

What Does the Evidence Really Say About Culture Change in Nursing Homes?

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Purpose of the Study: Although nursing home culture change efforts are becoming more widespread, there have been few efforts to systematically compile the evidence related to the efficacy of culture change. This study uses an analytic framework to evaluate the existing evidence for the impact of culture change on nursing home quality. We focus on the nature and scope of culture change interventions, measurement of culture change and adherence to interventions, measurement of culture change outcomes, and the relationship between culture change and its outcomes. **Design and Methods:** We conducted a comprehensive review of peer-reviewed and gray literature published between 2005 and 2012 to identify intervention evaluations that addressed at least one culture change domain. Of 4,982 identified publications, 625 underwent full review; 27 peer-reviewed and 9 gray literature studies met inclusion criteria. **Results:** Studies varied widely in scope and outcomes. Most addressed more than one culture change domain; resident direction, home environment, and close relationships were most common. Few studies measured culture change implementation, but most used validated tools to measure outcomes. Although few studies reported negative outcomes, there was little consistent evidence of positive effects. **Implications:** Nursing home culture change remains an evolving field. Although culture change has clear face validity, the current evidence

does not give providers sufficient information for selecting interventions based on the expectation of improving outcomes. Rigorous research on implementation and outcomes of culture change is needed to determine the specific impact of culture change on quality and to provide guidance to providers and policy makers.

Key Words: Quality, Nursing homes, Culture change, Long-term care, Resident preferences

Each year, more than 3 million people spend time in one of the nation's almost 16,000 nursing homes. Research on nursing home quality efforts has addressed best practices in several aspects of nursing home care, including pain assessment and management (Cadogan et al., 2008; Swafford, Miller, Tsai, Herr, & Ersek, 2009), pressure ulcer prevention and management (Bates-Jensen, 2006; Saliba et al., 2003), improvements in restorative care (Resnick et al., 2009), and assistance with activities of daily living and behavior management (Zimmerman et al., 2005). Many of these efforts, however, have focused on individual clinical components, rather than on the holistic quality of life and well-being of residents (Sangl, Saliba, Gifford, & Hittle, 2005). Moreover, despite these and other efforts to improve nursing home quality, quality of

care and quality of life remain less than optimal for many nursing home residents. Some stakeholders contend that fixing these significant quality gaps requires a restructuring of how health care organizations view and deliver care.

In response, stakeholders are attempting to shift the focus of quality improvement efforts away from those focusing solely on clinical care for single conditions to include those that focus on overall quality of life and well-being (Housen et al., 2009; Saliba & Schnelle, 2002). These and related efforts have been broadly described as nursing home culture change. Embracing the central role of organizational culture in determining care activities (Mueller, 2002), the nursing home culture change movement aims to improve resident quality of life and quality of care by relinquishing the traditional medical model of care and emphasizing the deinstitutionalization of nursing home culture (Zimmerman & Cohen, 2010). Indeed, national organizations and efforts have focused attention on promoting nursing home culture change; several models of culture change have been implemented in nursing homes (Coleman et al., 2002; Stone et al., 2002; Zimmerman & Cohen, 2010).

Despite the growing interest in culture change, an empirical base that can fully inform and guide the implementation of culture change initiatives in nursing homes has yet to be generated (Zimmerman, Shier, & Saliba, 2014). Two prior literature reviews (Colorado Foundation for Medical Care, 2006; Hill, Kolanowski, Milone-Nuzzo, & Yevchak, 2011) were unable to conclude that culture change was associated with improved outcomes and describe the challenges related to measuring and studying culture change including lack of longitudinal data and baseline assessment, lack of information on the performance of many culture change measurement tools, failure to consider the impact on change on residents with dementia, and difficulty determining outcomes over time. However, it is possible that these reviews did not find an association because they addressed a limited set of resident and staff outcomes, failed to explore the relationship between the extent of culture change implementation and outcomes, and were limited to peer-reviewed publications through May 2010.

