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## Research Paper

## The development of an evidence-informed Convergent Care Theory: Working together to achieve optimal health outcomes

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## ABSTRACT

**Background:** Healthcare is a complex and divergent system with uncertainty, unpredictability, and multi-layered stakeholders. The relationships among the stakeholders are multifaceted and dynamic, requiring continual interpersonal connections, networks, and co-evolution. It is pivotal to have an evidence-informed theory to explain the phenomenon, uniting the multifaceted stakeholders' efforts.

**Purpose:** To describe the development of an evidence-informed theory, the Convergent Care Theory, assembling healthcare stakeholders to work together and achieve optimal health outcomes.

**Methods:** The Convergent Care Theory was developed using a theory synthesis approach based on empirical research and literature reviews published by the theory-proposing author. The empirical evidence was categorized into: patients and families, healthcare providers, healthcare organizations, and patients' and healthcare providers' self-care.

**Results:** The Convergent Care Theory includes four concepts: *all-inclusive organizational care, healthcare professional collaborative care, person-centered precision care, and patients' and healthcare providers' self-care*. Achieving convergent care is a process requiring all stakeholders to work together. Six major facilitators emerged from the research evidence: competence, compassion, accountability, trusting, sharing, and engaging.

**Conclusion:** This article introduced the development process of the evidence-informed Convergent Care Theory. Healthcare systems are complex, with multiple stakeholders' needs to meet. The Convergent Care Theory strives to unite healthcare stakeholders, bond resources, and join forces to achieve optimal healthcare outcomes. The underpinning of the theory is a caring culture, which is an underlying code for organizational and team behaviors and the foundation of optimal health outcomes.

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## What is known?

- Healthcare is a complex and divergent system with unpredictability, uncertainty, and diversity and has multilayered stakeholders with divided roles and interests.
- The relationships among the stakeholders are multifaceted and dynamic, requiring continual interpersonal connections, networks, and co-evolution.

## What is new?

- The Convergent Care Theory addresses four concepts: *all-inclusive organizational care, interprofessional collaborative care, person-centered precision care, and self-care*.
- Achieving convergent care is a process requiring all stakeholders to work together. Six major facilitators for the process emerged from the research evidence, including competence, compassion, accountability, trusting, sharing, and engaging.
- This theory signifies the importance of care convergence, emphasizing that human connections and a culture of caring are essential underpinnings of convergent care.

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## 1. Introduction

Healthcare is a complex and divergent system with multi-layered stakeholders and unpredictable situations. The relationships among the stakeholders are multifaceted and dynamic, requiring constant interpersonal connections, networks, and co-evolution [1,2]. Patients' uncertain and unpredictable conditions add to the complications and complexity of the system. Healthcare is also humanistic, requiring professional collaboration and human being connections to meet multi-layered stakeholders' divergent needs [3–5]. The healthcare complexity requires convergent care – all healthcare stakeholders – organization, providers, patients, and families – to work together to achieve optimal health outcomes.

The epistemological underpinning of the Convergent Care Theory is the belief that knowledge can be obtained through all ways of knowing. Carper suggested four patterns of knowing to guide practice and education: empirics, ethics, esthetics, and personal [6]. The theory is also based on the belief that caring is a core value of nursing and healthcare [4,7,8], caring culture is the essence of interprofessional collaboration [9], and caring for patients requires professional competence, altruism, responsibility, and empathy [10]. The assumption is that a caring culture can promote organizations' healthy work environments, facilitate interprofessional collaboration, integrate patient care delivery, and improve healthcare outcomes [11–13].

Achieving optimal health outcomes requires the unity of the stakeholders, including healthcare organizations, providers, and patients. The complexity in healthcare and the demand for unified care among the key stakeholders require a theory that considers healthcare diversity and complexity and converges the stakeholders' efforts to promote healthcare outcomes. This article describes the development of an evidence-informed theory, the Convergent Care Theory, guiding healthcare stakeholders to work together to achieve optimal health outcomes.

