Mapping the organizational culture research in nursing: a literature review

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Accepted for publication 5 June 2006

Aim. This paper reports a critical review of nursing organizational culture research studies with the objectives of: (1) reviewing theoretical and methodological characteristics of the studies and (2) drawing inferences specific to the state of knowledge in this field.

Background. Organizational culture is regarded as significant in influencing research use in clinical practice yet it is not understood how culture shapes practitioners’ behaviours. Only one review of this empirical literature in nursing has been completed.

Method. Using selected computerized databases, published nursing research studies in English that examine organizational culture were accessed. Organizational culture studies were categorized using Hatch’s three perspectives on organizational culture: (1) modern, (2) symbolic-interpretive and (3) postmodern. The review was conducted in 2005.

Results. Twenty-nine studies were in the final data set. Results pointed to variations in cultural definitions and incorporation of organizational sciences theory. In classifying the studies, modern perspectives dominated (n = 22), symbolic-interpretive approaches were an emerging group (n = 6) and one study was unclassifiable. Our results expand current cultural instrument reviews by pinpointing tools that have been previously overlooked and by identifying ongoing theoretical and methodological challenges for researchers.

Conclusion. An exclusive reliance on modernistic approaches in organizational culture research cannot yield a complete understanding of the phenomenon. Rather, the field could benefit from a variety of cultural approaches. In a similar vein, researchers need to be mindful of the terminology and the unit of analysis they use in their research, as these are the two largest research challenges.

Keywords: literature review, nursing, organizational behaviour, organizational culture, research utilization
Today’s healthcare professionals face demands for increased accountability and transparency in their decision-making at clinical practice and policy levels. This demand is justifiable given that at least 30–40% of patients do not receive care premised on current scientific evidence and that 20% or more of health care provided is not needed or potentially harmful to patients (Grol & Grimshaw 2003). The use of research in clinical practice is often suggested as a mechanism to enhance transparency in decision-making, to overcome unwanted variation in individual clinician decision-making and to improve patient and system outcomes (Sackett et al. 1996). While using research in practice is often proposed as a solution, statistics such as those cited above suggest a gap between optimal practice recommendations (research) and what is actually done in health care (practice). This theory–practice gap is essentially a failure of implementation, that is, a failure to implement research in practice (Allmark 1995, Fealey 1997, 1999). Overcoming the challenges of implementation requires a detailed understanding of several factors including individual practitioner hurdles, the context where decisions are made and the barriers to change (Grol 1997).

The nursing discipline has a rich 30-year history in research utilization (Estabrooks et al. 2004a,b). However, despite this history, scholars remain uncertain as to what influences research utilization. Until recently, the bulk of the scholarly effort in nursing was invested in attempting to understand research utilization influences at the individual level rather than at the organizational level. A systematic review of individual determinants of research utilization (e.g. Estabrooks et al. 2003) found little consistency in research findings regarding which individual factors predicted research use. Further, when individual determinants have been studied, investigators have frequently studied determinants that are not amenable to change (e.g. age, gender, years of nursing experience). Shifting focus towards studying organizational determinants of research utilization is important given that the majority of healthcare professionals work in complex organizations. Yet, relatively little is known about organizational influence on providers’ behaviours, in particular, research use behaviours. However, in nursing one organizational aspect, organizational culture, is increasingly cited as a significant influence on the use of research by clinicians (Kinnunen 1988, 1996, Stiefel 1996, Kitson et al. 1998).

As part of an ongoing programme examining the determinants of research utilization for nurses, we undertook a review of nursing organizational culture studies to determine the state of the science of this body of literature. The overarching objectives of this study were to: (1) review theoretical and methodological characteristics of the studies and (2) draw inferences specific to the state of knowledge in this field.

What is organizational culture?

Organizational culture is not consistently described in the literature. Multiple definitions of organizational culture exist with many of them centring on enduring attributes of culture such as values, assumptions and beliefs. Organizational culture gives a sense of what is valued and how things should be done within the organization. It can be thought of as the ‘normative glue’ in organizations that preserves and strengthens the group through maintaining equilibrium (Sleutel 2000). Also it is a sense-making and control mechanism that guides and shapes the behaviour and attitudes of an organization’s members (Weick 1995, Robbins 1996). Rooted in anthropology, the concept of culture goes back centuries. Organizational culture research can be traced back to the 1930s (Trice & Beyer 1993). The concept began to receive serious attention in the organizational sciences in the 1980s in response to works by Peters and Waterman (1982) and Ouchi (1981). These scholars began linking culture with organizational performance and outcomes. In nursing, the term organizational culture first appeared in 1986 (Del Bueno & Vincent 1986).

There are a limited number of organizational culture frameworks in the literature. One of the more commonly cited frameworks is that of Schein (1992). In Schein’s framework, culture manifests itself at three fundamental levels, represented in a hierarchical fashion: (1) observable artefacts, (2) values and (3) basic underlying assumptions. Artefacts, the most accessible elements of culture, are tangible or visible aspects of cultures. Values are the explicitly articulated norms, social principles and ideologies considered to have intrinsic worth and importance within the organization. And finally, assumptions, the deepest level or core elements of culture, provide expectations that influence perceptions, thoughts and feelings about the organization. Assumptions are the taken-for-granted beliefs about reality and human nature that practitioners in an organization share. In Schein’s view artefacts are manifestations of values, while values are manifestations of assumptions. The three levels constantly shape each other in an iterative process. Other conceptual frameworks of organizational culture include the works of Hatch (1993) and Trice and Beyer (1993) amongst others.

Previous reviews

We located only one review in nursing of organizational culture research (i.e. Mark 1996) and two papers specific to reviewing organizational culture instruments used in nursing and health services research (i.e. Scott et al. 2003, Gershon...
et al. 2004). In Mark’s (1996) review paper she: (1) discussed the theoretical culture literature from the perspective of the organizational sciences, (2) reviewed the empirical studies in nursing and in health services research, (3) examined methodological and conceptual issues in organizational culture research and (4) made suggestions for future organizational culture research. In 1996 she included 12 studies – eight studies in nursing, four outside of nursing. Our review updates Mark’s review and demonstrates increasing developments in this field of research.

