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CONCEPT

A dimensional analysis of nursing unit culture

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Abstract

Aim(s): Organizational culture has been studied for over four decades among nurses, across countries and contexts. However, wide variation exists in how the concept has been defined and at what level of the organization it is measured. The aim of this study was to use a dimensional analysis to conduct a conceptual synthesis of unit culture from a nursing perspective.

Design: Dimensional analysis, rooted in grounded theory methodology, was used to describe unit culture from a nursing perspective.

Methods: A literature search was conducted in April 2022. Inclusion criteria were (1) peer review publications, (2) used the term 'unit culture' or 'ward culture', (3) references nurses' role in unit culture, (4) published in the last 20 years and (5) written in English. One hundred fifteen articles met inclusion criteria, but dimensional saturation was researched after coding 24 articles.

Results: Findings were synthesized into four core dimensions and 10 subdimensions. Dimensions of unit culture included customs (practice norms, communication and prioritization), shared beliefs (assumptions, values and attitudes), hierarchy (social and informational) and atmosphere (emotional climate and collaboration). Conditions that shape unit culture include individual nurse characteristics, working conditions, unit policies/procedures and leadership. Unit culture impacts nurse work experiences and decision-making processes, which can affect outcomes including nurse wellbeing, practice behaviours and adherence to unit policies.

Conclusions: Identifying the dimensions of unit culture helps to bring clarity to a concept that is not well defined in existing literature.

Impact: This model of unit culture can be used to guide development of new instruments to measure unit culture or guide researchers in utilizing existing measures. Developing measures specific to unit culture are warranted to strengthen researchers' ability to assess how changing conditions of a unit (e.g. leadership, workload) changes unit culture and its related outcomes.

Patient or Public Contribution: No Patient or Public Contribution.

1 | INTRODUCTION

The concept of organizational culture has been explicitly used in organizational psychology since the late 1970s (Schein, 1990). In the years prior, organizational psychologists had begun to focus on work groups, systems and whole organizations as drivers of organizational outcomes, rather than the individual worker, resulting in the concept of organizational culture to describe patterns of norms, attitudes and behaviours that exist within organizations (Schein, 1990). However, despite decades of research on

organizational culture, the concept is still not consistently described or defined in either United States-based or international literature, with a variety of models and definitions presented (Bellot, 2011; Sackmann, 1992; Schein, 1990; Scott-Findlay & Estabrooks, 2006). Controversies surrounding the definition and operationalization of organizational culture include whether there can be more than one culture within an organization, whether to focus on administrative perceptions of the worker or the lived experience of the worker within the organization, and how to differentiate between organizational culture and climate (Bellot, 2011).

Because organizational culture is theorized to play a role in organizational outcomes, healthcare organizations, practitioners and researchers domestically and globally have focused on organizational culture as a way to improve patient care quality (Mannion & Davies, 2018). In nursing literature, the term first appeared in a 1986 study by Del Bueno and Vincent (Scott-Findlay & Estabrooks, 2006). Although organizational culture is similarly not consistently described in nursing literature, it generally refers to some combination of shared beliefs, attitudes and norms that guide the behaviour of organizational members (Jun et al., 2020). Prior literature has found that hospital organizational culture influences nurse outcomes, including job satisfaction (Lu et al., 2019; Tsai, 2011), burnout (Tsukamoto et al., 2021) and turnover intention (Mosadeghrad et al., 2011). Organizational culture has also been associated with organizational outcomes that include nurse retention (Marufu et al., 2021), absenteeism (Duncombe, 2019), organizational guideline adherence (Ukawa et al., 2015) and adverse patient outcomes, such as medication errors (Hyun Young Lee & Eun-Kyung Lee, 2021) and patient falls (Tucker et al., 2019).

2 | BACKGROUND

There has been comparatively less emphasis in healthcare research on the nature and impact of organizational subcultures (Kennerly et al., 2012; Lok et al., 2011; Scott-Findlay & Estabrooks, 2006). Organizational subcultures are defined within the organizational psychology literature as a set of beliefs, behavioural norms, attitudes and collective understandings that exist between a subset of organizational members who regularly interact with each other, identify as a specific group within the larger organization, and often share a common set of problems unique to that group (Palthe & Ernst Kossek, 2003). Subcultures form within organizations based on workers' affiliations with different subgroups, including occupational identification, work location or demographic factors (Lok et al., 2011). These subcultures can impact the attitudes and behaviours of workers independently of the overall organizational culture (Lok et al., 2011). Because of the complexity of large healthcare organizations such as hospitals, with varied occupational groupings, professional hierarchies and medical specialties, it is particularly important to examine the impact of organizational subcultures in healthcare (Mannion & Davies, 2018).

Summary Statement

What is already known

- Organizational culture and subcultures within healthcare impact patient and institutional outcomes.
- While literature on organizational culture in healthcare acknowledges that organizational subcultures exist within nursing units, there is a lack of a common understanding of what 'unit culture' is and how to measure it.
- It is important to develop a better understanding of the meaning of nursing unit culture in the literature so that the role of culture can be explored at the unit and organizational levels to further our understanding of its impact on patients, nurses and healthcare organizations.

What this paper adds

- This paper uses dimensional analysis to describe unit culture from a nursing perspective.
- We identified four dimensions of nursing unit culture: customs, shared beliefs, atmosphere and hierarchy.
- Across the included literature, nursing unit culture influences nurse work experiences and nurse decision-making, which ultimately impacts nursing practice behaviours, nurse health and wellbeing, and patient outcomes.
- Additionally, unit culture was described across the literature as something that can be a barrier or facilitator to a particular nursing behaviour or outcome, as well as a dynamic force that can be changed or influenced to improve outcomes.