## 2. The nursing metaparadigm underlying the Convergent Care Theory

Nursing is a major healthcare workforce and plays an irreplaceable role in leading change, maintaining healthcare function, and improving patient care. Healthcare is a people-centered system that aims to prevent, treat, maintain, and improve the public's health. During the care process, caring interactions among various healthcare disciplines and professionals are essential in providing cohesive and high-quality patient care [4,5,14,15]. The metaparadigm underlying convergent care is described based on the four major concepts noted by Fawcett – person, environment, health, and nursing [16].

### 2.1. Person

A person is a recipient or provider of care, who can be a patient, a family member, or a healthcare provider. These people can be categorized into caregivers and care receivers who are key stakeholders and play various roles in healthcare. The Convergent Care Theory sees a person from a humanistic and holistic view, meaning that each person is an individual who has specific biopsychosocial needs, can influence others, and can also be influenced by others and the surrounding environments [7,14,17]. These beliefs of a person can facilitate the caring relationships among one another, treating patients and peers with humanity, interacting with respect and dignity, and making each other feel safe and belong.

### 2.2. Environment

Environments refer to the external and internal surroundings impacting a person's or an organization's health and function. The Convergent Care Theory signifies that the environment can be internal and external and can affect individuals and organizations. The influence of the environment can be perceived as positive or negative. The internal environment can be one's physical and mental health, which plays a significant role in individuals' biopsychosocial health [10,18,19]. The external environment can be physical surroundings, cultural atmospheres, or policies. The external and internal environments are intertwined and impact a person's or an organization's health and functioning capability [3,18]. While external environments affect an individual's or organization's health and function, one's internal conditions, such as one's health, values, goals, and beliefs, can influence the interactions with the surrounding environment and actions toward others. Healthcare organizations – settings where patient and community care are offered – are a vital environment for promoting or impeding patients' and healthcare providers' health [20,21]. Establishing and maintaining positive or facilitating environments are vital for individuals' and organizations' growth and performance.

### 2.3. Health

Health refers to the state in which individuals achieve their best biopsychosocial wellness at the time and context. The Convergent Care Theory addresses health and health outcomes from four aspects of care – an all-inclusive organizational caring atmosphere (organizational care), healthcare professional collaborations (collaborative care), patients' person-centered care delivery (precision care), and patients' and healthcare professionals' self-care (self-care). Healthcare systems are complex with uncertainty, unpredictability, and variability. It would not be possible for one person or discipline to complete the care patients require, especially when healthcare strives to provide individualized precision health. Besides patients' health, clinicians' health is also a significant focus in healthcare.

The Convergent Care Theory recognizes the importance of both patients' and healthcare providers' health outcomes. Healthcare professionals across specialties face great health-related challenges and experience psychological issues [22,23]. While the external environments, including organizational environments, play a significant role in patients' and healthcare professionals' health outcomes, self-care emerges to be essential. External environmental factors can only work through internal factors. Thus, it is crucial for healthcare providers and patients to perform self-care.

### 2.4. Nursing

Nursing signifies a discipline providing care with knowledge gained through all ways of knowing. The Convergent Care Theory combines knowledge gained through empirical, ethical, esthetic, and personal experiences [6]. Nightingale, the founder of professional nursing, had a vision for nursing, caring for others with knowledge and passion and a whole person with biopsychosocial needs. Since the Florence Nightingale era, nurses have been responsible for creating an environment suitable for patient healing and have an ethical role in helping patients heal in their best possible conditions [24]. Nurses play a significant role in creating a healthy and healing environment for patients, families, and colleagues [20,25,26]. Nurses' caring actions determine organizational care, culture, and patient care quality [27–29]. While nursing is a significant healthcare workforce, the Convergent Care Theory

recognizes the limitation of one discipline and advocates teamwork and interprofessional collaborations.

### 3. Methods

The Convergent Care Theory was developed using a theory synthesis approach, synthesizing a phenomenon using available evidence. Walker and Avant [30] introduced three basic approaches to theory building: derivation, synthesis, and analysis. This theory was synthesized through integrating the evidence, including empirical research and literature reviews, published by the theory-proposing author from 2015 to 2021 [3,9,10,13,18–22,25–29,31–52]. A summary of the theory-proposing author's studies is listed in Table 1.