A recent Technical Expert Group convened by the Assistant Secretary for Planning and Evaluation (ASPE) of the Department of Health and Human Services recommended that research focus on rigorously measuring and evaluating the

evidence base for the processes and outcomes of culture change interventions in order to examine the association between culture change and various resident, family, staff, and organizational outcomes. The need to fill this evidence gap is more than academic. Nursing homes considering change need evidence-based guidance in how to invest scarce resources and operationalize culture change; residents and families need guidance for selection decisions; and fiduciaries need evidence-based metrics for recognizing and promoting best practices through policy, public reporting, and reimbursement.

This article presents the results of a literature review intended to examine the existing evidence and to identify gaps in the knowledge base regarding nursing home culture change with the goal of informing nursing home planning, future nursing home demonstration programs, and studies of culture change and policy. Specifically, this review uses an analytic framework to describe the existing evidence base about culture change in nursing homes by answering four main questions: (a) What are the nature and scope of nursing home culture change interventions that have been studied? (b) How has culture change and the extent of adherence to interventions been measured? (c) How have culture change outcomes been measured? and (d) What is the relationship between nursing home culture change interventions and outcomes?

Analytic Framework

To answer these questions, we began with an analytic framework (Figure 1). This describes how nursing homes seek to become resident-centered homes by changing physical environments, values, norms, and organizational structure. The framework assumes the ultimate goal of improved nursing home quality to be optimizing resident quality of life. Nursing home quality, then, is a multidimensional construct that includes residential care activities, environment, and disease management (Saliba and Schnelle, 2002).

Some have viewed efforts to optimize quality of life as being at odds with efforts to optimize disease management. However, efforts on both fronts can be aligned if all care is based on the preferences of the resident and clear resident-centered objectives. For example, early detection of decline or detection and management of pain requires sensitive front-line staff members who understand and attend to preferences of residents and patterns of