Implications for policy and practice

- The dimensions and subdimensions of unit culture identified in this analysis can be used to develop new measures of unit culture or guide in the use of existing measures.
- Given the relationship between unit culture and both nurse and patient outcomes, studies using experimental designs and quality improvement projects could be implemented to advance knowledge of how changes in unit culture lead to changes in outcomes.
- Our understanding of unit culture could be further strengthened by the inclusion of the perspectives of other unit personnel (e.g. medical staff, nursing assistants).

While the authors of literature on organizational culture in healthcare do often acknowledge that organizational subcultures exist within nursing units (also called wards) or clinical areas, often referred to as unit or ward culture (depending on the country), they

lack a common understanding of what a 'unit culture' is and the ways in which it is distinct from (but related to) its larger organizational cultural context. Furthermore, this lack of a common understanding of nursing unit culture has resulted in a lack of consensus on the appropriate instruments with which to measure it (Kennerly et al., 2012). A 2003 review of quantitative measures of organizational culture in healthcare found 13 separate instruments; variation across instruments' theoretical basis, formatting and length, scope and other characteristics complicated a consistent measure of the concept (T. Scott et al., 2003). Similarly, a 2006 review of organizational cultural research in nursing found that within the 22 articles that measured organizational culture quantitatively, 11 different tools were used, some of which were created specifically for nursing, and some of which were adopted from other fields (Scott-Findlay & Estabrooks, 2006). The authors of this review also identify 'unit of analysis' as an important methodological issue within organizational research, as 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" (Scott-Findlay & Estabrooks, 2006, p. 505). Within the studies included in their review, some analysed the data at the individual level, others at the group level (such as nursing unit), and in others the unit of analysis was ambiguous (Scott-Findlay & Estabrooks, 2006).

Due to these inconsistencies in defining and operationalizing nursing unit culture, it is therefore important to develop a better understanding of the meaning of unit culture in nursing literature. A richer understanding of this concept can help further nursing research on the role of organizational culture and environment on nurse, patient and organizational outcomes. The purpose of this concept analysis, therefore, is to identify dimensions of unit culture in nursing literature. By identifying and clarifying these dimensions, the role of organizational culture can be explored in nursing research at both an organizational and unit level to give us better understanding of their impact on nurses, patients and healthcare organizations.

3 | METHODS

3.1 | Design

Dimensional analysis techniques were used to describe unit culture from a nursing perspective. A dimensional analysis is an "articulation of the social construction of reality…which offers an elaboration of how situations are defined and demonstrates the process by which perspective and context are integrated into the definition of the situation" (Rodgers & Knafl, 2000, p. 290). Dimensional analysis is built on both pragmatist philosophy and symbolic interactionist theory, and thus holds that concepts are socially constructed, contextually situated and primarily defined by how researchers act towards or use them (Rodgers & Knafl, 2000). Therefore, understanding the meaning of a concept requires an understanding of the various contexts in which it occurs and how the meanings differ across contexts. Given the lack of consistency across literature on the definition of unit culture, as well as the inherently socially constructed nature of organizational culture more broadly, dimensional analysis is an appropriate method with which to examine the meaning of unit culture in nursing literature and identify its dimensions.

3.2 | Literature search/data sources

In the first phase of analysis, a literature search was conducted with the assistance of a health services librarian in April 2022 using the MEDLINE via PubMed and CINAHL databases. The search utilized the terms 'Nurse' or 'Nursing' and 'unit culture' or 'ward culture' and 229 articles were found. Article screening was managed using Covidence. Following a review of titles and abstracts, 70 articles were excluded, and 159 articles retrieved for full-text review. Following full-text screening, 65 further articles were excluded, and 94 articles were identified as appropriate for analysis. An updated search was undertaken in October 2023, and a further 21 articles were identified as appropriate for analysis. Discussion about establishing inclusion and exclusion criteria was conducted by both authors; all screening and decision-making about whether studies met inclusion and exclusion criteria was conducted by the primary author.

For the final analysis, papers were included if they were: (1) a peer-reviewed publications of any type, (2) articles that described or utilized the term 'unit culture' or 'ward culture', (3) articles that included reference to nurses' role in unit culture, (4) articles written in the past 20 years and (5) articles written in English. Exclusion criteria were as follows: (1) articles that only referenced 'unit culture' in the title or abstract and did not provide explicit or implicit definition or description of unit culture and (2) articles that used the term unit culture but were describing or measuring culture at the organization level. See Figure 1 for the PRISMA diagram illustrating the process of assessing study eligibility for inclusion in analysis.

3.3 | Data analysis

In dimensional analysis, there are four processes essential to developing the social construction of a concept, which are conducted simultaneously (Rodgers & Knafl, 2000). These processes include the following: (1) describing how the concept is socially constructed, including identifying dimensions of the concept, exploring all the ways the concept is used, and highlighting inconsistencies; (2) describing the concept from multiple perspectives and in varying contexts; (3) differentiating the relationships between the various perspectives and contexts and how the concept is used or defined; and (4) identifying assumptions and examining these assumptions to clarify different uses of the concept (Rodgers & Knafl, 2000). Each article was read and coded according to these processes. An inductive approach was taken to the coding process, beginning with open coding conducted by the primary author. Subsequently, the research team moved to creating categories and abstraction to organize the