## 4. Theory development process

### 4.1. Empirical evidence underlying the theory development

This section described the empirical evidence underlying the theory development. The theory-proposing author has led multiple research teams and interdisciplinary team members to conduct research and literature reviews to explore the convergent care phenomenon. The studies involved healthcare stakeholders – patients, families, and healthcare professionals from various disciplines, including nurses, physicians, allied health professionals, and healthcare administrators. The empirical evidence was categorized into patients and families, healthcare professionals, and healthcare organizations. The theory-development process is displayed in Fig. 1. The Convergent Care theoretical model is shown in Fig. 2.

#### 4.1.1. Studies on patients and families

Studies on patients and families provide knowledge about parents' and family members' hospital experiences [10,25,27,28,31–36]. The research quest for the theory started with families of children hospitalized with acute conditions, such as critical congenital heart disease, undergoing heart surgery [10,35,37]. Studies of parents provided knowledge about parents' hospital experiences, expectations for care, perspectives on care quality, and perceptions of healthcare providers' caring characteristics [10,25]. Parents specified that they experienced high levels of stress in healthcare, and what helped them the most during the hospitalization was healthcare providers' caring characteristics, including professional knowledge, empathy, compassion, teamwork, and daily caring actions.

The studies on patients and families and the literature reviews on patients' perceptions of quality of care led to the exploration of healthcare professionals. When analyzing over a thousand patients' complaints in a major healthcare system, our team found that patients complained the most about healthcare professionals' lack of caring attitudes, team collaboration, and communication [27,28]. From patients' perspectives, healthcare providers' caring characteristics were professional competence, altruism, responsibility, and empathy [3,10,26]. Patient-provider relationships are essential to cultivating patients' trust and can be developed through non-hierarchical human connections and relationships.

#### 4.1.2. Studies on healthcare professionals

The studies on healthcare professionals offer valuable information about healthcare professionals' perspectives on building caring relations with patients and promoting organizational culture and performance [19,38–44]. The participants in the studies were nurses, physicians, allied health professionals, administrators, and other healthcare supportive personnel [3,19,22,39,41]. These studies identified the underlying mechanism of the Convergent

Care Theory, which is a culture of caring. Healthcare professionals' daily actions at work directly affect care quality and patients' and families' experiences, indicating the significance of human relations between and among co-workers and patients.

These studies explored the “what” and “why” of healthcare professionals' optimal performance. The findings indicate that nothing that healthcare professionals do is too small in patients' care [10,25], and healthcare professionals' daily actions at work affect team members' engagement and patients' care quality [20,21,26,29]. The findings brought up topics like developing an ownership mentality (sharing missions, visions, goals, leadership, and responsibility between organizations and team members), creating a collaborative care environment, and building a patient safety culture, such as “Just Culture” – a culture of shared accountability between employees and organizations, in which organizations take accountability for system changes and employee behavior improvements [9,21]. The studies on healthcare professionals suggested the importance of interprofessional collaboration. An optimal outcome of collaborative care is that healthcare professionals work together with patients and families, share decision-making, and provide safe and high-quality patient care.

#### 4.1.3. Studies on organizations

Studies on organizations indicate that health outcomes are directly associated with organizations' support, commitment, and culture [9,18,20,21,26,38,41,45]. An underlying principle of organizations' performance outcome is a culture of caring that affects human relationships and work environments [3,18,20,21]. These studies focused on promoting healthcare professionals' performance, well-being, and high-quality patient care. Organizations' caring culture, patients' care, and healthcare professionals' daily care actions are significantly correlated. Research evidence indicated significant impacts of nurses' work environments on nurses' interpersonal relationships, psychological well-being, and job performance [18,45]. Organizational leadership is significantly correlated with nurses' engagement and well-being [19,38,40,43] and organizations' culture [9,13,20,26,29,43]. These research studies confirm that patients' care quality, healthcare professionals' collaborative care, and organizational caring culture are all connected.

