepted definition of culture within nursing homes. Some do not even define the concept before launching into discussions of how to change this undefined concept (Boyd, 2003; Holmes & Ramirez, 2003; Rader & Semradek, 2003). Some have turned to the dictionary for a definition of culture (Fahey, 2003), whereas others talk about culture change in terms of competency and diversity issues that go into shaping an individual's identity (Levine, 2003; Martin & Bonder, 2003). Others have defined culture from an anthropological perspective (Barkan, 2003; Redfoot, 2003), whereas some have turned to organizational literature for a conceptualization of culture in nursing homes (Gibson & Barsade, 2003; Hegeman, 2003).

Definitions of culture in nursing homes from an organizational perspective involve shared values, beliefs, and expectations of employees that determine how job responsibilities are accomplished (Gibson & Barsade, 2003; Hegeman, 2003). These shared beliefs, expectations, and values can be seen in symbols used by the organization to communicate approval, rituals used by the organization to measure success, and heroes, real or imagined, that personify a good employee (Hofstede, Neuijen, Ohayy, & Sanders, 1990; Wilkins, 1984). According to a study on culture change conducted by Gruss, McCann, Edelman, and Farran (2004), researchers found that on nursing home units where staff were empowered by the culture with education, resources, autonomy, decision-making responsibilities, and greater access to resident information, staff focused on resident needs rather than on their own needs. In cultures where employees were empowered, employee stressors revolved around resident issues such as falls, accidents, death and dying issues, and behavior problems whereas in nonempowered cultures, stressors revolved around poor wages, heavy workloads, staffing issues, and conflict with coworkers. Because culture determines how job responsibilities are accomplished, it stands to reason that the organizational culture of a facility could correlate with the quality of care and quality of life found in a given facility.

Organizational Climate

Organizational climate refers to employees' shared perceptions of the work environment on their personal welfare (James & James, 1989). Climate affects the way an employee functions in the work environment (Brown & Leigh, 1996) and has been shown to mediate the relationship between culture and work attitudes and behaviors in mental health programs (Aarons & Sawitzky, 2006). Because organizational climate affects the way employees feel about their jobs, in more positive climates healthier relationships may exist between staff and

residents, which could in turn influence depression among residents.

Sheridan, White, and Fairchild (1992) conducted a study of organizational climate in 25 long-term care facilities in Texas and Florida. In homes that failed to pass annual state inspections, climates were found to be unsupportive and disdainful of staff. Poor climates also created a cycle of unsatisfied employees, decreased quality of care (Tellis-Nayak & Tellis-Nayak, 1989), and fostered ". . . cold, and impersonal feelings and interactions among care providers and the elderly residents (Sheridan et al., 1992, 340)." Such interactions could have detrimental effects on resident mental health.

Nursing home culture and climate may be the key to understanding what makes one facility more successful at achieving positive resident outcomes whereas others provide substandard care and services. A greater understanding of culture and climate in the nursing home environment will further our knowledge of their combined impact on resident mental health outcomes.

Hypotheses

The purpose of this research is to examine the effect of organizational culture and climate on depressive symptoms among a sample of nursing home residents. Individual and organizational characteristics will be considered using hierarchical linear modeling (HLM) in order to examine the nested effects found in long-term residential care environments. We hypothesize that both individual and organizational characteristics will be associated with depressive symptoms and that these relationships will change over time. More negative dimensions of culture and climate are also expected to be associated with increased levels of depressive symptoms in nursing home residents over time.

Design and Methods

Sample

This study employed a pooled cross-sectional design to study a convenience sample of 23 nursing homes from a single state in the southeastern United States. Participating facilities self-selected into the study by agreeing to provide organizational data and access to facility employees. All participating facilities were dually certified to receive both Medicare and Medicaid services. The average bed size of participating facilities fell within 1 SD of the mean of all dually certified facilities in the selected state. All nursing home employees at participating facilities were invited to anonymously participate in the study by completing the organizational social context (OSC) at onsite staff meetings facilitated by the primary investigator. Multiple meetings were held at each facility to encourage participation from employees on various shifts. As an incentive, each participating employee was entered into a drawing for gift cards. Over a thousand employees ($n = 1,114$) provided data that were examined in this study. On average about 48 employees participated at each facility. The majority of respondents (74%) identified themselves as direct care workers, 17% were supervisors or department heads, and 9% refused to disclose their position in the organization. All residents admitted to participating facilities between January 2007 and May 2008 were considered in this study.