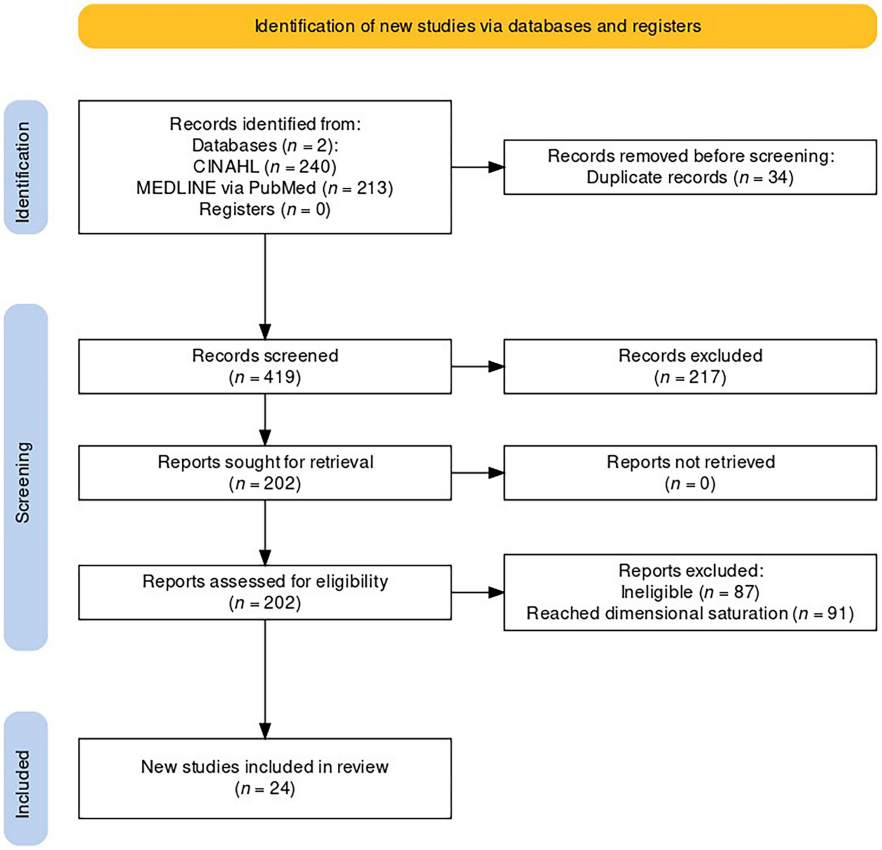

FIGURE 1 PRIMSA diagram for dimensional analysis of nursing unit culture.

data and facilitate dimensionalization (Elo & Kyngäs, 2008). Codes from the data were organized in a table to identify dimensions of unit culture, conditions that shape unit culture, consequences of unit culture and study perspectives on unit culture. Dimensions and subdimensions were identified by the research team by selecting significant terms or themes that appeared in multiple articles to explain the social construction of unit culture. Studies were further analysed to identify conditions shaping the concept, processes and outcomes related to the concept, and perspectives utilized in the literature to examine the concept, which were organized in an explanatory matrix (Caron & Bowers, 2000). In dimensional analysis, the explanatory matrix provides a framework that moves beyond describing the concept itself and helps to *explain* the phenomenon (Kools et al., 1996). In other words, the explanatory matrix helps to answer the question, 'What all is involved here?' (Schatzman, 1991).

Because dimensional analysis is rooted in grounded theory, analysis continued until the point of theoretical saturation was reached. Theoretical saturation refers to "the point in data collection when no additional issues or insights emerge from data and all relevant conceptual categories have been identified, explored, and exhausted" (Hennink & Kaiser, 2017, pp. 592). Therefore, analysis continued until the authors perceived that more data on the concept would not yield new concepts or further theoretical insights (Bryant & Charmaz, 2007). Articles were selected for analysis with a goal of covering a large temporal range in order to identify any trends in how unit culture has been conceptualized or operationalized over time.

4 | RESULTS/OVERVIEW OF THE CONCEPT

The final number of articles analysed was 24, with publication dates ranging from 2005 to 2023. Fourteen of the studies were based on qualitative methods, nine on quantitative methods and one study utilized a mixed-methods design. The majority of the studies were from the United States (US), Australia and Canada. Due to the search strategy utilized, all 24 articles utilized the perspectives of registered nurses (RNs) in collecting data on unit culture, but several studies also contained the perspectives of physicians, licensed practical nurses (LPNs), nurse practitioners (advanced practice nurses in the US) and certified nursing assistants (CNAs). A summary table of included studies, which outlines the design, sample, definitions and measures of unit culture, and findings related to unit culture from each study can be found in Appendix S1. Of note, many studies failed to explicitly define unit culture, or clearly differentiate it from broader organizational culture.

Analysis produced the following dimensions of unit culture: (1) customs, (2) shared beliefs, (3) atmosphere and (4) hierarchy. Each dimension has multiple subdimensions that further clarify the social construction of the concept of unit culture. Table 1 lists the dimensions and subdimensions of unit culture, and the articles associated with each subdimension. Figure 2 illustrates the dimensions and subdimensions of unit culture and how they interact in a bidirectional manner. Figure 3 provides an explanatory matrix identifying the conditions, processes and outcomes associated unit culture.

TABLE 1 Dimensions and subdimensions with associated articles.