#### 4.1.4. Studies on patients' and healthcare providers' self care

Studies on healthcare providers' self-care yielded noteworthy knowledge about healthcare professionals' self-care and resilience and patients' self-care [19,22,40,42,43,46–48]. A significant phenomenon surfaced, which is self-care, including self-care for patients and healthcare professionals. These studies suggest that although organizations and work environments are essential for quality care and patients' experiences in healthcare, self-care is the foundation for individuals' health [36,49–52].

The concept of self-care has two facets, healthcare professionals and patients. Optimal self-care of patients and healthcare providers is essential for improving health system performance. The findings of these studies show that healthcare professionals' well-being is fundamental to ensure patient care quality and reduce healthcare costs [38,40,41,49–51]. The self-care studies led to some practical strategies to promote healthcare professionals' resiliency building [19,22,43,44,47,48]. These findings are consistent with the healthcare Quadruple Aim model in which the fourth aim (promoting clinicians' health) was added to promote the previously designed Triple Aim (improving patient experience and population health and reducing healthcare costs) [53]. Thus, patients' and healthcare providers' self-care is an important concept in the Convergent Care Theory.

**Table 1**  
Summary of the theory-proposing author's publications supporting the Convergent Care Theory synthesis.

Concepts synthesized	Article title	Purpose	Major findings and indications
Organizational care	The state of the science of nurse work environments in the United States: A systematic review [18]	Identify, evaluate, and summarize the major foci of studies about nurse work environments in the United States published between January 2005 and December 2017 and provide strategies to improve nurse work environments.	<ul style="list-style-type: none"> <li>• Nurse work environments are correlated with                             <ol style="list-style-type: none"> <li>1) the health outcomes of nurses, including psychological health, emotional strains, job satisfaction, and retention;</li> <li>2) nurses' interpersonal relationships at workplaces, job performance, and productivity;</li> <li>3) patient care quality;</li> <li>4) hospital accidental safety;</li> <li>5) nurse leadership.</li> </ol> </li> <li>• Empowering and engaging nurses are vital to achieving a healthy work environment and quality patient care.</li> <li>• Healthier work environments are correlated with more satisfied nurses, better job performance, and higher quality of patient care, leading to optimal organizational outcomes and performance.</li> </ul>
	Connecting patients' perceptions of nurses' daily care actions, organizational human caring culture, and overall hospital rating in Hospital Consumer Assessment of Healthcare Providers and Systems surveys [20]	Connect patients' perceptions of nurses' daily care actions with patients' overall ratings of their hospital experience and hospitals' human caring culture.	There are significant relationships among organizations' caring culture, nurses' daily care actions, and patients' outcomes – overall experiences measured by Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys.
	Organizational strategies for creating a culture of well-being based on Human Caring Theory and a Self-Care ENERGY Model [21]	Describe the organizational strategies implemented to help team members during the pandemic and nurses' and patients' experiences through the health system's employee pulse-check surveys and patients' Hospital Consumer Assessment of Healthcare Providers and Systems survey.	Organizational strategies implemented to promote organizational caring culture, resources, and support are associated with improved organizational outcomes, including clinicians' perceptions of well-being, satisfaction, and support, and patients' hospital experiences.
	Healthcare interprofessional team members' perspectives on human caring: A directed content analysis study [3]	Describe interprofessional team members' perspectives on human caring based on the Ten Caritas Processes®/Caritas-Veritas Literacy of Watson's Human Caring Theory within the Unitary Caring Science.	The caring relationships among interprofessional team members and organizational support are fundamental for a caring-healing work environment. When human caring is applied in interprofessional teams, healthcare professionals find a caring consciousness to care for one another to promote patient care.
	Leadership strategies to promote frontline nursing staff engagement [38]	Examine strategies nurse leaders can utilize to promote work engagement among frontline nursing staff in inpatient hospital settings.	Organizations should provide training sessions to build emotional intelligence for leaders and staff. Nurse leaders must prioritize being visible and accessible. They can create an environment with structural empowerment to reduce burnout, incivility, and turnover. Leaders should help nurses align organizational goals and personal values, which increases leaders' credibility and facilitates trusting relationships with staff. Nurse leaders should continue formal studies and seek a mentor.
	The current intervention studies based on Watson's Theory of Human Caring: A systematic review [26]	Provide an overview of the intervention studies based on Watson's Caring Theory and help nurse clinicians, educators, and researchers better understand the trend of caring-based research interventions, the effectiveness of implementing Watson's Human Caring Theory principles, and the need for future knowledge development.	Organizational caring science-based interventions may decrease patients' emotional strains, increase patients' self-management confidence and emotional well-being, increase nurses' job satisfaction and engagement, and improve nursing students' confidence in the clinical performance and the awareness of caring behaviors.
	Analyzing Patients' Complaints: Awakening of the Ethic of Belonging [27]	Analyze patients' complaints filed against nurses from a nursing ethics perspective.	The complaints are categorized into four themes: uncompassionate attitudes, unprofessional communication, disrespect of patient rights, and unsatisfactory quality of nursing care. The ethic of belonging reflects nurse-patient relations, indicating the need to improve the organizational caring culture. Patients expect to be treated with dignity.

