

Measurement of Nursing Home Culture Change

Systematic Review

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ABSTRACT

Nursing home culture change (NHCC) aims to change the way care is provided in nursing homes. Valid and reliable measures are needed to evaluate the impact of NHCC on outcomes. The current systematic review provides an overview of instruments designed to measure NHCC and criteria for others to evaluate and choose instruments according to their own purpose. Ten instruments were identified that measure NHCC on an organizational level. Lack of development description hindered their assessment, and studies examining the relationship between NHCC and outcomes are rare. A common limitation of the instruments reviewed was the lack of psychometric testing; thus, their validity and reliability need further exploration.

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Nursing homes across the nation are working toward change with a goal of improving the quality of life and quality of care of those they serve (Miller et al., 2013). This change is known as the nursing home culture change (NHCC) movement. This movement seeks to transform nursing homes into places where residents thrive and do not simply survive (Koren, 2010).

As the population ages, considerable resources will be required to meet the health care needs of older adults. Changes in care delivery that improve quality of life and quality of care, within considerable financial constraints, are needed to meet the ever-increasing needs of the nursing home population. NHCC has shown promising results in improving care for individuals living in nursing homes,

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including reduced loneliness, helplessness, depression, and behavioral problems; prevention of weight loss; decreased mortality; and improved mental and physical health outcomes (Bergman-Evans, 2004; Grant, 2008; Lum, Kane, Cutler, & Yu, 2008; Robinson & Gallagher, 2008).

Over the past 15 years, many studies have examined the relationship between NHCC and resident, staff, and organizational outcomes (Shier, Khodyakov, Cohen, Zimmerman, & Saliba, 2014). Early studies investigated outcomes associated with a specific culture change model, such as the Eden Alternative or Wellspring Model (Hill, Kolanowski, Milonea-Nuzzo, & Yevchak, 2011). However, more general models emerged as facilities began adopting varying aspects of the different models. This emergence of models resulted in a broader description of NHCC. Although studies have examined the relationship between NHCC and outcomes, valid and reliable measures of NHCC are lacking and consequently challenge the validity of these studies.

A primary step in evaluating the impact of NHCC on resident, staff, and organizational outcomes is to have a valid and reliable measure of NHCC. Definitions for NHCC differ among studies (Colorado Foundation for Medical Care, 2006; Grabowski, Elliot, Leitzell, Cohen, & Zimmerman, 2014; Grant, 2008; Hartmann et al., 2013; Koren, 2010). One definition of NHCC, developed by an expert panel assembled by the Commonwealth Fund (Colorado Foundation for Medical Care, 2006), is most frequently cited in the literature and used as the framework for the current review. The definition includes six components of NHCC: (a) resident-directed care and activities; (b) home environment; (c) relationships with staff, family, residents, and community; (d) staff empowerment; (e) collaborative and decentralized management; and (f) measurement-based, comprehensive quality improvement processes (Colorado Foundation for Medical Care, 2006).

The ability to measure NHCC at the organizational level is important for several reasons, including the recent development of NHCC practices as part of Medicaid pay-for-performance models (Grabowski et al., 2014) and new federal regulations that highlight person-centered care (PCC). As the capacity to measure NHCC improves, the ability to estimate its effect on resident, staff, and organizational outcomes will be more defensible. Greater understanding of the impact of NHCC on outcomes will guide the development of policy to further adoption of NHCC.

A literature review conducted more than 10 years ago identified eight instruments to measure NHCC (Colorado Foundation for Medical Care, 2006). Of those instruments, the Wellspring Alliance Staff Survey, Long-Term

Care Leadership Self-Assessment, CARF Person-Centered Long-Term Care Community Standards, and Eden Warmth Surveys were not designed to measure implementation of NHCC on an organizational level. Further, the Kansas Culture Change Organizational Self-Assessment instrument, which measures NHCC at the organizational level, has since been revised. Thus, there is need for a new review and evaluation of NHCC measures 10 years later.

SYSTEMATIC LITERATURE REVIEW

The current systematic review was performed to evaluate existing instruments designed to measure NHCC at the organizational level. This review identified and evaluated the purpose and uses of the instruments, their psychometric properties, and inclusion of the six conceptual components of NHCC.