Primary dimension (# of articles in the dimension)	Subdimensions (articles in subdimension)
Customs (20)	• Practice Norms (Astroth et al., 2013; Baggett et al., 2016; Chin et al., 2021; Currie et al., 2019; Douglas et al., 2014; Hastings et al., 2016; Hopkinson & Wiegand, 2017; Huang et al., 2010; Lea & Cruickshank, 2007; Livingston et al., 2020; McIntosh & MacMillan, 2009; Pepler et al., 2005; Salmela et al., 2012; Scott & Pollock, 2008; Shin et al., 2018; Søndergaard et al., 2017; Spence & Lau, 2006; Yap et al., 2014) • Prioritization (Baggett et al., 2016; Chin et al., 2021; Currie et al., 2019; Douglas et al., 2014; Livingston et al., 2020; Søndergaard et al., 2017) • Communication (Astroth et al., 2013; Baggett et al., 2016; George et al., 2023; Hastings et al., 2016; Hopkinson & Wiegand, 2017; Quigley et al., 2023; Yap et al., 2014)
Shared beliefs (18)	• Values (Casida et al., 2012; Chin et al., 2021; Hopkinson & Wiegand, 2017; Huang et al., 2010; Jun et al., 2020; McIntosh & MacMillan, 2009; Pepler et al., 2005; Quigley et al., 2023; Salmela et al., 2012; Scott & Pollock, 2008; Shin et al., 2018; Yap et al., 2014) • Attitudes (Astroth et al., 2013; Garcia et al., 2021; Huang et al., 2010; Jenkins et al., 2015; Jun et al., 2020; Lea & Cruickshank, 2007; McIntosh & MacMillan, 2009; Shin et al., 2018) • Shared Assumptions (Casida et al., 2012; Chin et al., 2021; Currie et al., 2019; Hopkinson & Wiegand, 2017; Huang et al., 2010; Jun et al., 2020; Lea & Cruickshank, 2007; Livingston et al., 2020; Pepler et al., 2005; Scott & Pollock, 2008; Shin et al., 2018; Spence & Lau, 2006; Yap et al., 2014)
Atmosphere (14)	• Support/Collaboration (Astroth et al., 2013; Douglas et al., 2014; George et al., 2023; Hastings et al., 2016; Huang et al., 2010; Jenkins et al., 2015; Jun et al., 2020; Lea & Cruickshank, 2007; Quigley et al., 2023; Salmela et al., 2012; Spence & Lau, 2006; Yap et al., 2014) • Emotional Climate (Astroth et al., 2013; Casida et al., 2012; Garcia et al., 2021; George et al., 2023; Hastings et al., 2016; Huang et al., 2010; Lea & Cruickshank, 2007; Salmela et al., 2012)
Hierarchy (8)	• Social Hierarchy (Astroth et al., 2013; Jun et al., 2020; Lea & Cruickshank, 2007; Scott & Pollock, 2008; Shin et al., 2018; Spence & Lau, 2006) • Informational Hierarchy (Livingston et al., 2020; Pepler et al., 2005; Scott & Pollock, 2008)

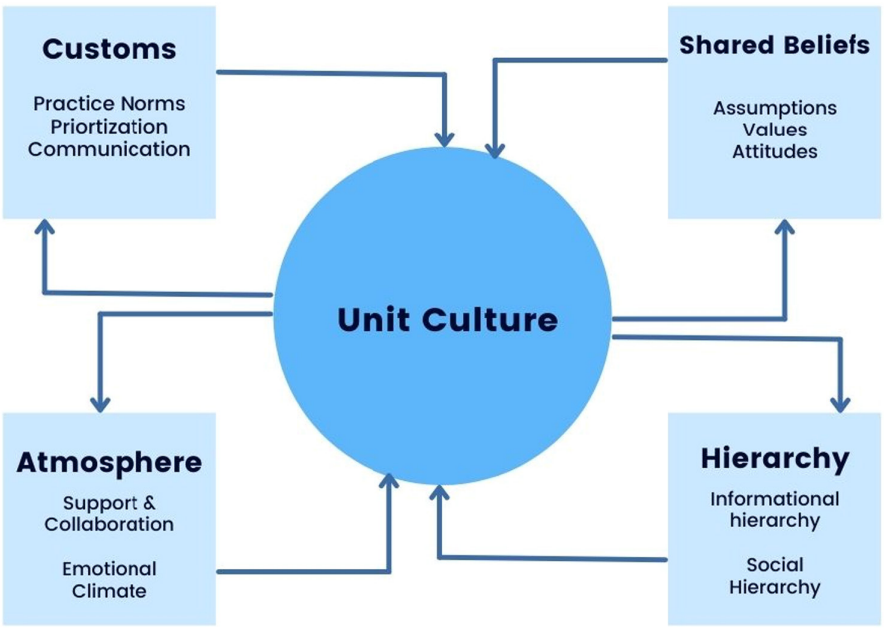

FIGURE 2 Dimensions and subdimensions of unit culture.

4.1 | Customs

Twenty articles identified customs as a dimension of unit culture in a nursing context. Broadly, this dimension refers to patterns of nursing behaviour within a particular unit. Within this dimension, three subdimensions were identified: (1) practice norms, (2) prioritization and (3) communication.

4.1.1 | Practice norms

Practice norms were an important component of this dimension in 18 articles. Practice norms are nursing or clinical practice behaviours that are usual or standard in a given unit or clinical area. Practice norms were described by nurses as a significant component of unit culture that impacted nurse decision-making and thus