**Table 1** (continued)

Concepts synthesized	Article title	Purpose	Major findings and indications
Collaborative care	Employee engagement and absenteeism: A step towards improving patient care [41]	Describe how leadership implemented engagement strategies to reduce absenteeism on a general surgery unit in a Southeastern community hospital.	Burnout is related to absenteeism, affecting the quality of patient care. Organizational care may reduce employee absenteeism to promote employee engagement.
	Nurses' perceptions of caring: A directed content analysis based on the CARE Model [39]	Examine nurses' perceptions of caring based on the four dimensions of a CARE model—competence, altruism, responsibility, and empathy and provide practical strategies to improve nursing caring behaviors.	A directed content analysis approach was used to analyze nurses' perceptions of caring using CARE as a guide. Caring nurses are competent, altruistic, responsible, and empathetic.
	A systematic meta-review of systematic reviews about interprofessional collaboration: facilitators, barriers, and outcomes [13]	Synthesize the IPC systematic reviews regarding the facilitators, barriers, and outcomes published from 2010 to 2020	Factors that facilitate or impede interprofessional collaborations are categorized into three levels: <ul style="list-style-type: none"> <li>• organization,</li> <li>• team, and</li> <li>• individual levels</li> </ul> Major outcomes related to <ul style="list-style-type: none"> <li>• patients,</li> <li>• healthcare professionals, and</li> <li>• organizations.</li> </ul> The facilitators, barriers, and outcomes are all connected. Effective collaborations are processes involving <ul style="list-style-type: none"> <li>• building relationship,</li> <li>• teaming up, and</li> <li>• collaborating.</li> </ul> Improving collaborative care requires organization, team, and individual efforts. Effective collaborations benefit all stakeholders – organizations, professionals, and patients.
	Interventions to promote teamwork, delegation, and communication among registered nurses and nursing assistants: An integrative review [45]	To understand the strategies to influence patient outcomes by synthesizing existing evidence on effective teamwork, delegation, and communication between registered nurses and nursing assistants.	The existing research demonstrates a need for interventions to foster a dynamic and effective relationship between registered nurses and nursing assistants. Nurses and nursing assistants must have an effective relationship so they can provide collaborative care to their patients.
	A culture of caring: the essence of healthcare interprofessional collaboration [9]	The purpose of the study was to investigate healthcare professionals' perspectives on ways to promote IPCP	The findings indicated that the underlying facilitator of IPCP was a culture of caring – human connections among interprofessional team members. The culture of caring could be fostered through five processes: <ul style="list-style-type: none"> <li>• building caring relationships</li> <li>• developing an ownership mentality</li> <li>• providing constructive feedback</li> <li>• applying the strengths-based practice</li> <li>• acting as the first and last lines of defense.</li> </ul>
	Healthcare providers' caring: Nothing is too small for parents and children hospitalized for heart surgery [25]	To describe parents' perceptions of healthcare providers' actions when their child is diagnosed with CHD and undergoes heart surgery	Findings of the study indicate that parents perceive caring when providers: <ul style="list-style-type: none"> <li>• seek to understand them (knowing)</li> <li>• accompany them physically and emotionally (being with)</li> <li>• help them (doing for)</li> <li>• support them to be the best parents they can be (enabling)</li> <li>• and trust them to care for their child (maintaining belief)</li> </ul> These findings relate to the collaborative care that is necessary between a child's medical provider and their parents.
Parents' and healthcare professionals' perceptions of the quality of care: A PITSTOP model of caring [29]	Understand parents' and healthcare professionals' perceptions of the quality of care, indicating that the intertwined elements promoting patient quality of care include patient-centered care, interprofessional collaboration, team communication, safety and security, trusting relationships, optimal outcomes, and positive patient experiences (PITSTOP).	This study brought up a novice opinion that healthcare should be like a "pitstop," not just a "repair shop." Healthcare encounters may be brief but invaluable in helping patients and families succeed in their health promotion. The PITSTOP model focuses on: <ul style="list-style-type: none"> <li>• patient-centered care</li> <li>• interprofessional collaboration</li> <li>• team communication</li> <li>• safety and security</li> <li>• trusting relationships</li> <li>• optimal outcomes</li> <li>• positive patient experiences</li> </ul> in order to use collaborative care to provide the best health outcomes to patients.	