Measures and Data Collection

Resident-Level Variables.—Resident-level data came from the Minimum Data Set (MDS) and were provided by the Centers for Medicare and Medicaid Services via the Research Data Assistance Center after approval of the study's protocol. The MDS is a comprehensive multidimensional standardized assessment completed on each individual residing in a nursing home certified to receive Medicare and/or Medicaid funding in the United States, 42 CFR 483.20 (b)(1)(i). The MDS is completed at least quarterly by an interdisciplinary team of facility staff (nurses, social workers, recreational therapists, occupational therapists, physical therapists, dieticians, etc.). Data were extracted from initial, annual, and quarterly assessments of all residents admitted between January 2007 and May 2008. Initial assessments provided information regarding resident conditions on admission, and the remaining assessments provided repeated measures of resident conditions and details regarding changes in conditions over time. The number of assessments available for each resident and the time between assessments varied. HLM was selected for analysis to account for these variations. Three subscales of the MDS were used to measure resident conditions: the Depression Rating Scale (DRS), the Cognitive Performance Scale (CPS), and the Activities of Daily Living—Long Form (ADL-L).

Depression Rating Scale. The DRS is a seven-item scale rating the presence of depressive symptoms in the past 30 days. Possible scores range from

0 to 14 with higher scores indicating more depressive symptoms. Consistent with accepted research practices, to maximize sensitivity a cut point of 3 was used (Burrows, Morris, Simon, Hirdes, & Phillips, 2000). DRS items were significantly correlated with the Hamilton DRS and the Cornell Scale for Depression (Burrows et al., 2000), but when compared with the Geriatric Depression Scale, the DRS systematically underestimates depression (Heiser, 2004; Meeks, 2004; Simmons et al., 2004).

Cognitive Performance Scale. The CPS is a rating of resident cognition on a scale of 0–6 with higher numbers indicating more severe cognitive impairments and "0" indicating no cognitive impairments (Morris et al., 1994). Compared with the Mini Mental Status Exam and Test for Severe Impairment, the CPS has been found to have high validity levels (Morris et al., 1994).

Activities of daily living—long form. The ADL-L is a seven-item scale evaluating bed mobility, transferring, locomotion, dressing, eating, toilet use, and personal hygiene. Scores range from 0 to 28 with higher scores indicating greater levels of impairment. The ADL-L has been found to be a valid and reliable measure of physical functioning (Lawton et al., 1998; Morris, Fries, & Morris, 1999; Phillips & Morris, 1997) with weaker criterion validity among residents with dementia (Snowden et al., 1999).

Additional resident variables. Individual items on the MDS were also considered. Days since admission were calculated using assessment dates and date of admission. Date of birth was used to calculate resident age at the time of their initial assessment. Gender, race, and marital status were also extracted from the MDS. In terms of gender, "0" indicated men and "1" indicated women. Nonwhites were coded "0" and whites coded as "1." Married residents were coded "1" and those who were not currently married were coded "0."

Nursing Home Variables.—Organizational culture and climate. Organizational culture and climate were measured using the 105-item OSC Scale (Glisson, Landsverk, et al., 2008). The OSC defines organizational culture as "the expectations that govern the way things are done in an organization (Glisson, Landsverk, et al., 2008, 102)." The OSC defines organizational climate as the shared perceptions of the "psychological impact of the work environment on [the employee's] own well-being (Glisson, Landsverk, et al., 2008, 100)."

Three domains of organizational culture (rigidity, proficiency, and resistance) and three dimensions of organizational climate (stress, engagement, and functionality) are identified by the OSC (Glisson, Landsverk, et al., 2008). Some cultures and climates have greater measures of some dimensions and less of others, but all organizational cultures and climates will contain some measure of each dimension. Increased values indicate greater levels of each dimension.