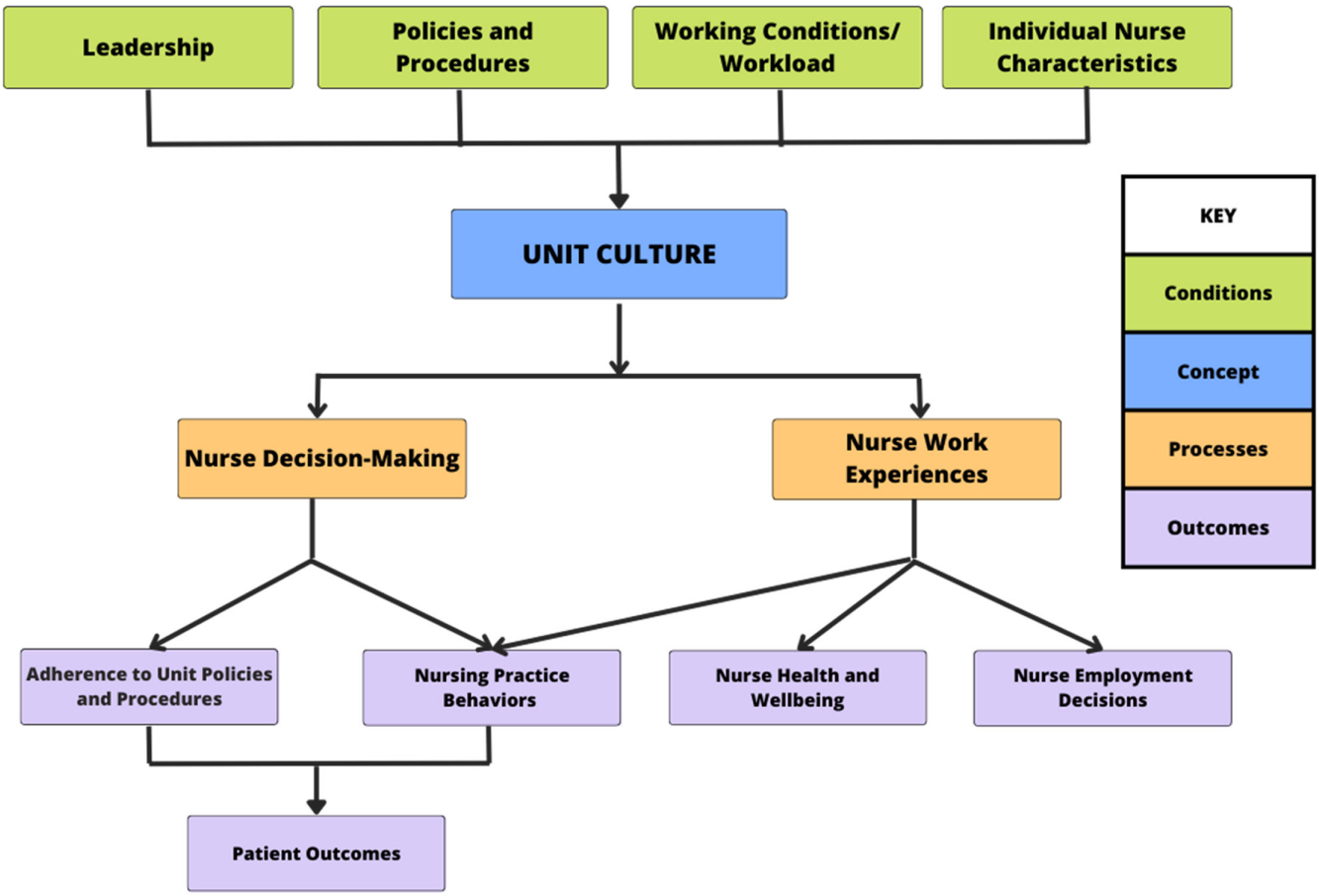

FIGURE 3 Explanatory matrix of nursing unit culture.

also impacted patient care. For example, two studies reported that practice norms played a significant role in whether or not a nurse chose to activate the rapid response team— an interprofessional group of critical care providers—to assist with a decompensating patient (Astroth et al., 2013; Jenkins et al., 2015). Another study found that practice norms were as important as official unit policies and protocols (or even more important) in determining nurses' management of patient oxygen therapy (Livingston et al., 2020). Unit practice norms play an important role in determining what nursing care behaviours an individual nurse chooses to carry out.

4.1.2 | Prioritization

Prioritization was a significant dimension of unit culture in six articles. Prioritization in the context of nursing involves the process of deciding the relative importance or urgency of a nursing practice or activity. This process of prioritization has serious implications for which nursing care practices are received by patients on a given unit. Douglas et al. found that nurses reported unit culture as a significant factor in whether doing physical assessments on patients was prioritized as an important nursing task (Douglas et al., 2014). Similarly, Currie et al. found that nurses identified the prioritization of MRSA screenings as an aspect of unit culture (Currie et al., 2019). Nurse prioritization impacts organizational and nurse outcomes as well as patient outcomes. A 2017 study on nurse documentation found that the priority given to nursing care documentation was dependent on the unit culture (Søndergaard et al., 2017). Nurses have also identified the process of prioritizing time to care for and support their fellow nurses as a part of unit culture (Baggett et al., 2016). Therefore, while the *practice norms* subdimension captures the nursing activities performed on a particular unit, the *prioritization* subdimension captures the order in which nurses typically perform these activities in accordance with their perceived importance or urgency.

4.1.3 | Communication

Communication was a dimension of unit culture in seven of the included articles. This subdimension refers to how nurses communicate with each other, with patients, and with other staff. Aspects of this subdimension include regularity of communication on the unit (Astroth et al., 2013), communication styles used on the unit (Astroth et al., 2013), appropriate language to use with colleagues and patients/families (Yap et al., 2014), forms of communication (e.g. verbal or written, public or private) (Baggett et al., 2016), quality of communication (George et al., 2023; Hastings et al., 2016;

Hopkinson & Wiegand, 2017; Quigley et al., 2023) and content of communication (Hopkinson & Wiegand, 2017). These patterns of communication common to a nursing unit are an important component of unit culture.