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Table 1 (continued)

Concepts synthesized	Article title	Purpose	Major findings and indications
Precision care	Parents' perceptions of caring characteristics of physicians and nurses [10]	To describe parents' perceptions of the caring characteristics of physicians and nurses who take care of their children with CHD undergoing heart surgery	According to parents' descriptions, the top four caring characteristics of physicians and nurses are: <ul style="list-style-type: none"> <li>• competence</li> <li>• altruism</li> <li>• responsibility</li> <li>• empathy</li> </ul> The precision of care includes not only treatment of physical illness and medical knowledge but also includes caring for patients' psychological and emotional needs.
	Mental distress and influencing factors in nurses caring for patients with COVID-19 [42]	Understand nurses' mental distress can help when implementing interventions to mitigate psychological injuries to nurses.	This study showed that even relatively highly resilient nurses experienced some degree of mental distress, including Post-Traumatic Stress Disorder (PTSD) symptoms and perceived stress. Our findings highlight the importance of helping nurses cultivate resilience and reduce stress in order to provide the most precise care.
	Parents' experiences of having a child undergoing congenital heart surgery: An emotional rollercoaster from shocking to blessing [37]	To describe parents' experiences when their child with congenital heart disease (CHD) underwent heart surgery	Parents experienced a "rollercoaster" of emotions. Critical times were when parents: <ul style="list-style-type: none"> <li>• received their child's diagnosis</li> <li>• handed their child over to the surgical team</li> <li>• visited their child in the pediatric intensive care unit after surgery</li> </ul> Related stressors were: <ul style="list-style-type: none"> <li>• the uncertainty of outcomes after surgery</li> <li>• the loss of parental control</li> <li>• the physical appearance of their child</li> <li>• the fear of the technological atmosphere in the intensive care unit</li> </ul> Being aware of these critical moments and stressors will allow healthcare professionals to provide precise care and support at these times.
	Families of children with congenital heart disease: A literature review [35]	Synthesize the key findings regarding families of children with congenital heart disease, critique research methods, describe what has been done, and provide recommendations for future inquiry.	Four major themes were derived: <ul style="list-style-type: none"> <li>• parents' psychological health</li> <li>• family life</li> <li>• parenting challenges</li> <li>• family-focused interventions</li> </ul> While they found parents having psychological symptoms, researchers did not explore parents' appraisals of what led to their symptoms. Research is needed to explore parents' experiences and expectations so that precise care can be provided preemptively.
	The relationships between prenatal smoking exposure and telomere lengths in fetuses, infants, and children: A systematic literature review [34]	Evaluate the relationships between prenatal smoking exposure and telomere lengths (TLs) in fetuses, infants, and children.	This review shows that the impact of prenatal smoking on the health of unborn fetuses, infants, and children is an understudied area. Because of the inconsistent findings and cross-sectional study designs, more research is required, especially longitudinally studies. The evidence confirms the current practice that pregnant women should be encouraged to stop smoking as soon as they become pregnant. This research increases the precision of prenatal care.
	An exploration of the breastfeeding behaviors of women after cesarean section: A qualitative study [33]	Explore the factors affecting breastfeeding behaviors in women after cesarean section.	The findings can offer valuable information for healthcare professionals to help women breastfeed after cesarean sections. It is necessary to change women's attitudes, belief systems, and external environments and help them become more confident to promote women's breastfeeding behaviors after cesarean sections. This research increases the precision of care for post-cesarean breastfeeding issues.
	Promoting breastfeeding and lactation among mothers of premature newborns in a hospital in China [31]	Promote breastfeeding and lactation in mothers separated from their premature infants admitted to the NICU in a hospital in China.	Partial breastfeeding rates increased from 17.9% to 52.7%, and exclusive breastfeeding rates increased from 1.8% to 4.1%. Compliance with breastfeeding guidelines and measures of maternal lactation volume both improved significantly. Promoting breastfeeding and lactation among mothers of premature infants requires not only scientific knowledge but also a caring environment and family-centered practice. All of these aspects are necessary to precisely promote breastfeeding and lactation.