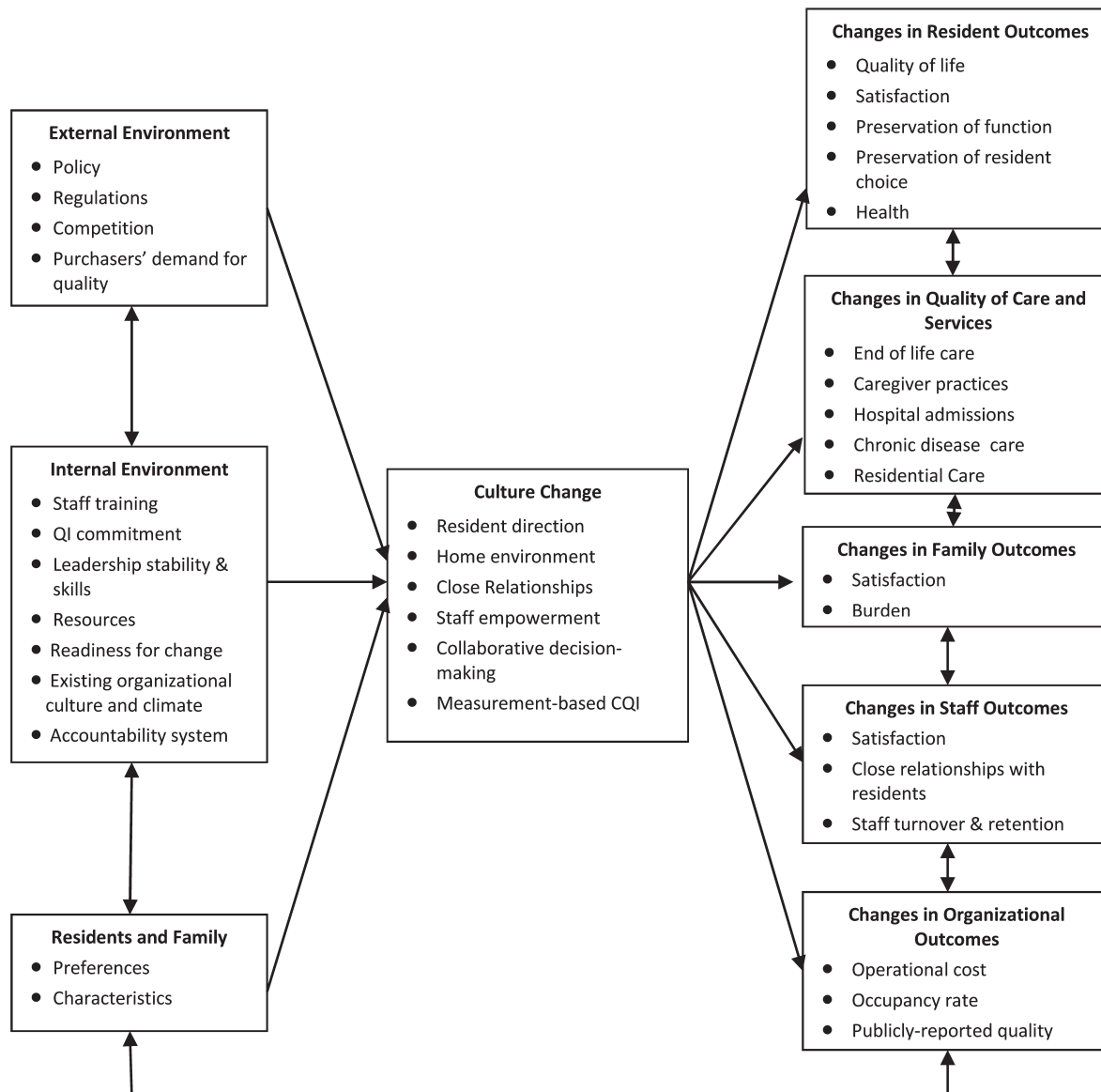


Figure 1. Analytic framework for evaluating culture change effect in nursing homes.

behavior. Staff members who focus on meeting resident needs do not necessarily stop to distinguish whether that need falls in the domain of quality of medical care or quality of residential care. Thus, the potential for tension comes not from culture change but from an environment where culture change has not extended throughout the care paradigm, and medical orders or applied quality metrics are not consistent with the resident's preferences and values.

Our analytic framework for reviewing culture change conceptualizes how existing external factors (such as policies), internal environmental factors (such as staff training), and resident and family factors (such as preferences) influence and inform culture change efforts. It also presents the six domains that nursing home culture change efforts

are typically classified into those that characterize a wide range of activities that seek to transform facilities into resident-centered homes by changing nursing home physical environments, values, norms, and organizational culture. These six culture change domains include (Koren, 2010) the following: (a) Resident direction: care and resident-related activities are selected and determined by residents; (b) Home environment: environment is designed as a residence, rather than an institution; (c) Close relationships: relationships among residents, family members, staff, and the community are close-knit; (d) Staff empowerment: work is organized to support and enable all staff to respond to residents' needs and desires; (e) Collaborative decision making: management allows for shared and decentralized decision making; and (f) Measurement-based

continuous quality improvement (CQI) processes: systematic processes are comprehensive, measurement based, and used to monitor, support, and refine culture change activities. The framework also considers that culture change has the potential ability to change resident outcomes (health and psychosocial), quality of medical care and services, and outcomes for family, staff, and organizations. In addition, the interrelationship of these areas is recognized, as, for example, policies can affect staff training and improvements in quality of care can increase family satisfaction.

Design and Methods

To describe the evidence base on culture change in nursing homes, we analyzed both peer-reviewed and gray literature published between January 2005 and July 2012. Our search strategy included searching peer-reviewed publications indexed in PubMed, CINAHL, PsycInfo, Web of Science, and Evidence Based Medicine Reviews and gray literature indexed in Web of Science Conference Proceedings, the New York Academy of Medicine Grey Literature Report, and the National Library of Medicine catalog. Keywords included terms and synonyms for nursing homes, community living centers, culture and organization change, quality of life, resident-directed care, and specific models of culture change in nursing homes, such as Wellspring, The Green House model®, and the Eden Alternative.

Two reviewers screened titles and abstracts from the initial search and selected studies potentially meeting inclusion criteria, specified as those in which (a) the setting was nursing homes providing care to adults in United States, Canada, or United Kingdom; (b) the intervention focused on more than quality improvement, management interventions, health information technology, infection control, or medication prescribing (i.e., it had to additional reference resident direction, home environment, close relationships, staff empowerment, or collaborative decision making); and if an outcome study, it (c) employed a research design with a comparator group (randomized controlled trial, nonrandomized controlled trial, cohort study, pre–post study with and without concurrent comparator, and case control study); (d) there was sufficient information to evaluate intervention effectiveness; and (e) the outcomes that could be classified into resident, quality of care or services, family, staff, and organizational

outcomes. Reviewers then reviewed the full text of the potentially eligible studies to determine final inclusion or exclusion.