4.2 | Shared beliefs

Eighteen articles identified shared beliefs as a dimension of unit culture. Shared beliefs refer to patterns of beliefs that are common among nursing staff on a particular unit. Subdimensions include shared assumptions (beliefs about what is true), values (beliefs about what is important) and attitudes (feelings about a situation or circumstance based on those beliefs). While definitions of unit culture varied across the analysed studies (and many studies lacked an explicit definition), the majority of definitions included shared beliefs as a component of unit culture (Currie et al., 2019; Hopkinson & Wiegand, 2017; Jun et al., 2020; Pepler et al., 2005; S. D. Scott & Pollock, 2008; Shin et al., 2018).

4.2.1 | Shared assumptions

Shared assumptions were a component of the shared belief dimension in 13 articles. This subdimension refers to the beliefs about what is true that are shared by nurses working on a given unit. Shared assumptions identified included assumptions about nurses, nursing care and the unit. Shared assumptions about nurses include assumptions about nurses needs and stressors (Hopkinson & Wiegand, 2017; Pepler et al., 2005) and assumptions about the relationship between nursing tenure and clinical knowledge and skills (Lea & Cruickshank, 2007; Shin et al., 2018). Shared assumptions about nursing care include assumptions about appropriate or best nursing care practices (Chin et al., 2021; Currie et al., 2019; Hopkinson & Wiegand, 2017; Livingston et al., 2020; Spence & Lau, 2006) and assumptions about what constitutes ethical nursing behaviour (S. D. Scott & Pollock, 2008). Lastly, shared assumptions about the unit include assumptions about the mission or long-term direction of the unit or organization (Casida et al., 2012; Jun et al., 2020) and assumptions about what is expected of nurses, leaders and other staff on the unit or in the organization (Hopkinson & Wiegand, 2017; Yap et al., 2014).

4.2.2 | Values

Values were a component of the shared belief dimension in 12 articles. This subdimension refers to shared beliefs on a unit about what is important, worthwhile, or useful. Many of the included articles identified particular values that were part of unit culture and influenced behaviour and practice on the unit. Examples include the importance of palliative care (Chin et al., 2021), the usefulness of informatics/informatics skills (Shin et al., 2018), the importance of meeting patients' needs and providing excellent care (Hopkinson & Wiegand, 2017), the importance of self-care for nurses (Hopkinson & Wiegand, 2017; McIntosh & MacMillan, 2009), the importance of utilizing research and evidence-based practice (Pepler et al., 2005; Salmela et al., 2012; S. D. Scott & Pollock, 2008), commitment to quality patient care (Quigley et al., 2023) and the importance of nursing-specific knowledge and expertise (S. D. Scott & Pollock, 2008).

4.2.3 | Attitudes

Attitudes were a component of the shared belief dimension in eight articles. This subdimension refers to shared ways of thinking or feeling about a situation or circumstance on a unit. Attitudes are often based on our values and assumptions. In the included articles, attitudes were often described as positive or negative feelings towards a specific activity (McIntosh & MacMillan, 2009), nursing care practice (Garcia et al., 2021; Jenkins et al., 2015; Jun et al., 2020; Shin et al., 2018), work environment (Huang et al., 2010) or specific person/group of persons (Huang et al., 2010; Lea & Cruickshank, 2007). The majority of articles described attitudes as driving nurse behaviours and/or decision-making.

4.3 | Atmosphere

Fourteen articles identified 'atmosphere' as a dimension of unit culture. This dimension refers to the pervading tone or mood of the unit. Analysis of included articles revealed two subdimensions of atmosphere: support/collaboration and emotional climate.

4.3.1 | Support and collaboration

Support and collaboration were a component of the atmosphere dimension in 12 articles. These articles referred to an atmosphere of colleague support (Astroth et al., 2013; Douglas et al., 2014; Jenkins et al., 2015), a sense of unity (Salmela et al., 2012), nursing and interdisciplinary collaboration (Hastings et al., 2016; Jun et al., 2020; Spence & Lau, 2006) and teamwork (Douglas et al., 2014; George et al., 2023; Hastings et al., 2016; Huang et al., 2010; Jun et al., 2020; Quigley et al., 2023; Yap et al., 2014). Inversely, some articles referred to bullying or horizontal nursing violence as an aspect of unit culture that did not exhibit support or collaboration (Lea & Cruickshank, 2007). Collectively, nurses' perceptions of supportiveness and collaboration in their unit impact their work experiences and their clinical practice.

4.3.2 | Emotional climate

Emotional climate was a component of the atmosphere dimension in eight of the included articles. This subdimension refers to the collective mood of the unit, and in the included articles was generally referred to as on a spectrum from negative to positive. In some articles,

emotional climate was discussed in relation to the overall mood of the unit at a given time (Astroth et al., 2013; Casida et al., 2012; George et al., 2023; Hastings et al., 2016; Lea & Cruickshank, 2007; Salmela et al., 2012), and while in others it was discussed in relation to the mood or feeling around a particular situation or practice (Garcia et al., 2021; Huang et al., 2010).

4.4 | Hierarchy

Hierarchy was identified as a dimension of unit culture in eight articles. This dimension refers to how nurses on a unit rank people or things above one another according to their perceived status or authority. Analysis of included articles revealed two subdimensions of hierarchy: social and informational.

4.4.1 | Social hierarchy

Social hierarchy was a component of the hierarchy dimension in six articles. This subdimension refers to unofficial social hierarchies on the unit that gives certain nurses or staff status or authority above others. It was often referenced in relation to nursing or unit tenure and how that impacted nurse status (Astroth et al., 2013; Lea & Cruickshank, 2007). It was also referenced in relation to interdisciplinary hierarchy (Hastings et al., 2016; S. D. Scott & Pollock, 2008; Spence & Lau, 2006). This is distinct from official unit or organizational leadership hierarchies, which are discussed subsequently in this paper in the conditions that shape unit culture.