Search methods

Search strategy

First, we searched CINAHL, Medline, Health Star, ABI inform and Psychinfo (see Figure 1). Dissertations and ‘grey literature’ (e.g. conference proceedings) were not included in the search strategy. Our experience has been that exhaustive searching for grey literature yields relatively little material of relevance, while incurring significant investments of time and money. Grey literature is relatively inaccessible to researchers and practitioners and, therefore we argue, has less impact than published studies. Furthermore, as we are not doing meta-analysis, we are not concerned with inflating effect sizes by virtue of only including published research studies.

Inclusion criteria

We reviewed published articles in English that examined organizational culture. We re-ran our searches without restricting to English and found few non-English titles. Using CINAHL as an example, when we compared the two searches, 97% of the papers were captured in the search limited to English only, suggesting limited bias when searching with English only as an inclusion criterion.

We made no restriction in the research design of the articles included. The search strategy generated over 6500 titles and abstracts. The first author electronically assessed the titles and abstracts (when available) using preliminary inclusion criteria. A high number of non-applicable papers resulted from our broad search terms. Many non-applicable papers focused on such topics as cultural diversity, transcultural workplaces and opinion pieces on how to create a specific type of organizational culture (i.e. how to create a culture of safety). These papers were not relevant to this review.

Using the preliminary inclusion criteria, 108 articles were identified. After removal of duplicates, 92 articles remained for the full inclusion/exclusion screening process. The results of this process are illustrated in Figure 2. All 92 articles were successfully retrieved.

Screening and data extraction

The final inclusion screening was guided by three inclusion criteria: (1) the report of an original research study, (2) a study focus on nurses in a particular context and (3) a conceptualization of culture that included at least one of three indicators of organizational culture. The three indicators for organizational culture were created from Martin’s general conceptualization of culture. Specifically these


exp Organizational culture
exp work environment
organizational/organisational culture.mp OR
organizational/organisational climate.mp OR
organizational/organisational context.mp OR
organizational/organisational trait.mp OR
organizational/organizational environment.mp OR
organizational/organization environment.mp OR
work environment.mp OR
practice environment.mp OR
work culture.mp OR
AND
Nurs$ OR Nurs*

Figure 1 Search strategy for first search.
indicators were: (1) conveys a sense of values in the setting, (2) conveys a sense of how things should be done and (3) facilitates making 'sense' of activities in the setting. The final screening was completed by the first author.

Twenty-nine articles remained in the data set after the final screening. Table 1 outlines the reasons for exclusion and the frequencies with which studies were excluded from the final data set. The following data were extracted from the remaining studies: research design, setting, sample type, sample size, theoretical underpinnings, definitions of culture, cultural perspective, instruments used, unit of analysis and analytical procedures. Table 2 outlines the final set of included studies and their characteristics.

We categorized the remaining studies using Hatch’s (1997) three perspectives on organizational culture, namely: (1) modern, (2) symbolic-interpretive and (3) postmodern. In Table 3 we outline the differences among the perspectives. The modern view is premised on the belief that there is an objective, physical reality in question. Investigators who subscribe to the modern perspective, view culture as a variable that can be modified. In contrast, investigators who ascribe to symbolic-interpretive and postmodern perspectives propose that no single objective reality exists; rather, reality is socially and subjectively constructed. Consequently, multiple truths are accepted. This group of investigators generally views culture as a metaphor or as a way of understanding the organization. Symbolic-interpretive researchers are concerned with understanding how organizational realities or multiple truths are socially constructed (Hatch 1997) whereas postmodern researchers focus on the ways in which cultures are ambiguous, inconsistent and in a constant state of flux.