Data were extracted from the studies that met the inclusion criteria by one researcher and confirmed by a second. Disagreements were resolved through input from a third reviewer. Data extracted included study location, design, study sample, description of culture change, culture change domains addressed, tools used to measure culture change, and the outcome measures and results.

Based upon our analytic framework recognizing a broad range of potential effects of culture change (as outlined in Figure 1), outcomes were grouped into five broad categories: Resident outcomes (e.g., quality of life, depressive symptoms, and self-rated health); quality of care and services (e.g., staff interactions with residents, verbal support, gentleness, medication use, and number of hospital admissions); staff outcomes (e.g., knowledge, satisfaction, absenteeism, turnover, and performance); family outcomes (e.g., satisfaction, burden, and experiences); and organizational outcomes (e.g., mean number of Medicare days per dying resident, occupancy rates, and use of agency staff).

We also assessed the quality of each study using seven characteristics based on guidelines published by the Centers for Reviews and Dissemination and a strategy described by Soban, Hempel, Munjas, Miles, and Rubenstein (2011): (a) Adequacy of the number of study sites; (b) adequacy of the sample size; (c) clarity of study design; (d) clarity of intervention descriptions; (e) use of validated measures to measure outcomes; (f) whether clinical/substantive significance or thresholds were provided for outcomes; and (g) reporting of confidence intervals or tests of statistical significance. Each of these was rated using a 3-point scale where 0 = *lowest possible rating* and 2 = *highest possible rating*. The range of possible scores was 0–14.

Results

Search Results

The initial keyword search identified 4,651 peer-reviewed and 311 gray literature publications. Of these, 559 peer-reviewed and 66 gray literature publications were selected as potentially relevant and underwent a full paper screening process. Of these full paper reviews, 36 studies (31 peer-reviewed articles reporting on 27 distinct studies and 9 gray literature publications) met our inclusion criteria.

Characteristics of Included Studies

Details on each study's location, design, sample, culture change description, culture change domain(s), tool to measure culture change, and the outcome and results are presented in the [Online Appendix Tables](#). Most studies ($n = 28$) were conducted in the United States; seven were conducted in the United Kingdom, and one in Canada. Although roughly half of all studies were conducted in three or more nursing homes ($n = 19$) and had a sample size of more than 30 observations ($n = 18$), the size of interventions varied widely. For example, one study exposed four residents with dementia in one nursing home to a canine intervention (Sellers, 2006), whereas another evaluated the impact of a training and support intervention in delivering person-centered care and creating a "whole home" environment among six intervention compared with six control nursing homes with a combined sample of 349 residents (Fossey et al., 2006).

The methodological quality of studies varied: scores ranged between 0 and 13, and the average score was 8. More than one-third of studies ($n = 14$) used a pre-post study design without concurrent control and only seven studies conducted randomized controlled trials (RCTs) to evaluate the efficacy of culture change in nursing homes. The majority of peer-reviewed studies provided adequate description of implemented interventions,

the validity of their outcome measures, and statistical significance of at least some of the intervention outcomes. Compared with the peer-reviewed literature, the gray literature used weaker reporting; this is not surprising as this literature is not written to withstand peer review nor is it typically written by academics.

Nature and Scope of Nursing Home Culture Change Interventions

Most studies ($n = 24$) addressed more than one culture change domain, and seven of these addressed four or more domains (Table 1). For example, one moved residents to a new Green House® nursing home, which emphasized the residential environment, expanded the role of Certified Nursing Assistants (CNAs), and provided opportunities for privacy and participation in the community (Kane, Lum, Cutler, Degenholtz, & Yu, 2007). Among studies focusing on only one culture change domain, home environment was the most commonly targeted domain ($n = 6$) (e.g., opening a wander garden (Detweiler, Murphy, Myers, & Kim, 2008), providing relaxing music (Hicks-Moore, 2005; Mercado & Mercado, 2006), or having a small home facility (Molony, Evans, Jeon, Rabig, & Straka, 2011).