Highly centralized work environments, where employees must seek permission from a supervisor before acting independently, characterize cultures with higher levels of rigidity. Rigid cultures are also characterized by high degrees of formalization requiring employees to follow strict policies and procedures. Cultures with high levels of proficiency are characterized by employees who are responsive to client needs and competent in their actions. Highly resistant cultures are characterized by employees who are apathetic to change efforts or act in a manner to suppress change (Glisson, Lansdverk, et al., 2008).

Engaged climates are found in work environments where employees perceive a sense of personalization. In these environments, employees connect with clients, view them as unique individuals, and feel that their job is worthwhile. When employees perceive there are opportunities for growth and advancement, role clarity, and cooperation, the climate is said to be functional. Employee perceptions of emotional exhaustion, role conflict, and role overload are found in stressful climates (Glisson, Landsverk, et al., 2008).

Other Nursing Home Variables.—Geographic classification, facility size, chain, and staffing data were also considered. Urban areas, as defined by the U.S. Census Bureau (2002), are areas occupied by at least 50,000 individuals with at least 1,000 people per square mile. Urban areas were coded as "1," whereas other areas were coded as "0." Facility size was a continuous variable indicating the number of residents a facility could serve at maximum capacity. A dichotomous variable captured whether or not a nursing home was part of a larger chain of facilities ("0," independent; "1," part of a chain). Staffing figures were continuous variables indicating the number of residents assigned to one nursing staff member based on facility report.

Analysis

Because individual residents are clustered within the organizational context of the nursing home and because of repeated measures used to ascertain resident outcomes over time, HLM is an appropriate analytic method to use in this study (Raudenbush & Bryk, 2002). The threat of autocorrelation typically associated with regression models over time is not present in HLM (Raudenbush & Bryk, 2002). HLM was instructed to delete cases with missing data in the analysis process. To examine hypotheses, a three-level model was developed. At level 1, the temporal variance of depressive symptoms within the context of repeated measures was examined along with random error. Temporal variance was defined as days since admission. At level 2, the relationship between individual level predictors (age, gender, marital status, ADL-L, and CPS), depressive symptoms and random error were examined with an intercept model and a slope model. The intercept model provided analysis regarding the relationship between depressive symptoms and individual predictors upon resident admission to the facility based on the resident's initial MDS assessment. The slope model demonstrated the relationship between depressive symptoms and individual predictors over time based on subsequent assessments. At level 3, organizational-level variables (rigidity, proficiency, resistance, stress, engagement, functionality, urban, chain, bed capacity, and staffing) were added and evaluated with an intercept model and a slope model.

Results

Descriptive Statistics

Facility-Level Data.—Twenty-three nursing homes participated in this study. Sixteen facilities were located in urban areas, and 17 facilities were part of a larger chain. On average participating nursing homes could accommodate 107 residents (*SD* = 20.93). Average nursing staff-to-resident ratios was 1:13.54 (*SD* = 2.26). In terms of organizational culture, rigidity scores ranged from 40.15 to 46.22 with an average score of 42.71. Proficiency scores ranged from 52.66 to 64.55 with an average score of 59.23 and resistance scores ranged from 30.76 to 37.78 with an average score of 34.14. In terms of organizational climate, stress scores ranged from 47.48 to 65.87 with an average score of 56.26, engagement scores ranged from 39.15 to 47.27 with an average score of 42.88, whereas

functionality scores ranged from 42.18 to 55.04 with an average score of 49.92.

Resident-Level Data.—Resident level data were extracted from 17,300 complete MDS assessments with no missing data of 5,497 residents. A little over two-thirds of the resident sample were women (*n* = 3,683). The majority of residents were white (*n* = 4,782) and only 1,594 were married. Resident average age was 79 years (*SD* = 10.89).

Almost half of all assessments indicated that the cognitive functioning of the resident was intact (*n* = 6,600) or borderline intact (*n* = 1,957), whereas about 16% (*n* = 2,754) indicated mild cognitive impairments, 27% indicated moderate (*n* = 3,891) to moderately severe impairment (*n* = 728), and 8% indicated severe (*n* = 875) or very severe impairment (*n* = 479). The average ADL-L score found in resident assessments was 13.5 (SD = 6.86), indicating moderate levels of impairments in ADL. The mean DRS score was 0.44. The majority of resident assessments indicated no symptoms of depression (*n* = 12,607). Thirteen percent of resident assessments noted the presence of one depressive symptom (*n* = 2,232), about 8% (*n* = 1,370) noted the presence of two of depressive symptoms, and only 6% (*n* = 1,092) noted three or more depressive symptoms. On average, assessments were completed 65 days after admission with a range of 1–516 days.