Table 1 (continued)

Concepts synthesized	Article title	Purpose	Major findings and indications
	The psychological change process of frontline nurses caring for patients with COVID-19 during its outbreak [44]	Identify the psychological change process of the registered nurses who worked in the epicenter of the COVID-19 outbreak.	The psychological change process of frontline nurses included three stages (early, middle, and later stages). The psychological characteristics of each period were: <ul style="list-style-type: none"> <li>• ambivalence (early stage)</li> <li>• emotional exhaustion (middle stage)</li> <li>• energy renewal (later stages)</li> </ul> Nurse leaders were anchors in facilitating frontline nurses' psychological adaptation. By understanding and recognizing these stages, frontline nurses can be cared for more precisely.
	A mixed-method analysis of patients' complaints: Underpinnings of theory-guided strategies to improve quality of care [28]	Use a mixed-method analysis to a) examine the characteristics and categories of patients' complaints, b) explore the relationships of patients' complaints with professions and units, and c) propose theory-based strategies to improve care quality.	Six categories surfaced from the qualitative analysis: <ul style="list-style-type: none"> <li>• uncaring attitudes</li> <li>• unsatisfactory quality of treatment or competence</li> <li>• communication problems</li> <li>• the process of care</li> <li>• fees and billing issues</li> <li>• other miscellaneous causes</li> </ul> Physicians received most of the complaints (56.6%). The unit receiving the most complaints were outpatient clinics and medical support units (52.7%). Understanding the distribution of complaints can allow healthcare administration to precisely fix the most pertinent issues.
	Effects of a theory of planned behavior-based intervention on breastfeeding behaviors after cesarean section: A randomized controlled trial [32]	Examine the efficacy of an intervention based on the theory of planned behavior (TPB) in improving breastfeeding behavior among women with cesarean sections (C-sections).	This study indicated that the TPB-based interventions effectively improved women's breastfeeding behaviors after C-sections. This finding increases the precision of breastfeeding care.
	A Qualitative Exploration of the Psychological Experience of Patients Hospitalized with COVID-19 [36]	Describe the psychological experience of patients hospitalized with COVID-19.	Patients with COVID-19 went through three psychological stages while hospitalized for COVID-19 treatment: <ul style="list-style-type: none"> <li>• extremely uncertain during the initial diagnosis</li> <li>• complicated feelings of negativity during treatment</li> <li>• positive growth in the recovery stage</li> </ul> Healthcare professionals need to provide patients with holistic care.
Self-care – healthcare professionals	The power of self-care: An ENERGY model to combat clinician burnout [47]	Summarize research studies on self-care and propose six self-care strategies: energy source, nurturing kindness, emotional hygiene, refocusing purpose, germinating positivity, and your uniqueness.	Although healthcare organizations play a vital role in improving work environment conditions, clinicians' self-care is essential.
	Nurse leaders' strategies to foster nurse resilience [19]	Identify nurse leaders' strategies to cultivate nurse resilience.	Seven strategies are identified that nurse leaders can use to foster nurse resilience: <ul style="list-style-type: none"> <li>• facilitating social connections</li> <li>• promoting positivity</li> <li>• capitalizing on nurses' strengths</li> <li>• nurturing nurses' growth</li> <li>• encouraging nurses' self-care</li> <li>• fostering mindfulness practice</li> <li>• conveying altruism.</li> </ul>
	Building nurse resilience [40]	Summarizes the findings of nine studies about common contributing factors to nurses' dissatisfaction at work and strategies for nurse leaders to boost nurse resilience	Building nurse resilience through formal education, social support, and meaningful recognition is an important focus for nurse leaders in establishing a healthy work environment and maintaining a stable nurse workforce. <p>Prioritizing the well-being of caregivers is necessary for patient safety, quality of care, and the patient experience.</p>
	The impact of nurse leadership styles on nurse burnout: A systematic literature review [43]	Evaluate the current literature published 2010 to 2019 and assess the impact of nurse leadership styles on nurse burnout.	Based on the literature, nurse burnout is reported globally, and nurse leadership plays a significant role in reducing nurse burnout. The major influencing leadership styles include authentic and transformational leadership. Competent leaders can reduce nurse burnout through