Among all studies, resident direction ($n = 24$), relationships with staff, family, residents, and community ($n = 19$), and home environment ($n = 17$)

Table 1. Studies by Culture Change Domain Addressed

Number of domains addressed	Culture change domains						Total studies, n
	Resident direction	Home environment	Relationships	Staff empowerment	Collaborative management	CQI processes	
1 domain		×					6
			×				3
	×						3
2 domains	×		×				5
	×	×					2
	×					×	2
				×	×		1
3 domains	×		×	×			2
	×	×				×	1
	×		×			×	1
	×		×	×		×	1
	×	×		×		×	1
4 domains		×	×	×	×		1
5 domains	×	×	×	×	×		4
	×	×	×	×		×	1
6 domains	×	×	×	×	×	×	1
Total studies	24	17	19	12	8	8	36

Note: CQI = Continuous quality improvement.

were the most frequently discussed culture change domains. The nature of how studies addressed the same culture change domain differed. Interventions that targeted resident direction ranged from identifying each resident's needs and preferences to engaging residents in care. Interventions that focused on creating home environment ranged from the inclusion of children and gardens on site (Detweiler et al., 2008; Doll & Bolender, 2010) to playing music during mealtimes (Hicks-Moore, 2005). Interventions targeting close relationships ranged from the display of life history collages (Buron, 2010) to encouraging family engagement in resident care (Burack, Weiner, & Reinhardt, 2012; Fossey et al., 2006; Jablonski, Reed, & Maas, 2005). Staff empowerment interventions ($n = 12$) ranged from staff education (Fossey et al., 2006) to expanding the role of CNAs in nursing homes (Kane et al., 2007). Collaborative and decentralized decision-making interventions ($n = 8$) were reported in fewer studies, and these tended not to detail how decision making occurred. Finally, the eight studies that reported the use of CQI employed different approaches to incorporate this into interventions.

Measurement of Culture Change and Adherence of Culture Change

Although measuring culture change implementation allows for understanding the mechanisms through which an intervention has (or does not have) its influence, few studies ($n = 9$) included an explicit aim to measure the extent to which intervention participants adhered to the culture change intervention or implemented any of the domains of culture change. One study used both the Culture Change Staging Tool and the Culture Change Scale

to assess culture change after implementing small functional neighborhoods (Grant, 2008). Another study reported adapting the Experiences of Home Scale (Molony et al., 2011) to improve its usability by cognitively impaired residents. Few reported strengths or weakness of a particular measure of culture change. Reported limitations of culture change measurement instruments included potential variability in response by different individuals (e.g., perceptions of directors of nursing may differ from those of direct care workers, families, and residents) and the potential of eliciting socially desirable responses (Doty, Koren, & Sturla, 2008; Grant, 2008). Although culture change measurement instruments were not widely used, many studies ($n = 22$) measured practices or suggested practices that change can be treated as an indicator of culture change. For example, one evaluation of the impact of advance care planning on quality of care and outcomes measured changes in the number of "Do not attempt resuscitation" orders, which may indicate resident direction (Hockley, Watson, Oxenham, & Murray, 2010).

Measurement of Culture Change Outcomes

Table 2 presents the number of studies, by domain, measuring each outcome category. Most studies ($n = 26$) measured more than one outcome category. Resident outcomes were most commonly measured ($n = 28$), followed by quality of care and services ($n = 17$), staff ($n = 17$), organizational outcomes ($n = 6$), and family ($n = 5$) outcome categories.

The outcomes were measured using validated tools in the majority of peer-reviewed studies ($n = 24$). For example, resident agitation and aggressive behaviors were predominantly

Table 2. Studies by Culture Change Domain Addressed and Outcomes Measured

Culture change domain addressed	Outcome measures				
	Resident	Family	Quality of care and services	Staff	Organizational
Resident direction	20	3	9	10	6
Home environment	13	3	8	6	4
Relationships	15	4	9	11	4
Staff empowerment	8	4	4	7	4
Collaborative management	5	4	1	6	2
CQI Processes	6	0	5	5	2
Total unique studies, n^a	28	5	17	17	6

Note: CQI = Continuous quality improvement.