HLM Analysis

As noted in Table 1, the unconditional model indicated that the average number of depressive systems exhibited by residents in a typical sampled facility was relatively low at .438, but statistically significant (*p* < .001). The greatest amount of variance was noted across residents at Level 2 (60%), followed by time at Level 1 (37%) and facilities at Level 3 (12%). The variance at all three levels was statistically significant with *p* values less than .001. As shown in Table 2, the proportion of variance explained with the addition of days since admission at Level 1 was less than 1% and the proportion of variance explained with the addition of individual predictors at Level 2 explained about 4% of the variance in depressive symptoms. The addition of organizational level predictors at Level 3 explained 32% of the variance in depressive symptoms.

The full three-level model revealed important relationships between individual and organizational

Table 1. Distribution of Variance in Depressive Symptoms (Unconditional Model)

Fixed effect	Coefficient	SE	t-Ratio	p Value
Depressive symptoms	0.438	0.062	7.052	<.001
Random effect	Variance component	Degrees of freedom	χ^2	p Value
Time (Level 1)	0.442			
Residents (Level 2)	0.270	5,474	32287.58	<.001
Facilities (Level 3)	0.086	22	984.94	<.001
Variance decomposition (percentage by level)				
Level 1	36.6			
Level 2	59.9			
Level 3	11.6			

covariates and depressive symptoms. The intercept model (Table 3) showed that upon admission, one dimension of culture and several individual predictors were noteworthy. Proficiency ($p = .050$), resident age ($p < .001$), gender ($p < .001$), race ($p < .001$), ADL impairments ($p = .008$), and cognitive impairments ($p < .001$) were statistically significant. Younger residents, women, white residents, and residents with greater impairments in ADL and cognition were admitted with more depressive symptoms. Facilities with cultures that were high in proficiency were also more likely to admit residents with more depressive symptoms.

The slopes model (Table 4) indicated that over time, two dimensions of culture (proficiency, $p < .001$; and resistance, $p = .014$), three dimensions of climate (stress, $p = .016$; engagement, $p < .001$; and functionality, $p = .039$), geographic location ($p = .005$), facility size ($p < .001$), staffing ($p = .022$), ADL impairments ($p = .002$), and cognitive impairments ($p = .017$) were associated with an increase in depressive symptoms. More specifically, facility cultures with lower levels of proficiency and higher levels of resistance and facility climates with lower levels of stress and higher levels of functionality

and engagement were associated with more depressive symptoms. Facilities located in nonurban areas, larger facilities, and facilities with lower staffing ratios were also associated with more depressive symptoms. Over time, residents with fewer impairments in ADL and cognition experienced greater numbers of depressive symptoms.

Discussion

The examination of depressive symptoms among nursing home residents with the MDS is controversial because of its tendency to underestimate symptoms, particularly in facilities reporting no or very low levels of depressive symptoms among their residents (Simmons et al., 2004). Given the low levels of depressive symptoms reported in this study, caution must be taken when interpreting

Table 2. Distribution of Variance in Depressive Symptoms (Full Three-Level Model)

Random effect	Variance component	Degrees of freedom	χ^2	p-Value
Time (Level 1)	0269			
Residents (Level 2)	0424	5,468	31519.50	<.001
Facilities (Level 3)	0058	12	71402	<.001
Proportion of variance explained				
Level 1	055%			
Level 2	402%			
Level 3	3226%			