**Results**

**Descriptive findings of studies (n = 29)**

**Productivity and journal venues**
The *Journal of Nursing Administration (n = 12)* was the most common venue for studies included in our data set with scholars from the United States of America (USA) (n = 20) the most prominent authors. When the number of research publications is compared to the eight nursing studies in Mark's (1996) review, we are able to see substantial growth in the field.
<table>
<thead>
<tr>
<th>Author and year</th>
<th>Journal</th>
<th>Subjects</th>
<th>Definition of organizational culture</th>
<th>Theoretical influences</th>
<th>Culture instrument</th>
<th>Other factors studied</th>
<th>Methods approach (a) and unit of analysis (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond and Fiedler (1998)</td>
<td>Journal of Nursing Administration</td>
<td>Staff, family members, hospital leaders</td>
<td>'a unique set of shared attitudes, norms and behaviours'</td>
<td>Not specified</td>
<td>Self-developed</td>
<td>NA</td>
<td>(a) Quantitative (b) Group</td>
</tr>
<tr>
<td>Coeling and Wilcox (1990)</td>
<td>American Nephrology Nurses' Association (ANNA)</td>
<td>Nurses</td>
<td>'a set of solutions devised by a group of people to meet specific problems posed by the situations they face in common'</td>
<td>Van Maanen and Barley (1985)</td>
<td>NA</td>
<td>Change process</td>
<td>(a) Qualitative (b) Unit</td>
</tr>
<tr>
<td>Coeling and Wilcox (1988)</td>
<td>Journal of Nursing Administration</td>
<td>Nurses</td>
<td>'a set of solutions devised by a group of people to meet specific problems posed by the situations they face in common'</td>
<td>Van Maanen and Barley (1985)</td>
<td>NA</td>
<td>Nursing admin decisions</td>
<td>(a) Qualitative (b) Unit</td>
</tr>
<tr>
<td>Coeling and Simms (1993b)</td>
<td>Journal of Nursing Administration (part ii)</td>
<td>Nurses</td>
<td>'culture is the pattern of behaviours developed by groups to solve work related problems and survive in their job'</td>
<td>Van Maanen and Barley (1985)</td>
<td>Nursing Unit Cultural Assessment Tool (NUCAT)</td>
<td>NA</td>
<td>(a) Quantitative (b) Unit</td>
</tr>
<tr>
<td>Conway and McMillan (2002)</td>
<td>Nursing Leadership Forum Nursing Management</td>
<td>ICU nurses</td>
<td>Not specified</td>
<td>Not specified</td>
<td>NA</td>
<td>Staff morale, commitment</td>
<td>(a) Qualitative (b) Unit</td>
</tr>
<tr>
<td>Fleeger (1993)</td>
<td>Nursing Management</td>
<td>Nurses</td>
<td>'an amalgam of symbols, language, assumptions and behaviours that overtly manifest themselves in a setting'</td>
<td>Wilkins (Wilkins &amp; Ouchi 1983)</td>
<td>Adaptation of Harrison’s tool</td>
<td>NA</td>
<td>(a) Mix-method (b) Not specified</td>
</tr>
<tr>
<td>Gifford et al. (2002)</td>
<td>Journal of Healthcare Management</td>
<td>Unit staff</td>
<td>Not specified</td>
<td>Cameron and Quinn (1994)</td>
<td>Competing Values Framework</td>
<td>Quality of worklife</td>
<td>(a) Quantitative (b) Unit</td>
</tr>
<tr>
<td>Goodridge and Hack (1996)</td>
<td>Journal of Nursing Care Quality</td>
<td>Nurses (RN, LPN, NA)</td>
<td>'a pattern of shared basic assumptions that the group learned'</td>
<td>Schein (1992)</td>
<td>NUCAT-2*</td>
<td>NA</td>
<td>(a) Mix-methods (b) Group/programme</td>
</tr>
<tr>
<td>Grau and Wellin (1992)</td>
<td>Qualitative Health Research</td>
<td>Administration, social workers, recreational therapists, RN, LPN, NA</td>
<td>'fairly stable set of taken for granted assumptions, shared beliefs, meanings and values that form a type of backdrop for action in organizations'</td>
<td>Smircich (1983)</td>
<td>NA</td>
<td>External regulatory controls</td>
<td>(a) Qualitative (b) Unit</td>
</tr>
<tr>
<td>Author and year</td>
<td>Journal</td>
<td>Subjects</td>
<td>Definition of organizational culture</td>
<td>Theoretical influences</td>
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<tr>
<td>Grzyb-Wysocki and Enriquez (1996)</td>
<td>Seminar for Nursing Management</td>
<td>Not specified</td>
<td>‘the mix of values, beliefs, meanings, and expectations the members of a particular organization hold in common’</td>
<td>Deal et al. (1983)</td>
<td>Cultural Assessment Survey</td>
<td>Patient-care restructuring</td>
<td>(a) Mix-methods</td>
</tr>
<tr>
<td>Hawks (1999)</td>
<td>Nursing Outlook</td>
<td>Nursing faculty</td>
<td>‘the assumptions, values, beliefs, expectations, principles, and behaviours shared by members of an organization’</td>
<td>Schein (1992)</td>
<td>Survey of Organization Culture</td>
<td>Empowering teaching behaviours</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td>Ingersoll et al. (2000)</td>
<td>Journal of Nursing Administration</td>
<td>Nursing, administrative and ancillary support</td>
<td>‘ways of thinking, behaviour and believing that members have in common’</td>
<td>Sociotechnical systems theory</td>
<td>Organizational Culture Inventory (OCI)</td>
<td>Organizational commitment &amp; readiness</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td>Jones et al. (1997)</td>
<td>Nursing Economics</td>
<td>Caregivers, personnel in other departments involved in patient care (e.g. pharmacy)</td>
<td>‘Deep underlying assumptions and beliefs that are shared by members of an organization and that operate unconsciously’</td>
<td>Schein (1992)</td>
<td>Competing Values Frame work</td>
<td>Patient-focused care implementation</td>
<td>(b) Group/unit</td>
</tr>
<tr>
<td>Kangas et al. (1999)</td>
<td>Journal of Nursing Administration</td>
<td>Nurses and patients</td>
<td>Not explicit definition, however organizational culture used interchangeably with work environment</td>
<td>Magnet hospital work, McClure et al. (1983)</td>
<td>Organizational Culture Index</td>
<td>Organizational structure</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td>Luk et al. (1998)</td>