4.4.2 | Informational hierarchy

Informational hierarchy was a component of the hierarchy dimension in three articles. This subdimension refers to how nurses on a given unit assign status or authority to different sources of information. This hierarchy impacts where nurses turn to for information when engaging in problem solving and decision-making. Sources of information nurses utilize include nursing clinical expertise, nurse leaders or managers, research and evidence-based practice, unit policies and procedures and interdisciplinary knowledge (Livingston et al., 2020; Pepler et al., 2005; S. D. Scott & Pollock, 2008).

4.5 | Explanatory matrix

An explanatory matrix (Figure 3) was constructed to provide a framework to move beyond describing the different parts of the concept of unit culture, and instead examine the situation or environment in which the dimensions are embedded (Kools et al., 1996). The explanatory matrix identifies conditions that shape unit culture, the processes that are then impelled by these conditions, and the outcomes that result from these processes.

4.5.1 | Conditions

To further enhance our understanding of the concept of unit culture, various conditions that shape unit culture were identified and synthesized into four subdimensions. Conditions are "dimensions of a phenomenon that facilitate, block, or in some other way shape actions and/or interactions" (Kools et al., 1996, p. 318). Conditions identified in the included literature that shape unit culture include (1) leadership/management, (2) unit or organizational policies and procedures, (3) working conditions/workload and (4) individual nurse characteristics.

Leadership was the most widely discussed condition of unit culture and was identified in nine of the included articles (Baggett et al., 2016; Casida et al., 2012; Currie et al., 2019; Huang et al., 2010; Jenkins et al., 2015; Lea & Cruickshank, 2007; McIntosh & MacMillan, 2009; Salmela et al., 2012; Søndergaard et al., 2017). Organizational leaders, unit leaders, managers, clinical educators and charge nurses were all identified as playing a role in shaping unit culture. Nurse working conditions and workload were also identified as playing an important role in shaping unit culture (Baggett et al., 2016; Casida et al., 2012; Currie et al., 2019; Garcia et al., 2021; Huang et al., 2010; Lea & Cruickshank, 2007; McIntosh & MacMillan, 2009; Spence & Lau, 2006). Specific factors discussed in the included literature were volume of patients, clinical demand, unit/patient type, length or type of shift and resource availability. Several studies noted the importance of individual nurse characteristics in shaping unit culture, with several particularly pointing to the nursing or positional tenure makeup of the unit as playing a significant role (Astroth et al., 2013; Jenkins et al., 2015; Lea & Cruickshank, 2007; Shin et al., 2018). Lastly, unit or organizational policies and procedures set guidelines for nurses of what is appropriate behaviour, and therefore are also important in shaping unit culture (Astroth et al., 2013; Chin et al., 2021; Currie et al., 2019; Garcia et al., 2021; Hastings et al., 2016; Jenkins et al., 2015; Livingston et al., 2020; Søndergaard et al., 2017; Spence & Lau, 2006).

4.5.2 | Processes and consequences

Processes in dimensional analysis are the 'intended or unintended actions or interactions' that result from a given phenomenon, while consequences are the outcomes of these actions/interactions (Kools et al., 1996, p. 318). The processes that have been identified as resulting from unit culture have been synthesized into: (1) nurse decision-making and (2) nurse work experiences. Outcomes that were discussed as resulting from these processes include: (1) nursing practice behaviours (Astroth et al., 2013; Currie et al., 2019; Douglas et al., 2014; Garcia et al., 2021; Hopkinson & Wiegand, 2017; Jenkins et al., 2015; Jun et al., 2020; Livingston et al., 2020; Pepler et al., 2005; Scott & Pollock, 2008; Søndergaard et al., 2017; Spence & Lau, 2006), (2) patient outcomes (Astroth et al., 2013; Chin et al., 2021; Currie et al., 2019; Garcia et al., 2021; Huang et al., 2010; Jenkins et al., 2015; Livingston et al., 2020), (3) nurse health and

wellbeing (Baggett et al., 2016; Garcia et al., 2021; Hopkinson & Wiegand, 2017; Huang et al., 2010; Lea & Cruickshank, 2007; McIntosh & MacMillan, 2009), (4) nurse employment decisions (Hastings et al., 2016; Lea & Cruickshank, 2007) and (5) adherence to unit policies and procedures (Astroth et al., 2013; Chin et al., 2021; Currie et al., 2019; Douglas et al., 2014; Garcia et al., 2021; Jenkins et al., 2015; Livingston et al., 2020).

4.5.3 | Perspectives

There were two overarching perspectives identified across the included the studies. The first major perspective was that unit culture can be either a barrier or a facilitator to a particular outcome. Unit culture was identified as a barrier or facilitator of evidence-based practice utilization (Jun et al., 2020; Pepler et al., 2005; S. D. Scott & Pollock, 2008), implementation of new care models (Hastings et al., 2016; Spence & Lau, 2006), rapid response team activation (Astroth et al., 2013; Jenkins et al., 2015) and adherence to specific unit practices or protocols (Currie et al., 2019; Douglas et al., 2014; Garcia et al., 2021; Livingston et al., 2020). The other major perspective found across most of the included articles was that unit culture is dynamic and can be changed to work towards a desired nurse, patient or organizational outcome. Unit culture can be changed by altering its conditions, including leadership/leadership style, unit personnel, working conditions or unit policies and procedures.