METHOD

Search Strategy and Article Selection

An electronic search of the literature was performed in Medline, PsycINFO, CINAHL, and EMBASE. The year 1995 was used to capture the beginning of the culture change movement. Ancestry searches of relevant articles resulted in additional articles. ProQuest and Web of Science databases were searched for unpublished literature, including conference proceedings, theses, and dissertations. Finally, experts in NHCC were consulted to identify additional literature on NHCC measurement. The following keywords were used in the search: *culture change, person-centered care, resident-centered care, nursing home, long-term care, measure, assessment, tool, psychometric, instrument, and scale*. All titles, abstracts, and reference lists of studies retrieved by the literature search were screened to determine eligibility. Citations that might have included an instrument used to investigate a nursing home's implementation of NHCC were selected, based on a review of the abstract. The full text was examined when information about the instrument was not available in the abstract. Articles were retained if they discussed the development of instruments proposed to measure NHCC or reported quantitative results of an instrument. The reference lists of selected articles were systematically reviewed to identify any additional relevant articles. At the end of this process, known experts in the field of NHCC were asked to identify any additional instruments used for measuring NHCC.

Inclusion and Exclusion Criteria

Inclusion criteria were articles published in English, including articles from other countries. Articles were

restricted to studies of NHCC in nursing homes. No specific study methods were excluded. Although instruments exist to measure PCC from the perspective of the resident (Coyle & Williams, 2001; De Witte, Schoot, & Proot, 2006) and PCC is an element of NHCC, the aim of the current study was to evaluate instruments that measure NHCC implementation of the organization as a whole. Therefore, articles related to the measurement of PCC of individuals were excluded.

Articles Included

The search strategy identified 846 citations in Medline and 475 in PsycINFO databases (Figure). The search in CINAHL and EMBASE databases identified 494 and 654 citations, respectively. Finally, the search in the ProQuest database identified 67 citations, for a total of 2,536 citations. Following removal of duplicates, 987 citations remained. Most of these references were excluded as not meeting the inclusion criteria by reading the abstract. Forty-two were read completely and evaluated. Among these articles, 26 were not about the development or validation of an instrument and five did not measure NHCC on an organizational level, resulting in 11 articles that used one of four instruments. Hand searches and consultation with NHCC experts identified six additional instruments. Two instruments identified by these experts that met the current review's inclusion/exclusion criterion are unpublished. Likewise, no published articles were found for three instruments that were identified through hand searches. A final sample of 13 articles covering 10 instruments met the inclusion/exclusion criteria for this review.

Data Extraction

Data were extracted from the articles to describe instrument characteristics and evaluate the extent to which the instrument had any of the six components of NHCC. Data extraction was conducted by the first (D.L.S.) and third (K.C.B.) authors, the latter of whom is a seasoned investigator with extensive experience in data abstraction. The quality of measurement properties was assessed by the investigator (D.L.S.) and confirmed by a second expert reviewer (K.C.B.). A number of standardized data abstraction tools were reviewed and considered for use in this systematic review; however, none met the needs of this review. Therefore, the authors developed their own systematic checklist that included the elements described below.

Instrument Characteristics. The descriptive data extracted for each instrument included: (a) the name of the instrument; (b) origin of development sources; (c) the

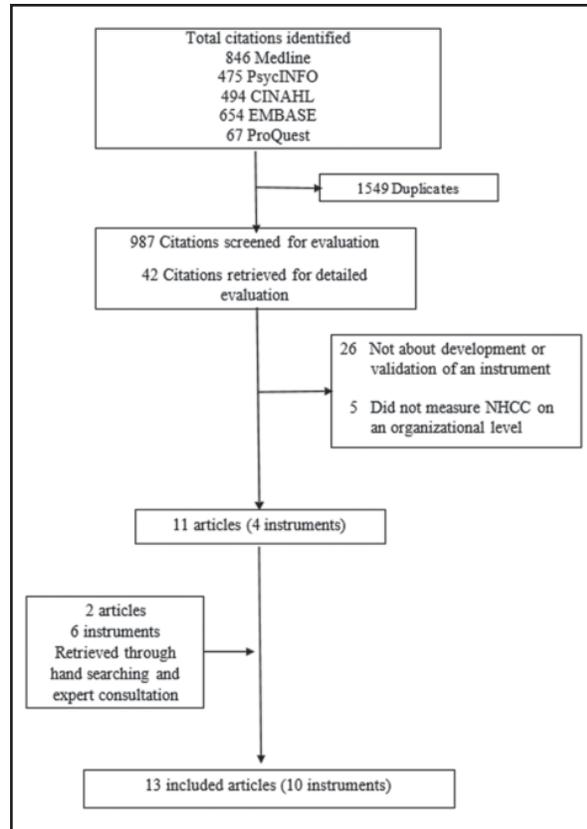


Figure. Number of instruments and citations identified through the stages of the systematic review.
Note. NHCC = nursing home culture change.

intended purpose of the instrument; (d) the number of items; (e) the scoring algorithm; (f) the mode of administration (self-report or interview); and (g) whether and where the full text of the instrument was available.