<td>Hong Kong Nursing Journal</td>
<td>Nurses, physicians, administration, allied health, support staff</td>
<td>‘the ways of thinking, behaving, and believing shared by members of an organization’</td>
<td>Harrison (1972); Schein (1992)</td>
<td>Adaptation of Harrison’s (1992) tool</td>
<td>NA</td>
<td>(b) Group</td>
</tr>
<tr>
<td>Manley (2000)</td>
<td>Nursing Standard; Nursing in Critical Care</td>
<td>Unit staff</td>
<td>organizations are cultures; organizational culture is the shared values and beliefs</td>
<td>Brown (1998)</td>
<td>NA</td>
<td>Consultant nurse post</td>
<td>(a) Qualitative</td>
</tr>
<tr>
<td>McDaniel (1995)</td>
<td>Journal of Nursing Administration</td>
<td>Staff nurses and managers</td>
<td>‘ways of thinking, behaving and believing that members have in common’</td>
<td>Cooke and Lafferty (1989)</td>
<td>OCI</td>
<td>Ethics, work satisfaction</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td>McDaniel and Stumpf (1993)</td>
<td>Journal of Nursing Administration</td>
<td>Staff nurses and managers</td>
<td>‘ways of thinking, behaving and believing that members have in common’</td>
<td>Cooke and Lafferty (1989)</td>
<td>OCI</td>
<td>NA</td>
<td>(b) Group</td>
</tr>
<tr>
<td>Author and year</td>
<td>Journal</td>
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<td>Definition of organizational culture</td>
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<tr>
<td>Newman et al.</td>
<td>Evidence Based Nursing</td>
<td>Unit staff</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Evidence-based practice</td>
<td>(a) Unclear</td>
</tr>
<tr>
<td>(2000)</td>
<td>Nursing Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Not specified</td>
<td>(b) Not specified</td>
</tr>
<tr>
<td>Rizzo et al.</td>
<td>Journal of Nursing</td>
<td>Nurses</td>
<td>Patterns of behaviour</td>
<td>Coeling and Simms (1993a,b)</td>
<td>NUCAT</td>
<td>NA</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td>(1994)</td>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Unit</td>
<td>(b) Unit</td>
</tr>
<tr>
<td>Seago (1996a)</td>
<td>Journal of Nursing</td>
<td>Nurse managers and administrators</td>
<td>'the shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes, and norms that knit a community together'</td>
<td>Kilmann et al. (1985)</td>
<td>Self-developed</td>
<td>Troubled work groups</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td></td>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Individual</td>
<td>(b) Individual</td>
</tr>
<tr>
<td>Seago (2000)</td>
<td>Journal of Nursing</td>
<td>All staff in adult med/surg units</td>
<td>'the shared norms and expectations that guide the thinking and behaviour of the group members'</td>
<td>Cooke and Rousseau (1988)</td>
<td>OCI</td>
<td>Job position &amp; behaviour styles</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td></td>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Individual</td>
<td>(b) Individual</td>
</tr>
<tr>
<td>Seago (1996b)</td>
<td>Journal of Nursing</td>
<td>Nurses</td>
<td>'Pattern of shared values and assumptions that are demonstrated by the behaviours of the group developed over time to solve problems'</td>
<td>Coeling &amp; Simms (1993a), Schein (1992)</td>
<td>OCI</td>
<td>Workplace stress, nursing unit outcomes</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td></td>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Unit</td>
<td>(b) Unit</td>
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<tr>
<td>Tseng et al.</td>
<td>International Journal of Nursing Studies</td>
<td>Nurses</td>
<td>'a set of shared beliefs, values and norms about the ways things should be done in an organization'</td>
<td>Braskamp and Maehr (1985)</td>
<td>Nurse Assessment Survey</td>
<td>Job satisfaction</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td>(2002)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Unit</td>
<td>(b) Unit</td>
</tr>
<tr>
<td>Vandenberghde</td>
<td>Journal of Organizational</td>
<td>All professionals (physicians, nurses) and managers</td>
<td>Not specified</td>
<td>O'Reilly et al. (1991)</td>
<td>Organizational Culture Profile</td>
<td>Individual organizational fit</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td>(1999)</td>
<td>Behaviour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Organization</td>
<td>(b) Organization</td>
</tr>
<tr>
<td>Webb et al.</td>
<td>Journal of Nursing</td>
<td>Nurses and managers</td>
<td>'set of appropriate responses, devised by work group members to the situations they encounter as they work'</td>
<td>Coeling and Simms (1993a)</td>
<td>NUCAT-2</td>
<td>Authority &amp; responsibility</td>
<td>(a) Quantitative</td>
</tr>
<tr>
<td>(1996)</td>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Unit</td>
<td>(b) Unit</td>
</tr>
<tr>
<td>Wilson et al.</td>
<td>Journal of Advanced Nursing</td>
<td>Registered Nurses and Midwives</td>
<td>'the way things are done around here,' and encompasses a shared understanding of beliefs and actions (p. 28)</td>
<td>Cooke and Rousseau (1988)</td>
<td>Yes, staff satisfaction questionnaire (Traynor &amp; Wade 1993) and participant observation was used to 'measure organizational climate' (p. 30)</td>
<td>NA</td>
<td>(a) Mix-methods</td>
</tr>
<tr>
<td>(2005)</td>
<td>Nursing</td>
<td>Registered Nurses</td>
<td></td>
<td></td>
<td></td>
<td>(b) Unit</td>
<td>(b) Unit</td>
</tr>
<tr>
<td>Yamaguchi</td>
<td>Nursing and Health Sciences</td>
<td>Registered Nurses</td>
<td>'organizationaly relevant norms, beliefs and values shared by most employees' (p. 263)</td>
<td>Kotter (1978)</td>
<td>NA</td>
<td>NA</td>
<td>(a) Qualitative</td>
</tr>
<tr>
<td>(2004)</td>
<td>Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(b) Unit</td>
<td>(b) Unit</td>
</tr>
</tbody>
</table>