^aThe total unique studies does not equal the total in column because most studies addressed more than one culture change domain.

measured with the Cohen-Mansfield Agitation Inventory (Detweiler et al., 2008; Fossey et al., 2006; Hicks-Moore, 2005). Depressive symptoms were typically measured using the Geriatric Depression Scale (Crogan et al., 2007; Meeks, Looney, Van Haitsma, & Teri, 2008; Molony et al., 2011; Robinson & Rosher, 2006) or the Cornell Scale (Brooker, Woolley, & Lee, 2007). Dementia Care Mapping (Brooker et al., 2007; Fossey et al., 2006) and Dementia Quality of Life (Brooker et al., 2007) instruments were used to measure various resident-level and quality of life outcomes for residents with dementia. Affect was measured with the original or modified Philadelphia Geriatric Center Affect Rating Scale (Fritsch et al., 2009; Meeks et al., 2008).

Relationship Between Culture Change Interventions and Outcomes

Table 2 presents the number of studies that addressed each culture change domain and the related categories of outcomes. Included studies were widely heterogeneous in the culture change domains addressed and outcomes measured.

Among the numerous outcomes tested, statistically significant worse outcomes in the intervention versus comparator groups were rare: Only four studies reported negative or harmful outcomes. Moreover, negative trends in some outcomes were typically balanced by positive trends in other outcomes. For example, one study found an increase in fear/anxiety, sad affect, and challenging behaviors but also reported significant positive impact of culture change on resident engagement (Fritsch et al., 2009). A different study measured multiple outcomes and found an increase in incontinence, as well as a decrease in activities and in family assistance in at least one of two intervention facilities (Kane et al., 2007; Lum, Kane, Cutler, & Yu, 2008). One study found a decrease in measured well-being in 1/3 of sites (Brooker et al., 2007) and another found, despite no overall change in adverse incidence reports, an unexpected significant increase in physical incidents (Detweiler et al., 2008).

Eight peer-reviewed studies did not show that any outcomes achieved a statistically significant improvement when measured against the comparator group. However, one of these did report observing clinically meaningful changes in the categorization of depressive symptoms. In the gray literature, six did not show statistical significance

in the outcomes measured. Some positive effects of culture change were identified in the remaining 19 peer-reviewed studies and three gray literature reports. Of those with mixed results, 12 peer-reviewed studies found less than half of the measured outcomes were significantly better than the comparator. Half or more of the measured outcomes were significantly better in seven of the peer-reviewed studies and three gray literature reports.

Table 3 shows, by type of outcome, the number of studies that reported statistically significant improvement, the number where results were mixed for that outcome, and the number of studies that showed no significant improvement (i.e., significantly negative or were not able to demonstrate statistical significance). Comparing these outcomes, no resident or family outcomes were found to have a predominance of studies showing positive change. Among the quality of care and services outcomes, creation of advance care plans had an equal number of studies that showed improvements as not, and restraint reduction was improved in the one study that examined this area. There was also evidence of a positive impact of culture change on one staff outcome—staff knowledge; two studies showed benefit in this area. Staff turnover/retention and staff perception of value each had equivalent numbers of studies showing significant improvement as they had studies that did not. Each of three organizational outcomes (operations costs, occupancy rates, and profits) had one study showing significant improvement and one study showing no significant improvement.

High-Quality Studies and Multidimensional Interventions.—We conducted three different sensitivity analyses to determine whether stricter criteria would have altered our results. First, because the inclusion of poor quality studies could have adversely influenced the count of positive results, we examined whether the results of the literature review differed when only the highest quality studies with scores of at least 11 out of 14 (Appendix Table 1) were considered. Second, because a single or limited component intervention might make achieving significant change less likely, we examined whether limiting the review to multi-component interventions (those that addressed four or more domains of culture change) led to strong conclusions about outcomes (Appendix Table 1). Finally, we also examined the outcomes