Inclusion of Components of NHCC

Instrument items were mapped to the six components of NHCC: resident-directed care and activities; home environment; close relationships; staff empowerment; collaborative and decentralized management; and measurement-based continuous quality improvement (CQI), according to 25 key practices associated with the six components of NHCC (Table A, available in the online version of this article). Mapping of the items was conducted independently by two authors (D.L.S., K.C.B.). Percent of agreement was calculated and any discrepancies resolved via discussion by the two reviewers until 100% agreement was achieved.

Psychometric Properties. Psychometric properties provide information about the quality of an instrument and can be useful in guiding clinicians and researchers in choosing between various instruments (Waltz, Strickland,

& Lenz, 2010). For the current review, the validity (content, face, and construct) and reliability (internal consistency) of the instruments were assessed. To assess the quality of a measurement instrument, a clear description of the development of the instrument was considered critical (Polit & Beck, 2012). The validity and reliability of the measures were rated using a system of symbols to indicate high quality, low quality, unable to determine, and not done.

A *high quality* rating was given for content validity if a clear description was provided for the purpose or aim, target population, concepts to be measured, item selection, and involvement of experts and/or the target population in development of the instrument. A *low quality* rating was given when some, but not all aspects, were described. An *unable to determine* rating was given when information regarding development was stated as a purpose but the results were not reported, and a rating of *not done* was given when the article clearly stated that content validity was not evaluated.

Construct validity refers to the extent to which the scores for an instrument correspond to other measures in a way that is consistent with regard to the theoretical assumptions of the construct to be measured (DeVellis, 2012). Instruments received a *high quality* rating for construct validity if at least 75% of predefined hypotheses were confirmed (Waltz et al., 2010). A *low quality* rating was given if <75% of predefined hypotheses were confirmed. An *unable to determine* rating was given when information was not available or not reported, and a *not done* rating was given when the article clearly reported testing was not conducted.

Internal consistency reliability is used to evaluate the degree to which different test items that probe the same construct produce similar results (DeVellis, 2012; Waltz et al., 2010). A *high quality* rating for internal consistency was given when Cronbach's alpha was between 0.70 and 0.95 (Waltz et al., 2010). A *low quality* rating was assessed when a reported Cronbach's alpha was <0.70. A rating of *unable to determine* was given if information regarding testing of internal consistency was not available or not reported, and a *not done* rating was given if the article reported this method of reliability was not conducted. Additional types of reliability of instruments such as test-retest and parallel forms procedures were not assessed.

RESULTS

Ten instruments were found to meet inclusion criteria for the current review: Artifacts of Culture Change (ACCT; Bowman & Schoeneman, 2006), Commonwealth Fund Survey (CFS; Doty, Koren, & Sturla, 2008), Components of

NHCC Survey (CNHCCS; Mueller, 2007), Culture Change Assessment Tool (CCAT; Colorado Foundation for Medical Care, 2008), Culture Change Indicator Survey (CCIS; Institute for Caregiver Education, 2014), Culture Change Staging Tool (CCST; Grant, 2008), Culture Change Scale (CCS; Grant, 2008), Kansas Culture Change Instrument (KCCI; Bott et al., 2007), Long-Term Care Improvement Guide Self-Assessment Tool (LTCIGSAT; Frampton et al., 2010), and the Person Directed Care (PDC; White, Newton-Curtis, & Lyons, 2008).

Availability of the instruments included in the review varied. The ACCT, CCIS, and LTCIGSAT are freely accessible online. Online access of the KCCI is currently restricted to Kansas nursing homes and access to the CCST requires participation in the My Innerview program. My Innerview, a part of National Research Corporation, is a program that offers facilities services to assist in measuring quality and satisfaction (access <http://www.myinnerview.com>).