*NUCAT-2 is a revised version of NUCAT (Nursing Unit Cultural Assessment Tool).
In organizational culture research, the appropriate definition and treatment of the ‘unit of analysis’ is an important and complex methodological issue. The dilemma is that organizational culture can be conceptualized as a psychological variable with the data collected at the individual level or it can be understood as a group or organizational level variable. In the latter case, the individual level data are commonly aggregated to a higher (i.e. group, unit or organizational) level. The authors of studies included in this review analysed their data at different units of analysis (see Table 2). In six studies, the individual was the unit of analysis and in 20 studies, data were analysed at the group level (i.e. nursing unit or specialty group). The unit of analysis was ambiguous in three studies. In seven studies (i.e. Fleeger 1993, Grzyb-Wysocki & Enriquez 1996, Webb et al. 1996, Jones et al. 1997, Bond & Fiedler 1998), data were analysed at a higher level. In seven studies (i.e. Fleeger 1993, Grzyb-Wysocki & Enriquez 1996, Webb et al. 1996, Jones et al. 1997, Bond & Fiedler 1998), data were analysed at a higher level.

### Table 3: Three perspectives to study organizational culture: based on Hatch (1997)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>View 1 – modern*</th>
<th>View 2 – symbolic-interpretive¹</th>
<th>View 3 – postmodern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of organizational culture</td>
<td>‘culture is a variable to be manipulated to enhance the likelihood of achieving desired levels of performance from others within the organization’ (Hatch 1997, p. 231)</td>
<td>‘a context for meaning making and interpretation’ (Hatch 1997, p. 231)</td>
<td>Organizational culture within this tradition cannot be simply characterized as harmonious and shared or full of conflict. Rather, organizational members share some values, disagree about some and are unaware of others. Consensus, dissensus and confusion co-exist</td>
</tr>
<tr>
<td>Main assumption</td>
<td>Cultures are an attribute of organizations</td>
<td>Cultures are socially constructed realities; organizations are cultures and therefore cultures are contexts</td>
<td>Ambiguity is an inevitable aspect of organizational life</td>
</tr>
<tr>
<td>Epistemology</td>
<td>Take an objective stance to investigation</td>
<td>Cultural meaning can only be encountered and understood from within the cultural system</td>
<td>An acceptance of multiple truths and realities and of ambiguity</td>
</tr>
<tr>
<td>Focus</td>
<td>Organizations are viewed as concrete entities which can be revealed through objective, scientific research</td>
<td>Describing how organizational realities are socially constructed</td>
<td>Focuses on the ways in which organizational cultures are dynamic, ambiguous and inconsistent (Hatch &amp; Schultz 1997) as well as deconstructing the sense-making processes</td>
</tr>
<tr>
<td>Perspective</td>
<td>Emerges from that which is shared between colleagues in an organization</td>
<td>Entire systems of experiences and interpretations distributed across all the culture’s members</td>
<td>The boundary around an organizational culture is permeable and ambiguous. Understands organizations to be socially and discursively constructed not concrete entities</td>
</tr>
<tr>
<td>Goal</td>
<td>To develop generalized knowledge that can be applied across contexts</td>
<td>To formulate patterns which are recognizable to cultural members; to understand the particular organizational culture from the inside</td>
<td>To deconstruct reality to develop knowledge that is critical, interpretative, non-causal, plural and relational</td>
</tr>
<tr>
<td>Data focus</td>
<td>Organizational phenomena (e.g. artefacts, values and assumptions are some of the more common focuses for data collection)</td>
<td>Symbols which consist of both a tangible form and the associated wider meanings</td>
<td>Qualitative approaches used to give a multiplicity of interpretations of phenomena</td>
</tr>
<tr>
<td>Data collection approaches</td>
<td>Surveys, sometimes the supplementation of qualitative approaches. Only one interpretation given, as it is presumed that all members share the interpretation</td>
<td>Ethnographic methods</td>
<td>Multiple interpretations are given because the meaning is ambiguous and inconsistent</td>
</tr>
</tbody>
</table>

*Comparable to culture as variable approach (Smircich 1983).
¹Comparable to root metaphor perspective, or culture is something an organization is (Smircich 1983).

**Unit of analysis**

In organizational culture research, the appropriate definition and treatment of the ‘unit of analysis’ is an important and complex methodological issue. The dilemma is that organizational culture can be conceptualized as a psychological variable with the data collected at the individual level or it can be understood as a group or organizational level variable. In the latter case, the individual level data are commonly aggregated to a higher (i.e. group, unit or organizational) level. The authors of studies included in this review analysed their data at different units of analysis (see Table 2). In six studies, the individual was the unit of analysis and in 20 studies, data were analysed at the group level (i.e. nursing unit or specialty group). The unit of analysis was ambiguous in three studies. In seven studies (i.e. Fleeger 1993, Grzyb-Wysocki & Enriquez 1996, Webb et al. 1996, Jones et al. 1997, Bond & Fiedler 1998), data were analysed at a higher level.
Definition of sample
In 12 studies (Table 2) nurses constituted the study sample, unit staff was the sample in four projects. The term ‘unit staff’ was ambiguous as it did not identify what levels and types of nurses were included, and further if ancillary service workers including aids and unit clerks were involved. In 11 studies, the sample was nurses, managers and/or other healthcare professionals. One study examined nursing faculty members and in the last study, the sample subjects were not clearly identifiable.

Other factors studied
One of our objectives was to gain an understanding of the factors (e.g. research use, job satisfaction) studied in relation to organizational culture. Given that organizational culture has been frequently cited as an influence in healthcare professionals’ use of research in practice, we had a particular interest in determining if research use had been studied in any of these studies. Only one study assessed research use and organizational culture. In this action research study, Newman and colleagues (2000) investigated organizational systems and culture to support evidence-based practice. The investigators attempted to increase the systematic use of research by nurses in clinical practice. Action research, incorporating both quantitative and qualitative approaches, was used to explore how the organization and culture of practice could be developed to make evidence-based practice part of the ‘normal’ approach to practice. While they stated that organizational culture was primary to their investigation, they did not explain the influence of culture on nurses’ research use behaviours. The other 28 studies in this review investigated organizational culture and other factors such as nurse job satisfaction, patient satisfaction, organizational changes and nurse turnover.

Analytic findings of studies
Information on four dimensions was extracted from all articles: organizational culture definitions, theoretical underpinnings, cultural perspective and organizational culture instruments used.

Organizational culture definitions
The definitions of organizational culture used in the articles are found in Table 2. The definitions referred to something (e.g. values, norms, assumptions) held in common or shared by a group of people. The notion of a shared value structure was implicit in several of the definitions in our data set. Some of the articles used terms inconsistently, for instance, Kangas et al. (1999) used organizational culture and work environment interchangeably. Wilson et al. (2005) used the terms organizational culture and climate interchangeably, thereby sending a message that the two terms are synonymous.

Theoretical underpinnings
Investigators used theory from the organizational sciences. Schein’s (1992) work was the most frequently used (n = 6) theoretical perspective. He was among the first to develop a conceptual framework of organizational culture, and consequently his work has been widely used and cited. The work of Van Maanen and Barley (1985) (n = 3) on subgroup cultures and Cooke and Lafferty’s (1989) on cultural types were also used (n = 2). In four studies, the theoretical underpinnings were not specified and in the remaining 17 studies unique theoretical frameworks from within the nursing discipline (e.g. McClure et al. 1983) and beyond nursing (e.g. Braskamp & Maehr 1985, Smircich 1983, Brown 1998) were used.

Cultural perspective
The 29 studies were categorized using Hatch’s (1997) schemata (Table 3). The perspective of the research was implicit and therefore we had to infer perspectives based upon how the researchers had operationalized culture in their studies (i.e. by answering the following questions: What were the methods used? Was culture measured?). Twenty-two (76%) studies used a modern conceptualization. The study by Wilson et al. (2005) was categorized as having a modern conceptualization because while they understood organizations to be cultures and subsequently used both qualitative and quantitative approaches to data collection, they sought to measure organizational culture. The researchers in six studies (i.e. Coeling & Wilcox 1988, 1990, Grau & Wellin 1992, Manley 2000, Conway & McMillan 2002, Yamaguchi 2004) (21%) held a symbolic-interpretive perspective where they understood organizations to be cultures. These researchers immersed themselves in the setting under study to attempt to obtain an in-depth, multifaceted emic perspective of the setting. We were unable to determine the culture position for one study (Newman et al. 2000) because of limited explanations of methods and findings. None of the studies in our data set employed a postmodern perspective.
Integrative literature reviews and meta-analyses