Table 3. The Relationship Between Depression and Predictors Upon Admission

	Coefficient	SE	t-Ratio	p-Value
Constant	0177	0.122	1450	.173
Rigidity	−0.041	0.044	−0.918	.377
Proficiency	0008	0.085	2174	.050
Resistance	−0.032	0.043	−0.738	.475
Stress	0024	0.021	1128	.282
Engagement	−0.141	0.100	−1.404	.186
Functionality	−0.054	0.050	−1.090	.298
Urban	0156	0.125	1250	.236
Chain	−0.037	0.149	−0.247	.809
Beds	−0.002	0.003	−0.586	.568
Staffing	0021	0.033	0637	.536
Age	−0.006	0.001	−5.905	<.001
Gender	0113	0.024	4821	<.001
White	0177	0.034	5173	<.001
Married	−0.001	0.025	−0.036	.972
ADL impairments	0005	0.002	2663	.008
Cognitive impairments	0072	0.007	9737	<.001

Note. ADL = activities of daily living.

Table 4. The Relationship Between Depression and Predictors Over Time

	Coefficient	SE	t-Ratio	p-Value
Constant	0001	<.001	2132	.033
Rigidity	<.001	<.001	–1.941	.052
Proficiency	<.001	<.001	–4.269	<.001
Resistance	<.001	<.001	2450	.014
Stress	<.001	<.001	–2.403	.016
Engagement	<.001	<.001	3268	<.001
Functionality	<.001	<.001	2062	.039
Urban	<.001	<.001	–2.863	.005
Chain	<.001	<.001	–0.862	.389
Facility size	<.001	<.001	3962	<.001
Staffing	<.001	<.001	–2.283	.022
Age	<.001	<.001	0410	.682
Gender	<.001	<.001	–0.823	.411
Race	<.001	<.001	–1.095	.274
Married	<.001	<.001	–0.524	.600
ADL impairments	<.001	<.001	–3.158	.002
Cognitive impairments	<.001	<.001	–2.382	.017

Note. ADL = activities of daily living.

findings. It has been suggested that the absence of depressive symptoms should not be regarded as an indicator of better quality of care or quality of life (Simmons et al., 2004) but rather an indication of the nursing home staff's ability to recognize depressive symptoms among residents (Schnelle, Wood, Schnelle, & Simmons, 2001). The discussion that follows takes this limitation into consideration. Despite its flaws, the MDS is the most comprehensive database of resident characteristics available to researchers, and this study adds to our understanding of the impact that organizational and individual conditions have on depressive symptoms and the recognition of depressive symptoms among nursing home residents.

Factor analysis of the OSC among nursing home employees considered in this study revealed good internal consistency with alpha measures between .70 and .92 (Cassie, 2009). Prior research conducted among therapists with at least a bachelor's level education suggests that better outcomes in mental health clinics characterized by cultures with high levels of proficiency and low levels rigidity and resistance and climates with high levels of functionality and engagement and low levels of stress (Glisson, Schoenwald, et al., 2008). This study, conducted among employees with less education, caring for a different clientele, suggest some similarities and differences from previous research on organizational culture and climate that are discussed subsequently.

Our findings suggest that proficient cultures and a variety of individual level variables are linked with depressive symptoms on admission. Proficient cultures, characterized by work environments where staff is expected to be competent and responsive to resident needs, are more likely to admit residents exhibiting depressive symptoms. Younger residents, residents with greater impairments in ADL and cognitive functioning, white residents, and female residents are also more likely to enter the nursing home with signs of depression. Over time, the relationships between depression and proficiency and ADL impairments and cognition impairments change direction. This suggests that highly proficient cultures are more likely to admit residents with more depressive symptoms. Over time, residents in highly proficient cultures experience a decrease in depressive symptoms, whereas those in less proficient cultures experience an increase in depressive symptoms. We can speculate that residents in environments where staff do not respond to their needs in a timely and personalized manner may be more likely to feel like a burden to caregivers or valueless within the nursing home environment thereby increasing feelings depression. With regard to ADL and cognitive impairments findings suggest that residents with greater levels of impairments are more likely to enter nursing homes with depression, but over time residents with less impairments in ADL and cognition are more likely to experience depression. It may be that residents with a greater awareness of their surroundings and a greater ability to manage their own ADL are more likely to experience feelings of hopelessness and dissatisfaction with their life circumstances and living environments.