Characteristics of Instruments

The majority (80%) of instruments were developed using existing literature and expert consultation. All instruments were developed to assess or monitor a nursing home's culture change progress. Additional stated purposes of the various instruments included identifying potential opportunities for improvement (Long-Term Care Improvement Guide, 2010), providing suggestions for additional changes to nursing homes (Institute for Caregiver Education, 2014), and assessing leadership development (Grant, 2008). **Table 1** summarizes the characteristics of the instruments.

The instruments varied regarding the number of items (range = 14 to 92 items) and scoring algorithms. The LTCIGSAT had the most items ($N = 92$), and the CCST had the least items ($N = 14$). The scoring algorithms of the instruments also varied. The ACCT includes multiple scoring methods including binary, percentage, and 3-point Likert, with points assessed for each response. The KCCI uses a 4-point Likert scale with responses ranging from 1 (*never*) to 4 (*always*), and the CFS uses an algorithm structure to determine a facility's stage of NHCC. Nine of the 10 instruments have subscales, with the CCST as the exception.

All instruments are self-report questionnaires. Self-report questionnaires have advantages in that they allow collection of large amounts of data in short periods of time, and they are quick and simple to administer (Waltz et al., 2010). Disadvantages of self-report questionnaires include the tendency by respondents to answer in a socially

TABLE 1
Characteristics of Instruments Measuring Nursing Home Culture Change (NHCC)

Instrument	Origin	Purpose	Number of Items	Scoring Algorithm	Validity and Reliability	Full Copy of Instrument Available
Artifacts of Culture Change Tool (ACCT) (Bowman & Schoeneman, 2006)	Existing instruments, existing literature, expert consultation	To evaluate progress of culture change practices	79	Various: All-some-none Percent yes/no	Face validity Content validity	Yes
Commonwealth Fund Survey (CFS) (Doty et al., 2008)	Unknown	To measure extent to which NHs are adopting culture change practices	55	4-point Likert scales: completely to not at all or extremely to not at all	N/A	No
Components of NHCC Survey (CNHCCS) (Mueller, 2007)	Existing instruments	To monitor NHCC progress	64	Yes/no/working on this	N/A	No
Culture Change Assessment Tool (CCAT) (Colorado Foundation for Medical Care, 2008)	Existing literature	To identify culture change practices and evaluate progress	51	Responses for each subscale assigned point values. Response options differ across subscales. Responses count toward the calculation of the subscale score and overall score.	N/A	Yes
Culture Change Indicator Survey (CCIS) (Institute for Caregiver Education, 2014)	Unknown	To monitor progress of NHCC, provide suggestions for additional changes	48	Four subscales, 12 items in each. For each item: 4-point Likert scale, 0 = not even considered to 4 = fully implemented.	N/A	Yes
Culture Change Staging Tool (CCST) (Grant, 2008)	Expert elicitation method	To evaluate progress of NHCC, classifies a facility into 1 of 4 stages	14	Algorithm: Yes/no	N/A	No
Culture Change Scale (CCS) (Grant, 2008)	Expert consultation	To assess culture change progress	48	Subscale and total	Cronbach's alpha 0.80-0.97	No

TABLE 1 (CONTINUED)
Characteristics of Instruments Measuring Nursing Home Culture Change (NHCC)

Instrument	Origin	Purpose	Number of Items	Scoring Algorithm	Validity and Reliability	Full Copy of Instrument Available
Kansas Culture Change Instrument (KCCI) (Bott et al., 2007)	Existing literature, expert consultation, existing instruments	Used to evaluate progress of NHCC	Leader: 78 Staff: 69	4-point Likert scale (never to always) on resident care, NH environment, relationships, staff empowerment, NH leadership, and shared values subscales 4-point Likert scale (strongly disagree to strongly agree) on quality improvement subscale	Cronbach's alpha 0.75-0.94	Yes
Long-Term Care Improvement Guide Self-Assessment Tool (LTCIGSAT) (Long-Term Care Improvement Guide, 2010)	Existing literature, expert consultation	Used to assess progress of NHCC and identify potential opportunities for improvement	92	Subscale: 0 = no activity/not implemented, 1 = partially implemented, 2 = fully implemented. Calculate % of total.	N/A	Yes
Person-Directed Care (PDC) (White, Newton-Curtis, & Lyons, 2008)	Existing literature, expert consultation	Designed to assess person-directed care practices in LTC	50	5-point Likert scale, 1 = very few or none/rarely or none of the time to 5 = all or almost all/ all or almost all of the time	Cronbach's alpha 0.74-0.91	No

Note. NH = nursing home; N/A = no information available; LTC = long-term care. All measures are self-report.

appropriate manner as well as failure to carefully consider their responses (Waltz et al., 2010).