it can be measured. Twenty-two studies (76%) measured culture (Table 2, culture instrument, column six). We could not determine if culture was measured in one study (Newman et al. 2000) and the remaining six articles used qualitative approaches. The tool used by Wilson et al. (2005) was not included in this table because they used a staff satisfaction questionnaire, rather than a culture instrument, however, they claimed to be ‘measuring’ culture by means of participant observation and the satisfaction instrument. An inventory of the culture instruments used in these studies is presented in Table 4. Our inventory demonstrates the development of cultural instruments within nursing (e.g. NUCAT, Nursing Assessment Cultural Assessment Tool; Coeling & Simms 1993a) and outside of the nursing discipline (e.g. Competing Values Framework, Cameron & Quinn 1994, Organizational Cultural Inventory, Cooke & Lafferty 1989).

Discussion

Our review ‘takes stock’ of this field of research and compares findings with the only other review in the organizational culture literature in nursing (Mark 1996). Our findings identify that there has been an increase in the quantity of organizational culture research in nursing, a move beyond an exclusive use of the modern or functionalist cultural perspective and a larger pool of cultural instruments than has been previously reported. We end by discussing the challenges for researchers studying organizational culture.

Taking stock

Using the findings from Mark’s (1996) review as a benchmark, our review demonstrates significant advances in organizational culture research in nursing. Comparing the number of studies in our review (n = 29) with Mark’s review (n = 12 studies in both health services and nursing research, eight studies in nursing) suggests solid progress over a 9-year period. Yet, considering the widespread interest in the topic of organizational culture as evidenced by the results from our initial search strategy (nearly 7000 hits) the number of empirical studies (n = 29) is small, suggesting much of the discussion about organizational culture is not based on research evidence.

Our findings also demonstrate that the research undertaken has become increasingly sophisticated. Mark’s findings suggested uniformity in perspective, specifically a functionalist perspective. Although in this review we chose to classify the perspectives that investigators used in their studies using Hatch’s framework (1997) given its currency in the organizational sciences, rather than Smircich’s (1983) approach (as used by Mark), strong parallels exist between the two approaches. In Table 3 we have transposed Smircich’s categorizations onto Hatch’s framework to illustrate the comparability between the approaches. Both Smircich (functionalist) and Hatch’s (modern) perspectives understand culture as a variable thereby implying that culture can be changed or modified. Our findings suggest that while the majority of empirical work in nursing still adopts a modern or functionalist perspective (implying an implicit ability to change the culture of an organization) an interpretive perspective is emerging.

In our review, 22 studies (76%) employed a modern perspective, that is, culture is something an organization has. Administering cultural surveys to healthcare professionals can be less burdensome, less expensive and less time-consuming compared to the intensive fieldwork that is demanded by symbolic-interpretive perspectives. However, from this body of literature it is unclear if researchers realize the implicit assumptions underlying the use of surveys to ‘measure’ culture. To take this perspective suggests that culture can be understood by means of an instrument score and that culture is a ‘variable’ or an element of an organization that is malleable and controllable. As we mentioned above, there are potential benefits to this perspective; however, we argue that exclusive reliance on this approach cannot yield a complete understanding of organizational culture.

It is encouraging to see the emergence of interpretive approaches in culture research. These approaches can capture the rich descriptions of organizational culture that functional perspectives miss. We are not proposing that interpretive approaches to cultural research are more applicable than other perspectives or that researchers in this field remain exclusive to one perspective or paradigm. In fact, we propose that the field could benefit from researchers using a variety of cultural views in combination. While there is evidence of an emerging acceptance of paradigm crossing (Schultz & Hatch 1996) in the broader organizational sciences, a sense of paradigm incommensurability (Burrell & Morgan 1979, Jackson & Carter 1991, 1993) or a general disapproval of scholars crossing paradigms (in this case changing cultural perspectives) lingers. A more complete discussion of the issue of paradigm crossing and incommensurability is beyond the scope of this review paper, yet we believe the co-existence of various cultural views in nursing will benefit knowledge development in the field and potentially generate new types of understanding.
<table>
<thead>
<tr>
<th>Tool and tool development</th>
<th>Frequency</th>
<th>Description of tool and example of instrument items</th>
<th>Psychometric properties of instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competing Values Framework, CVF (Cameron &amp; Quinn 1994)</td>
<td>Two articles (e.g. Jones et al. 1997, Gifford et al. 2002)</td>
<td>Adopts a typological approach for understanding an organization’s culture. A four-cell model of value systems (clan, adhocracy, hierarchy, market) within two axes, reflecting different value orientations: (1) organization’s focus – internal or external environment, (2) organization’s structure – preference for flexibility or control. Five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Item example: My institution is a very formal and structured place. People pay attention to procedures to get things done.</td>
<td>Robustness of tool: internal consistency using Cronbach’s alpha, 0.9357 (Jones et al. 1997)</td>
</tr>
<tr>
<td>Cultural Assessment Survey, CAS (Murdaugh 1994)</td>
<td>One article (e.g. Grzyb-Wysocki &amp; Enriquez 1996)</td>
<td>Examines environment, values and heroes. The CAS is based on the writings of: Deal &amp; Kennedy and del Bueno and Freund. The measurement scale includes seven open-ended questions that facilitate individual responses. Content analysis is used to analyse the data. Instrument item examples: Describe the person who ‘fits in’ on this unit. Describe how people work together on this unit.</td>
<td>Robustness: not reported</td>
</tr>
<tr>
<td>Harrison’s Organizational Culture Survey, HOCS (Harrison 1972, 1985)</td>
<td>Two articles (e.g. Fleeger 1993, Luk et al. 1998)</td>
<td>The questionnaire consists of 15 items to assess staff’s perception of the culture in terms of: (1) power, (2) role, (3) task/achievement, (4) person/support. For each statement the respondent ranks four statements in each item in terms of how representative they are of: (1) the organization and (2) the respondents own preferred organizational culture. The instrument is designed to diagnose organizational ideology. Instrument item examples: not available</td>
<td>Robustness: good face validity (Scott et al. 2003)</td>
</tr>
<tr>
<td>Nursing Unit Cultural Assessment Tool, NUCAT (Coeling &amp; Simms 1993a)</td>
<td>Four articles (e.g. Coeling &amp; Simms 1993b, Rizzo et al. 1994, Goodridge &amp; Hack 1996, Webb et al. 1996)</td>
<td>Consists of 50 (NUCAT-2 and NUCAT-3) or 55 (NUCAT) different cultural behaviours that are indicators of behaviours that are important to practicing nurses and that differ between units. Using a four- (NUCAT-2), five- (NUCAT-3) or six-point (NUCAT) Likert scale respondents rate behaviours that they prefer vs. those they believe occur typically on their unit*. Instrument item examples: How important is it to work in an efficient manner? How acceptable is it to compete with your co-workers?</td>
<td>Robustness: validity established through qualitative and quantitative studies (Coeling &amp; Wilcox 1988)</td>
</tr>
<tr>
<td>OCI: Organizational Culture Inventory (Cooke &amp; Lafferty 1989)</td>
<td>Four articles (e.g. McDaniel &amp; Stumpf 1993, McDaniel 1995, Seago 1996b, Ingersoll et al. 2000, Seago 2000)</td>
<td>The OCI is a 120-item survey instrument that is used to profile three culture-type composites (constructive, passive-defensive, aggressive-defensive) based on 12 distinct yet inter-related, interpersonal and task-related styles. The OCI is designed to be used in a variety of business organizations. It was not specifically designed for healthcare environments. Items are scored on a five-point scale (1 = not at all to 5 = to a very great extent). Instrument item examples: due to copyright cannot cite specific item examples</td>
<td>Robustness: 0.67–0.94 (internal consistency scores for subscales) (Cooke &amp; Rousseau 1988)</td>
</tr>
</tbody>
</table>
Extending current cultural measurement reviews