5 | DISCUSSION

5.1 | Key findings

This dimensional analysis revealed that nursing unit culture is made up of four dimensions, including customs, shared beliefs, atmosphere and social/informational hierarchies. Unit culture is shaped by a variety of conditions, including leadership, working conditions, policies and procedures and nurse characteristics. It impacts both nursing work experiences and nurse decision-making, which play an important role in determining nurse practice behaviours, nurse health and wellbeing and ultimately patient outcomes. This understanding of the meaning of unit culture in nursing literature as a concept distinct from organizational culture can help healthcare organizations and nursing researchers work towards the improvement of patient care and nurse work experiences.

5.2 | Implications

Because most hospital-based nurses spend nearly all of their work time on a particular unit—which has a unique work environment, personnel, patient population and clinical guidelines and expectations—it is possible that unit culture is a more powerful predictor of both nurse and patient outcomes than organizational culture. This richer understanding of the dimensions of unit culture can help advance research on how unit culture effects these outcomes and how unit culture can be modified to *improve* outcomes.

This model of unit culture can be used to develop new instruments to measure the dimensions of unit culture or guide researchers in utilizing existing measures. The majority of included articles in this conceptual synthesis were qualitative studies, and of the included quantitative studies, two used measures of organizational culture to measure unit culture and three were either utilizing author-written measures or attempting validate a new unit culture assessment tool. Yap et al. used a previously developed tool, the Nursing Culture Assessment Tool (NCAT), to assess nursing as an occupational subculture within the healthcare setting (Yap et al., 2014). This tool was developed through a multi-phase qualitative field study which identified six dimensions of nursing culture—behaviours, expectations, teamwork, communication, satisfaction and professional commitment (Kennerly et al., 2012). Per the study authors, these dimensions "reflect shared values, beliefs, norms, rituals, and other assumptions and meanings that guide the actions and interactions of nursing staff in the service of quality care outcomes" (Yap et al., 2014). Subsequent psychometric testing resulted in a 19-item scale assessing these six dimensions of nursing culture (Kennerly et al., 2012). There is significant overlap between the dimensions of nursing culture used to develop the NCAT and the dimensions of unit culture identified in this analysis. This overlap helps to validate the structure and content of the NCAT and it also suggests that it would be an appropriate tool with which to measure nursing culture at the unit level. Additionally, that there is significant overlap between the dimensions of nursing culture resulting from Kennerly et al.'s qualitative field study and dimensions of unit culture resulting from this concept analysis brings support for this proposed model of nursing unit culture.

The dimension of nursing culture proposed by the NCAT that is *not* identified as a dimension/subdimension of unit culture in this analysis is professional commitment. Professional commitment in this context refers to a "sense of personal covenant between the worker and profession- responsibility or obligation to the profession of nursing" (Yap et al., 2014, p. 243). Items from the NCAT used to measure this dimension include "I feel very loyal to the nursing profession" and "For me nursing is the best of all professions" (Yap et al., 2014, p. 244). Within the model of nursing unit culture proposed by this dimensional analysis, professional commitment would likely be considered an individual outcome stemming from a nurse's work experience, which is impacted by the culture of their workplace (organization and/or unit). However, it would be interesting explore in further research whether commitment to the nursing profession is experienced collectively by nurses within a unit, and therefore a part of the culture, or an individual outcome (and separate construct) that can be effected by the culture on the unit.

The use of unit culture-specific measures and instruments will strengthen researchers' ability to identify specific relationships between unit culture dimensions and particular outcomes. It will also strengthen their ability to measure how changing the conditions of a

unit (e.g. leadership, unit policies, workload) improves or worsens unit culture and related outcomes. While most articles referred to unit culture as something that *could* be changed, none of the articles actually documented this through a longitudinal design, and in many studies even discussion of how one might *try* to change the culture of a unit was limited. Longitudinal designs, intervention studies and quality improvement projects could be implemented to advance knowledge of how changes in unit culture lead to changes in outcomes. The conditions, processes and outcomes related to nursing unit culture (see Figure 3) can also help identify potential points for intervention. For example, if researchers or healthcare leadership are seeking to improve patient outcomes or nurse wellbeing, identifying ways in which unit culture impacts nurse decision-making and work experiences could be helpful in designing effective interventions. Conversely, if the goal is to improve unit culture, interventions should be directed towards modifying the conditions impacting it (i.e. working conditions, leadership).

5.3 | Limitations

While analysis of articles for this conceptual synthesis continued until dimensional saturation was reached, it is possible that if analysis had continued, further dimensions would have been identified. Additionally, the literature search strategy limited included articles to those with 'nurse' or 'nursing' in the title and abstract, largely limiting findings to nursing perspectives, though a variety of interdisciplinary professionals work and collaborate in hospital units. Expanding perspectives to include medical staff, nursing assistants and other unit personnel could help further clarify the dimensions, conditions, processes and outcomes of unit culture. Finally, we limited the search to the past 20 years in order to capture more recent literature that is reflective of current nursing practice. Using literature beyond that timeframe may have influenced the analysis and conclusions. However, several seminal reviews on the topic were included for background context.

6 | CONCLUSION

Dimensional analysis was used to conduct a conceptual synthesis of unit culture from a nursing perspective. Defining the core dimensions of unit culture, as well as the conditions that shape it and the processes and outcomes that proceed from it has many implications for further research into how to improve nursing work life, patient care and organizational outcomes. Our understanding of this concept could be further expanded by exploring the perspectives of other unit staff, as well as exploring the relationship between unit culture and its broader organizational context. With the ongoing global nursing shortage, there is an urgent need to understand nurses' working lives and how they can be improved.

AUTHOR CONTRIBUTIONS

KL made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data. KL and AWS were involved in drafting the manuscript or revising it critically for important intellectual content; and given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. KL and AWS agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflict of interest to declare.

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