Inclusion of NHCC Components

All instruments included in the review had items measuring at least four of the six components of NHCC. **Table 2** presents a description of the inclusion of the components of the NHCC conceptual framework included in the instruments. Five of 10 instruments (CFS, CCAT, KCCI, LTCIGSAT, PDC) had items measuring all six components of NHCC. Operationalization of the six conceptual components of NHCC is inconsistent across the instruments. For example, the ACCT contains more items related to the environment, whereas the LTCIGSAT has more items associated with relationships and collaborative and decentralized management. The CCAT has the most items related to resident-directed care and activities. The ACCT, CNHCCS, CCIS, and CCST did not include the CQI component. The KCCI, in addition to the six NHCC components, contains a subscale, entitled “Shared Values,” to assess similarities of staff and leader views of NHCC (Bott et al., 2007).

Mapping of the individual items of the instruments to the six components resulted in inter-rater reliability of 97% agreement. A total of 617 items were mapped with 19 items coded differently by the individual reviewers. Cohen's kappa determined agreement between the reviews. There was good agreement between the two reviewers, $K = 0.96$ (95% confidence interval [CI], 0.943 to 0.977, $p < 0.0005$). Percent of agreement was calculated and any discrepancies resolved via discussion by the two reviewers until 100% agreement was achieved. The most discrepancies between the reviewers were on the PDC.

TABLE 2
Nursing Home Culture Change Instruments

Instrument	Number of Items Assessing Conceptual Framework Components					
	Resident-Directed Care and Activities	Home Environment	Relationships	Staff Empowerment	Collaborative and Decentralized Management	Measurement-Based CQI Processes
ACCT	6	34	17	6	3	0
CFS	15	16	8	6	9	1
CNHCCS	16	16	14	5	13	0
CCAT	29	4	4	7	6	1
CCIS	10	19	3	5	11	0
CCST	3	2	1	0	8	0
CCS	7	0	3	10	20	8
KCCI						
Leader version	9	9	11	8	15	9
Staff version	9	9	11	8	14	4
LTCIGSAT	12	11	22	3	36	8
PDC	21	3	17	2	7	1

Note. CQI = continuous quality improvement; ACCT = Artifacts of Culture Change Tool; CFS = Commonwealth Fund Survey; CNHCCS = Components of Nursing Home Culture Change Survey; CCAT = Culture Change Assessment Tool; CCIS = Culture Change Indicator Survey; CCST = Culture Change Staging Tool; CCS = Culture Change Scale; KCCI = Kansas Culture Change Instrument; LTCIGSAT = Long-Term Care Improvement Guide Self-Assessment Tool; and PDC = Person-Directed Care.

Mapping of the items was sometimes difficult because the item could be mapped to more than one component of NHCC. The mapping required that the items be mutually exclusive, each reflecting a single domain within the NHCC conceptual framework. For example, the item “We routinely provide continuing education to all stakeholders (residents, family, and staff)” could be mapped to collaborative and decentralized management and relationships, and “Residents, families and front-line staff participate in the care planning process” could be mapped to the component of relationships, staff empowerment, or resident-directed care and activities. Some items did not match any of the six components well, such as the items “Home offers aromatherapy to resident by staff or volunteers” and “Our hiring practices include the use of behavioral based questions.”

Psychometric Properties of Instruments

All instruments had reported face validity. Two instruments, the KCCI and PDC reported content validity, whereas the KCCI was the only instrument reporting construct validity, which included interclass correlation, confirmatory factor analysis, and cluster analysis. Three

instruments, the CCS, KCCI, and PDC, reported internal consistency. **Table 3** provides the ratings of the psychometric properties assigned to the instruments by agreement of both raters. The KCCI and PDC received *high quality* ratings on face validity, content validity, and internal consistency, with reported Cronbach's alpha of 0.75 to 0.94 and 0.74 to 0.91, respectively. The CCS also received high-quality ratings on face validity and internal consistency, with a reported Cronbach's alpha of 0.80 to 0.97; however, content validity was assessed as *low quality* due to unreported or missing aspects. The majority (60%) of instruments had little or no information available regarding development, which hindered assessment of the psychometric properties of those instruments.