The findings of our review expand previous reviews of culture instruments and identify instruments previously not reported (Table 4). We located eight different culture instruments in nursing (as well as two self-developed instruments), while previous reviews (Scott et al. 2003, Gershon et al. 2004) located two (within nursing) and nine instruments outside of nursing. Our findings extend both works by highlighting instruments that are not included in these reviews (e.g.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Survey of Organizational Culture, SOC (Tucker et al. 1990)</td>
<td>One article (e.g. Hawks 1999)</td>
<td>Fifty-five-item scale that measures organizational culture as 13 subscale scores (e.g. impact of mission, decision making/autonomy). Responses to each item are measured on a five-point Likert scale (ranging from strongly disagree to strongly agree) Instrument item examples: not available</td>
<td>Robustness: reliability measured by alpha coefficient values ranges from 0.62 to 0.90 (Tucker et al. 1990)</td>
</tr>
<tr>
<td>Organizational Culture Index, OCI (Wallach 1983)</td>
<td>One article (e.g. Kangas et al. 1999)</td>
<td>The Organizational Culture Index was developed by Wallach (Wallach 1983). The index categorizes organizational culture into three dimensions: bureaucratic, innovative and supportive cultures. The index has 24 items divided into three subscales (one per dimension), each subscale has eight items and are answered on a four-point Likert scale (0 = does not describe my unit, 3 = describes my unit most of the time). The dimension with the highest score is considered to be the dominant dimension for that environment Instrument item examples: not available</td>
<td>Robustness: subscale alpha coefficients from 0.75 to 0.91 (Koberg &amp; Chusmi 1987)</td>
</tr>
<tr>
<td>Self-developed tools</td>
<td>Two articles (e.g. Seago 1996a, Bond &amp; Fiedler 1998)</td>
<td>Bond and Fiedler (1998) developed a series of scales to describe the organizational culture. The tools measured: (1) organizational culture, (2) team performance and (3) staff encouragement Seago (1996a): a list of 25 characteristics of troubled work group cultures that respondents answered dichotomously (present or not present). The items were developed from the literature and from the author’s previous work</td>
<td>Robustness: not reported Robustness: not reported</td>
</tr>
<tr>
<td>Nurse Assessment Survey, NAS (Maehr &amp; Braskamp 1986)</td>
<td>Two articles (e.g. Manojlovich &amp; Ketefian 2002, Tzeng et al. 2002)</td>
<td>The Nurse Assessment Survey was developed using personal investment theory as a theoretical foundation. The instrument consists of 91 items and 11 scales presented in a five-point Likert design. The scales were designed to collect meaningful information on nurses’ perceptions, attitudes and culture within a hospital setting. The culture measure consists of five subscales: (1) accomplishment, (2) affiliation, (3) power, (4) recognition and (5) strength of culture Item example: Around here, we’re encouraged to try new things Power and influence count a lot around here</td>
<td>Robustness of culture subscales: 0.51–0.87 (Braskamp &amp; Maehr 1985)</td>
</tr>
<tr>
<td>Organizational Culture Profile, OCP (O’Reilly et al. 1991)</td>
<td>One article (e.g. Vandenberghhe 1999)</td>
<td>The OCP is composed of 54 values and can be used to provide overall value profiles of organizations or individuals. The OCP is based on Q-sort methodology; respondents sort items into nine categories ranging from the least to the most characteristic of their organization Instrument item examples: an emphasis on quality, fairness and decisiveness</td>
<td>Robustness: the average reliability coefficient 0.88 (O’Reilly et al. 1991)</td>
</tr>
</tbody>
</table>

*Details of the NUCAT development were received from its developer, Dr Harriet Coeling (April 5, 2005).
What is already known about this topic

• Organizational culture is increasingly cited as a significant influence on the use of research by clinicians, but little is known about the process through which this occurs.
• To date, there has only been one published review of organizational culture research in nursing, and that was conducted prior to growing interest in and reference to the concept.

What this paper adds

• There have been significant advances in both quantity and epistemological sophistication in organizational culture research in nursing.
• Identification of previously absent instruments measuring organizational culture.
• Despite advancements, there remain methodological and conceptual challenges for researchers.