Table 3. Studies by Reported Effect of Intervention on Outcome

	Statistically significant improvement	Mixed results	No significant improvement
Resident outcome measures			
Resident mood (depression)	4	0	6
Resident anxiety/behavior/agitation	2	2	8
Resident satisfaction	2	0	4
Resident QoL/well-being	1	3	6
Resident engagement and activities	1	4	5
Resident nutritional status (BMI/albumin)	0	1	2
Resident cognition	0	1	4
Resident functional status	1	1	5
Resident health status	0	0	4
Resident pain/comfort	2	0	3
Resident other outcomes	0	0	7
Family outcome measures			
Family satisfaction	1	2	3
Family contacts/assistance	0	1	0
Family burden/comfort	0	0	2
Quality of care and services outcome measures			
Medication markers	0	1	6
Hospitalization	0	0	1
Staff approach to resident	1	2	2
Advance care plans	1	0	1
Quality measures/Quality of care	0	1	1
Restraint reduction	1	0	0
Staff outcome measures			
Staff knowledge	2	0	0
Staff attitude	1	0	3
Staff satisfaction/well-being/burnout	1	1	8
Staff injuries	0	0	1
Staff absenteeism	1	0	2
Staff turnover/retention	2	0	2
Staff value intervention	1	1	1
Use of temporary workers	0	0	2
Staff workload	0	0	1
Staff involvement/teamwork	0	0	2
Organizational outcome measures			
Out of pocket costs	0	0	1
Number of medicare days	0	0	2
Operations costs	1	0	1
Medications costs	0	0	1
Hours spent passing medications	0	0	1
Occupancy rates	1	0	1
Revenue/profits	1	0	1
Deficiencies	0	0	1

of multicomponent interventions in high-quality studies. The conclusions did not change in these three sensitivity analyses. High-quality scores and multicomponent interventions did not systematically relate to the likelihood of finding a positive result.

Discussion

Starting from an analytic framework for evaluating culture change, our analysis of the 36 peer-reviewed and gray literature studies suggests that culture change in nursing homes remains an

evolving field—there is not yet sufficient evidence to provide specific guidance to nursing homes interested in implementing culture change. Studies varied widely in the types of residents or nursing home units targeted, the number and type of culture change domains addressed, how each culture change domain was implemented, the selection of target outcomes, and how outcomes were measured. This wide variation complicates synthesis. In addition, studies varied in sample size, and the small samples contribute to the limited conclusions we can draw. Only about half of all interventions were implemented in three or more nursing homes and even fewer were conducted in different regions, thereby limiting generalizability. The evidence does not clearly show how many domains should be addressed or which domain combinations are most essential to meaningful and sustained change. Some domains, such as collaborative decision making and implementation of CQI principles were infrequently addressed, further limiting the conclusions that can be drawn and potentially diminishing the ability of interventions to achieve and sustain measurable improvements in outcomes.

Most studies did not detail how and to what degree culture change was actually implemented, adding to the challenge of drawing conclusions and providing guidance to nursing homes. The absence of systematic assessment of implementation adherence makes it difficult to understand the mechanisms through which interventions such as culture change might or might not have influenced outcomes (Durlak & DuPre, 2008; Harachi, Abbott, Catalano, Haggerty, & Fleming, 1999). For example, an evidence-based intervention may fail to achieve its intended outcomes not because the intervention did not work, but because it was not fully implemented (Campbell et al., 2007). Thus, the failure to evaluate adherence to the intervention limits our ability to understand the mechanism by which the outcome results occurred.

In examining this emerging field, study of both positive and negative outcomes is relevant. Our literature review indicates that culture change does not, in general, lead to significant negative outcomes; however, even this conclusion is tempered by the methodological limitations noted earlier. A stronger testament to the conclusion of no negative outcomes is presented by Grabowski et al. (2014). Their analysis of survey and administrative data related to 251 nursing home culture

change adopters found no significant decline in MDS indicators.