Use of Instruments in Research

Of the instruments extracted, only the KCCI, ACCT, and CCS were used to evaluate NHCC outcomes in nursing homes. Bott et al. (2009) used the KCCI to examine the relationship between NHCC and the outcome of staff turnover, deficiencies, and resident outcomes. A subsequent study by Myers and Bott (2009) explored whether leaders and staff would score differently on the instrument's sub-

TABLE 3
Ratings^a of Instrument Psychometric Properties

Instrument	Face Validity	Content Validity	Construct Validity	Internal Consistency
ACCT	+	-	0	0
CFS	+	-	?	?
CNHCCS	+	?	?	?
CCAT	+	-	?	?
CCIS	+	?	?	?
CCST	+	?	?	?
CCS	+	-	?	+
KCCI	+	+	+	+
LTCIGSAT	+	?	?	?
PDC	+	+	?	+

Note. ACCT = Artifacts of Culture Change Tool; CFS = Commonwealth Fund Survey; CNHCCS = Components of Nursing Home Culture Change Survey; CCAT = Culture Change Assessment Tool; CCIS = Culture Change Indicator Survey; CCST = Culture Change Staging Tool; CCS = Culture Change Scale; KCCI = Kansas Culture Change Instrument; LTCIGSAT = Long-Term Care Improvement Guide Self-Assessment Tool; and PDC = Person Directed Care.

^a Where + = high quality; - = low quality; ? = unable to determine; and 0 = not done.

scales. Myers and Bott (2009) also examined variances in KCCI leader and staff scores in nursing homes engaged in culture change compared to non-culture change homes. In these studies, the authors did not report on the usefulness of the KCCI for measuring NHCC or note any limitation related to the measures.

The ACCT was used to explore the relationship between NHCC and resident quality measures outcomes with mixed results (van Spronsen, 2011). However, no psychometric testing of the ACCT was reported. In addition, although the author noted the length of the ACCT as a limitation, there was no report on the usefulness of the instrument. Another study by Sullivan et al. (2013) examined the relationship between NHCC and quality measure outcomes using a modified version of the ACCT. In their study, the authors found the ACCT useful in identifying visible changes related to NHCC (Sullivan et al., 2013). However, they also noted a limitation of the ACCT is its inability to assess the less objective components of NHCC, such as resident autonomy and close relationships between residents and staff (Sullivan et al., 2013).

A single study has looked at the CCS in relationship to resident, staff, and family outcomes (Grant, 2008). In the same study, the CCST was used to interview administrators to determine the extent of implementation of NHCC in the participating facilities (Grant, 2008). The study author did not report on the usefulness of the instruments they used for measuring NHCC or note any limitations related to the measures (Grant, 2008).

DISCUSSION

The current review identified 10 instruments to assess NHCC at an organizational level. Although the intended uses of the instruments were similar, their characteristics and psychometric properties varied. In addition, assessment of the validity and reliability of the instruments was difficult because of lack of available information describing the development of the instruments. Few studies used these instruments to examine organizational outcomes.

The results of the current systematic review suggest two instruments, the KCCI and ACCT, met reasonable criteria to measure implementation of NHCC. The KCCI is the most comprehensive and psychometrically robust of instruments included in the review, as it included all six components of NHCC. Based on the specified criteria, it received a *high quality* rating on face, content, and construct validity, and internal consistency. In addition, it is available online; however, access is limited to Kansas nursing homes. Better availability of the KCCI to nursing homes in other states is needed to facilitate additional psychometric testing.

The ACCT is the most widely used instrument, as it is promoted by the Pioneer Network to evaluate the progress of NHCC in U.S. nursing homes. A 2012 summary from the Pioneer Network reports that the ACCT was completed 1,698 times between September 2009 and August 2012, representing 473 organizations in 48 states and the District of Columbia (Artifacts of Culture Change Benchmark Reports, 2012). Development of the ACCT was supported through a contract with the Centers for Medicare & Med-

icaid Services (2012) to guide nursing homes in moving forward with NHCC (Bowman & Schoeneman, 2006). In addition, it can be completed online, and nursing homes can save their data electronically, creating a convenient way for facilities to track their progress over time.