Cultural Assessment Survey, Murdaugh 1994, Nurse Assessment Survey, Maehr & Braskamp 1986; Organizational Culture Profile, O’Reilly et al. 1991. Gershon et al. (2004) report on 12 instruments available to measure organizational culture and climate, yet upon critical examination, only two of the tools (i.e. Organizational Culture Index and Organizational Culture Inventory) were specific to organizational culture. The other 10 instruments that Gershon et al. (2004) examine are specific to measuring climate, for instance, the Organizational Climate Questionnaire (Litwin & Stringer 1968), the Organizational Climate Measure (Wallace et al. 1975) and Work Climate Survey (Deci et al. 1989). Furthermore, the work of Scott et al. (2003) focuses more broadly on instruments available to measure culture in healthcare settings and fails to identify three instruments that have been used in nursing studies.

Future organizational culture research

Development of theory

Nursing scholars researching organizational culture have been heavily influenced by organizational science theory. While the practice of incorporating theory from other disciplines is reasonable and efficient, it limits the development of discipline-specific theory and contribution to broader knowledge development. This body of research is a case in point as the majority of studies lack the explication of a theoretical framework and are descriptive and context specific, thus limiting the ability of investigators to use the studies’ findings to contribute to broader knowledge development. This is not to suggest that using theory from the organizational sciences precludes the development of relevant nursing theory or that organizational culture theory is best developed by nurses, but rather the contrary.

We argue that the conventional nature and structure of nurses’ work in institutional acute care settings offers an optimal opportunity to investigate organizational culture and to contribute to development of organizational culture theory. In these environments, nurses with similar preparation work in groups in various nursing units. This structure yields an ideal ground for research into subgroup culture (at the nursing unit level), as these groups are situated within a larger institutional setting.

While we found increasing growth and development in culture research in nursing, we also found evidence of two challenges facing researchers in this area, namely conceptual ambiguity and unit of analysis challenges.

Conceptual ambiguity

One of the largest challenges in this literature is the nomenclature used. Sleutel (2000) draws attention to the host of terms used in this field, terms such as practice environment, work environment, work culture and organizational culture. In many cases, researchers fail to define or consistently define these concepts leaving the reader unclear as to how the work ‘fits’ into existing nursing knowledge. Our findings demonstrate continued inconsistent and imprecise use of terms such as using organizational climate and culture interchangeably. We also found that the term ‘culture’ is frequently used, and in many cases overused, to make reference to the ‘softer’ or less tangible features of an organization (i.e. identity, values) as compared to the ‘harder’ aspects of the organization such as structure. While terminology precision would facilitate the comparison of studies and potentially the sequential development of ideas within this field this demand is impractical, particularly with the increasing use of interpretive approaches.

The unit of analysis

The appropriate unit of analysis is a crucial issue in organizational research as in many cases the focal unit of interest is a group, unit or organization. In the case of organizational culture research, the dilemma is that the variable of interest, culture, is often measured at the individual level. In other words, individuals are asked for their perceptions about the culture of their workplace. This results in differing levels of data measurement and analysis that is, data is collected at the individual level, but the analysis takes place at the group level.

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as culture is a collective phenomenon (an acceptable approach if defensible aggregation processes are used). In order to aggregate individual data to a group level, correspondence is needed among the cultural definition, the level of data collection (e.g. individual, group, unit, hospital) and the data analysis to ensure methodological congruence. In six studies, data were reported at the individual level yet organizational culture is a group or collective phenomenon. An individual-level analysis fails to account for the collective group effects that a group or organizational analysis captures (Sellin 1990) – in organizational culture research grasping the collective effects is fundamental to ‘doing’ culture research. Furthermore, in two of these studies (i.e. Bond & Fiedler 1998, Kangas et al. 1999), investigators collected and analysed data at an individual level but then made generalizations at a group level, otherwise known as an ecological fallacy. The problem in this case is that the process of aggregating data may conceal the variations in the data (Shortell et al. 2000, Scott et al. 2003). In other words, assumptions made about individuals based on aggregate data may be vulnerable to the ecological fallacy and need to be interpreted with caution.

An associated challenge is that when researchers do aggregate individual level data to a ‘higher’ (i.e. organizational) level, the method of doing so is not described. The usual method of data in these types of situations is to aggregate individual level response to a value more representative of the group, in many cases this translates into taking the mean value of the individual responses. However, if there are extremes in the individual level data, averages do not capture the essence of the within-group variability (Verran et al. 1992, 1995). Therefore, investigators need to demonstrate that a variable measured at one level (individual) is functionally equivalent when aggregated to a higher level (Verran et al. 1992). The unit of analysis challenge has two components. First, the level of data collection and second, the processes used to aggregate data. The two questions that researchers must ask themselves are: (1) how confident are they that the individually collected data is functionally similar when aggregated to a higher level and (2) are the results meaningful after data aggregation? In organizational culture research, both issues need to be addressed.

Conclusions

The current evidence-based healthcare climate demands increased research use by healthcare professionals. Yet, we do not fully understand how research is used, what shapes its use, and how its use can be increased. Our findings from this review suggest that an exclusive reliance on modern perspectives to organizational culture research cannot yield a complete understanding of the phenomenon. Therefore, we recommend that the field would benefit from a variety of perspectives to organizational culture research. As well, researchers need to consider the implications of their research approaches. That is, specific and detailed information about the culture of an organization or a work place cannot be captured and understood by means of an instrument. Furthermore, we recommend that researchers conducting organizational culture investigations need to be mindful of both the terminology and the unit of analysis they use in their research as these decisions have significant consequences to the research results.

Author contributions

SSF and CE were responsible for the study conception and design and SSF was responsible for drafting of the manuscript. SSF performed the data collection and data analysis. CE made critical revisions to the paper. CE supervised the study.

Acknowledgements

We would like to thank Dr Harriet Coeling for her assistance in explaining the history of the Nursing Unit Cultural Assessment Tool (NUCAT). Also we want to extend appreciation to Dr Greta Cummings for her feedback on an earlier draft of this work.

Shannon Scott-Findlay’s work was supported by funding from the Canadian Institutes of Health Research (CIHR) and the Alberta Heritage Foundation for Medical Research (AHFMR).

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Organizational culture research in nursing: critical literature review


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