Our examination of positive studies yields only seven in which at least half of the outcomes were favorable. The results, nonetheless, hold promise. A majority of outcomes measured had at least one study that showed statistically significant positive outcomes or mixed outcomes. However, with the exception of improved knowledge from two educational interventions, the literature review did not reveal a consistently positive and statistically significant improvement for a particular outcome within any of the outcome domains. This lack of consistent evidence may also be due to the fact that, despite an intentionally broad search and liberal selection strategy (i.e., including non-peer-reviewed literature and not limiting to RCTs), only 36 studies in the United States, United Kingdom, and Canada used a comparator group to examine the results of any culture change intervention. Finally, many of the selected measures may not adequately capture resident-centered care that is grounded in realizing distinct and individualized resident preferences.

The methodological limitations of the included studies highlight the many challenges of studying culture change in nursing homes. Culture change interventions are, by their nature, complex. Most culture change interventions target more than one domain of culture change, and full, consistent implementation of care processes may require long time periods. Culture change affects all organizational levels of the nursing home including the residents, direct care staff, and management, as well as the physical environment. Other methodological challenges include inability to randomize individuals or units, often small sample sizes because many culture change models are organized around small group homes to promote resident-directed care, heterogeneous interventions, and measurement of many outcomes. A lack of an analytic framework and consensus on how to define the overarching goals of culture change may also impede the field. These challenges make it difficult for researchers to determine which components of the intervention are contributing to the observed outcomes, draw conclusions, and provide guidance to nursing homes.

Future studies can address these research challenges. The current review begins by organizing our analysis around a framework and identifying key elements of study design. To further move the field forward, sophisticated design and evaluation

methods need to be employed to best understand the potential effects of culture change. Research on culture change should include coordinated demonstrations with multiple nursing homes using a quasi-experimental design that occur over a several year period. Studies should identify primary outcomes (Craig et al., 2008), describe the theory linking the intervention to target outcomes (Shekelle et al., 2011), and assess adherence and outcomes at multiple points during the study. In addition, the elements of the intervention and processes of quality of residential care (Saliba & Schnelle, 2002) should be systematically measured. A process evaluation, along with the quantitative study, can provide necessary insight on implementation including why an intervention works and how it could be optimized (Craig et al., 2008). Process evaluations can provide details of a culture change program or intervention and help evaluate adherence to the intervention to understand the mechanism by which outcome results occurred, which may be especially useful to nursing homes interested in implementing culture change practices. Finally, studies should clearly document the context of the intervention setting, including external factors, nursing home size, staffing resources, teamwork and leadership, and management tools (Shekelle et al., 2011), that may facilitate or impede the implementation efforts.

Limitations

The variations in target populations, design, interventions, and outcome measure limit any effort to combine samples across the studies and thus reduce the ability to detect change. We also limited to studies conducted in the United States, United Kingdom, and Canada because of the importance of the external environment in our analytic framework, which may exclude potential evidence from other countries.

Conclusions and Implications

Nursing home culture change has face validity in terms of its value, and there are potential policy opportunities to support the development of data to determine its effectiveness. For example, the survey and certification process could prioritize measures that are shown to be sensitive to change and have a clear causal relationship with culture change. Doing so would be an advantage, as culture change is growing in the absence of consistent

evidence as to its efficacy. The variation in the way each domain of culture change is operationalized and each type of intervention outcome is measured makes it difficult to conclude whether a particular domain of culture change is associated with a particular outcome. As a result, nursing homes wanting to import culture change are currently unable to use the published literature to identify the best tested approaches to be implemented now. This lack of clear association between culture change and outcomes is unfortunate because comprehensive culture change may require substantial buy-in from all nursing home leadership and staff and require considerable resources. This means that nursing homes would benefit from the ability to weigh these investments against the anticipated benefits. Providers need sufficient information for selecting interventions based on the expectation of improving measurable outcomes.

Future studies should carefully measure the process of implementation and fidelity to the culture change intervention to improve understanding of the extent to which changes in intervention outcomes can be attributed to change in nursing home culture. Studies should also begin from a well-conceptualized framework and measure, using validated tools, outcomes that are most likely related by a clear causal hypothesis to domains of culture change and are sensitive to change. Results from these types of studies would facilitate the interpretation of findings, and if positive, would provide evidence to guide providers implementing culture change, and help strengthen the argument for local, state, and federal policy changes to support adoption of culture change practices.

Supplementary Material

Supplementary material can be found at: <http://gerontologist.oxfordjournals.org>.

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