The current systematic review of instruments to measure NHCC reveals limited progress regarding further development and refinement of new and existing tools to measure NHCC. Similar to the Colorado Foundation for Medical Care 2006 review, most of the instruments have not been validated or used in actual research. However, the current review identified an increasing number of validated tools that can be used to explore if, and to what extent, NHCC improves outcomes. In light of the commonly held belief that NHCC improves quality of life and quality of care for nursing home residents, rigorous study is needed to strengthen the evidence base for NHCC.

Additional psychometric testing of instruments designed to measure NHCC is called for, and researchers must give greater attention to measurement development, testing, and refinement. More specifically, any instrument used to measure NHCC requires evidence of reliability, a necessary but insufficient component of validity. Further, given the need to determine the impact of NHCC on resident, staff, family, and organizational outcomes, instruments are needed that are sensitive to change over time. In particular, tools that demonstrate responsiveness, which is the ability to measure meaningful change, are needed. Criterion-related validity, which was not assessed in the current study, could also be evaluated. Criteria (i.e., concurrent and predictive, depending on timing of the assessment) might include factors such as staff stability (e.g., decreased turnover and absenteeism), fewer deficiencies on surveys, and less use of inappropriate/unnecessary medications. Implementation of NHCC is a process that does not result in immediate changes, and likely requires at least 1 year to detect changes, with some elements, such as open dining, needing considerably longer. Thus, use of reliability estimates, such as test-retest reliability, may continue to demonstrate stability for some time after adoption of NHCC. At this time, the current authors do not recommend development of a new instrument to measure the impact of NHCC on facility, resident, family, and staff outcomes. Rather, further psychometric testing and refinement of extant instruments, such as the KCCI that demonstrated evidence of reliability and content and construct validity, is suggested.

The current review used the six components of NHCC proposed by an expert panel more than 10 years ago (Colorado Foundation for Medical Care, 2006). Given some of

the challenges identified in mapping these six components to the NHCC measurement tools for this review, and the maturation of NHCC in the past 10 years, further definitional work of NHCC may be necessary to guide the use and development of tools to measure NHCC. This work may include revisiting the six components and associated practices of NHCC to gain consensus on the definition and operationalization.

Additional recommendations include investigating the validity and reliability of the most promising instruments and moving from proxy measures to directly measuring NHCC, even if additional application and psychometric testing of these tools are needed. According to Shier et al. (2014), proxy measures are often used as an indicator of NHCC. For example, in multiple studies, improvement in resident mood or behavior was identified as an indicator of close relationships and resident direction (Brooker, Woolley, & Lee, 2007; Crogan, Alvine, & Pasvogel, 2006; Robinson & Rosher, 2006). However, these indicators do little to measure the extent of NHCC implementation. In addition, how well such indicators correlate with direct measures of NHCC is unknown. Although NHCC is complex and difficult to measure, further evaluation is needed to determine the effect of NHCC implementation on outcomes.

Measurement of NHCC is necessary to evaluate the impact of NHCC on resident, staff, and organizational outcomes and provide evidence to guide nursing homes in the implementation of NHCC. This measurement is also needed to inform policymakers and regulatory agencies to support and move forward those elements of NHCC that positively influence the quality of life and care for nursing home residents.

A potential limitation of a systematic review is the omission of relevant articles or instruments. Hand searching of reference lists and consultation with experts in the field were performed to identify all relevant instruments and articles.

CONCLUSION

The current systematic review provided detailed information on instruments to measure NHCC. Results revealed 10 instruments available to measure NHCC on an organizational level. The lack of detailed description of development hinders assessment of many of the instruments, and studies exploring the relationship between NHCC implementation and resident, staff, and organizational outcomes are rare. Further testing of the most promising instruments is needed to determine the ability of these instruments to monitor changes in NHCC and the effect of NHCC implementation on outcomes.

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Table A

Specific Practices Relating to the Culture Change Constructs

Resident-Directed Care and Activities

1. Restoring dining choices
 - a. Family dining, home style dining, buffet dining available
 - b. Resident choice in what and when they eat
 - c. Resident access to snacks and/or refrigerator
2. Providing options for bathing
 - a. Resident choice in when they bathe
 - b. Bathing alternatives are offered
3. Assisting residents in determining their own daily schedules and care plans
 - a. Resident choice in waking times and bedtimes
 - b. Individualized resident schedules for all daily activities
 - c. Residents can make important decisions affecting their daily lives
 - d. Residents are involved in the own care plan discussions
4. Promoting all remaining capacities for self-care and mobility
 - a. Staff supports resident choice, control, goals and preferred routines
 - b. Residents are empowered
 - c. Appropriate assistive devices are available and/or accessible