One additional dimension of organizational culture was linked to the presence and recognition of depressive symptoms over time. In cultures with higher levels of resistance, characterized by environments where employees are expected to be apathetic or resistant to change, we find higher rates of depressive symptoms. Resistant cultures may be more prone to provide assembly-line care that treats all residents in a similar manner without consideration of the need to alter care based on individual needs. Because resistant cultures are unlikely to change care patterns, residents may be treated as depersonalized objects resulting in greater feelings of depression or worthlessness.

All dimensions of climate were associated with depression in facilities over time. In climates with

higher levels of engagement, characterized by personalized relationships between residents and staff, we find more depressive symptoms among residents. It seems counterintuitive to think that in climates where employees and residents are more likely to develop relationships that we would find higher levels of depression, but this may point to the idea that higher scores on the DRS can be more indicative of the staff's recognition of depressive symptoms. In highly engaged climates, employees may be more likely to develop relationships with residents, to view residents as individuals rather than objects, and as a result, employees in these climates may be more likely to recognize depressive symptoms. A similar explanation may also be applied to findings that suggest in more functional climates, characterized by teamwork and a clear understanding of one's role, we find higher levels of depression. Again, it may be that in more functional climates, employees have a greater awareness of resident mental health and a greater recognition of depressive symptoms. Further research is needed before we can fully understand the dynamic at play in these climates.

It is also interesting to note that in more stressful climates, characterized by higher levels of emotional exhaustion and role overload, we find less depression. This again seems counterintuitive, but it may be that in cultures that are more responsive to residents and more open to change, as well as in climates that are more personal and functional, staff internalizes greater levels of stress that has an influence on their personal well-being but not on the mental health of the residents. It is important to note that these explanations are speculative and must be submitted to the scrutiny of additional research before we can draw definitive conclusions.

Three other organizational factors were associated with depressive symptoms over time: geographic classification, facility size, and staffing. Nonurban facilities, larger facilities, and facilities with better staffing ratios were associated with higher levels of depression. The fact that better staffing ratios in which one staff member is assigned to care for fewer numbers of residents is associated with greater depressive symptoms may again indicate that when staff have fewer residents to care for they may be able to develop stronger relationships with residents and a greater recognition of depressive symptoms.

Although this research marks a starting point in our understanding of the effect of organizational culture and climate on the mental health of residents,

there are limitations. This research is based on the organizational context of only 23 nursing facilities in a single state and cannot be generalized beyond the current sample. Participating facilities and employees self-selected into the survey and may have different organizational practices than those that did not elect to participate. The use of the DRS as the sole measure of depressive symptoms provided researchers with the opportunity to assess the mental health of a large number of residents, but the MDS is a secondary data set completed by facility staff and the measure has been met with criticism. Even though the DRS underestimates the presence of depressive symptoms, it provided a sufficient measure for this exploratory research. Future research validating the presence of depressive symptoms with an independent measure will enhance our understanding. A measure that differentiates between the actual presence of depressive symptoms and staff recognition of depressive symptoms can also further our knowledge. The relationship between other variables and depression also warrant consideration in future research. Whereas this research considered the relationship between depression and ADLs in various cultures and climates, the relationship between depression and specific medical comorbidities merits examination. Residents with more complex medical conditions may experience depression differently than those in better health. Consideration of depression among short-stay rehabilitation residents and long-term residents should also be considered in future research to better inform our understanding of how different residents experience depression in long-term care facilities and how variation in the organizational culture and climate of facilities affects depression among these residents differently.

The implications of this research are noteworthy. Findings provide researchers, policy makers, and practitioners with a definition and understanding of organizational culture and climate that is often lacking in discussions of culture change. Findings suggest that the values and beliefs that guide behavior in an organization and employees' perceived impact of the work environment on their well-being have a significant influence on the mental health of residents. More research is needed to fully understand the link between culture, climate, and resident outcomes. Policy makers can play a role in improving the culture and climate of nursing homes by encouraging facility providers to enhance their education of the organizational social context of facilities and by allocating funds

for additional research on this important topic. Administrators should assess their organization's culture and climate and look for ways to create more positive work environments for employees that in turn result in more positive mental health outcomes for residents. Efforts to decrease depression among nursing home residents without consideration of the well-being of employees are not likely to generate significant, lasting changes.

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