Home Environment

1. Redesigning resident rooms for privacy, personalization and individual needs
 - a. Residents have privacy
 - b. Residents rooms are personalized
2. Introducing plants, pets, children, and surroundings that are reminiscent of past lives
 - a. Facility has dogs, cats, birds, fish and/or other pets
 - b. Facility has plants
 - c. Children are involved with the residents on a regular basis
3. Redesigning public and outdoor living spaces for stimulation and activity
 - a. Public areas have appropriate assistive devices available and /or accessible
 - b. Community and outdoor spaces are available, safe and clean
 - c. Nursing stations have been deinstitutionalized
 - d. Overall environment feels like a home, not an institution
4. Developing neighborhoods or households with dedicated areas for dining and living
 - a. Residents live in smaller neighborhoods or households
 - b. Neighborhoods and households have multidisciplinary care teams

Specific Practices Relating to the Culture Change Constructs (cont.)

Relationships with Staff, Family, Resident and Community

1. Committing to consistent staffing
 - a. Consistent staff assignment to residents
 - b. Opportunities exist for developing close relationships between personnel, residents and family members
 - c. Staff members contribute to planning the assignments
2. Promoting a sense of community
 - a. Advisory councils, committees, learning circles and community meetings are held on a regular basis
 - b. Unstructured and spontaneous activities occur
 - c. Resident milestones, cultural events and rituals are celebrated
 - d. Community is invited, informed and involved
3. Including family members in decision making
 - a. Family members are involved in meetings, care-planning and family council
 - b. Family members participate in decision-making
 - c. Facility encourages visitation
4. Providing intergenerational and volunteer programs and activities
 - a. Intergenerational programs and activities are offered
 - b. Volunteer programs and activities are offered
 - c. Residents have access to community programs and other activities
 - d. Residents have access to additional services of their choice
5. Honoring death and dying with dignity
 - a. Residents and staff are encouraged to participate in grieving and/or memorial services
 - b. Opportunities are offered to celebrate life of a resident who has passed

Staff Empowerment

1. Involving staff in care planning and care conferences
 - a. Staff involvement in care planning and care conferences
2. Enabling staff to handle scheduling
 - a. Staff participate in scheduling
3. Implementing cross-training for all staff levels
 - a. Cross-training of staff
4. Promoting staff development and empowerment
 - a. Career ladders and paths have been implemented
 - b. Staff receive training and have continuing education opportunities
 - c. Management encourages staff innovation and creativity

Specific Practices Relating to the Culture Change Constructs (cont.)

Collaborative and Decentralized Management

1. Developing self-managed work teams and encouraging teamwork
 - a. Facility operates within a “flattened” organizational structure
 - b. Decisions are made by multidisciplinary care teams
 - c. Management encourages cooperation and teamwork
2. Modifying hiring and retention practices to promote staff satisfaction
 - a. Management demonstrates concern and appreciation for staff members by offering rewards such as recognition, bonuses, awards, incentives, etc.
 - b. Staff members are satisfied
 - c. Staff members are involved with the recruitment, orientation and mentoring of new staff
3. Promoting strong leadership qualities among management
 - a. Maintenance of necessary records and documentation
 - b. Visibility, approachability, honesty and fairness of management
 - c. Management involvement in responsibilities beyond primary roles
4. Promoting open communication at all levels
 - a. Management encourages input from staff, residents, and family
 - b. Management provides information and feedback to staff, residents and family
 - c. Job expectations are clearly understood by all staff members
5. Conveying the mission, vision and direction of culture change
 - a. Organizational mission, vision and direction reflects commitment to culture change
 - b. Staff members are aware and informed of the mission, vision and direction
 - c. Management serves as a role model for culture change

Measurement-Based CQI Processes

1. Monitoring and evaluating quality of care and services
 - a. Quality of care and services is monitored and evaluated
 - b. Staff involvement in quality improvement efforts
 - c. Satisfaction surveys are conducted and analyzed
2. Monitoring staff turnover and longevity
 - a. Staff turnover and longevity is monitored and evaluated
3. Monitoring financial information
 - c. Budgets and financial management are monitored and evaluated
 - d. Sufficient and appropriate resources are allocated
 - e. Staff involvement in purchasing decisions, budgets and financial management

(Colorado Foundation for Medical Care, 2006)