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Table 1 (continued)

Concepts synthesized	Article title	Purpose	Major findings and indications
	Self-care strategies to combat burnout among pediatric critical care nurses and physicians [22]	To determine perceptions of self-care strategies to combat professional burnout among nurses and physicians in pediatric critical care settings.	<ul style="list-style-type: none"> <li>empowering and promoting nurse engagement</li> <li>applying authentic and transformational leadership</li> <li>creating a healthy work environment</li> </ul> Six major self-care strategies were identified: <ul style="list-style-type: none"> <li>finding meaning in work</li> <li>connecting with an energy source</li> <li>nurturing interpersonal connections</li> <li>developing an attitude of positivity</li> <li>performing emotional hygiene</li> <li>recognizing one's uniqueness and contributions at work</li> </ul>
	Organizational strategies for creating a culture of well-being based on Human Caring Theory and a Self-Care ENERGY Model [21]	This study described the organizational strategies implemented to help team members during the pandemic and nurses' and patients' experiences through the health system's employee pulse-check surveys and patients' Hospital Consumer Assessment of Healthcare Providers and Systems survey.	The organizations' strategies include: <ul style="list-style-type: none"> <li>creating caring-healing environments</li> <li>supporting work-life balance</li> <li>creating space for self-care</li> </ul>
	A unitary caring science resilience-building model: Unifying the human caring theory and research-informed psychology and neuroscience evidence [48]	The purpose of this article is to introduce a Unitary Caring Science Resilience Model and explain the science behind the core strategies based on Unitary Caring Science philosophy and the psychological and neuroscience research.	The caring-theory guided resilience-building strategies are proven to alleviate the depletion of clinicians' energy and emotions. The practice can be rewarding if it becomes more aligned with clinicians' values to serve humanity. Through the unitary caring science resilience strategies, clinicians can build resilience as an antidote to clinician burnout and depletion. Nurse resilience was significantly correlated with: <ul style="list-style-type: none"> <li>age</li> <li>years of employment</li> <li>clinical rank</li> <li>education</li> </ul> Main job-related stressors included: <ul style="list-style-type: none"> <li>frequent inspections and examinations</li> <li>heavy workload</li> <li>mandatory overtime</li> <li>low wages</li> </ul>
	Current state and influencing factors of nurse resilience and perceived job-related stressors [46]	Examine the current state and influencing factors of nurse resilience and nurse perceived job-related stressors.	With limited information on the effectiveness of non-pharmacological interventions to manage fatigue, this review indicates the need for more non-pharmacological interventions to promote fatigue self-care and management. This study indicated a need for hospital leaders to find ways to reduce nurse work-related stress. Building nurse resilience should be an important focus for leaders.
Self-care – patients	Non-pharmacological interventions to manage fatigue in adults with inflammatory bowel disease: A systematic review and meta-analysis [50]	Evaluate the effectiveness of the current non-pharmacological interventions to manage fatigue in adults with inflammatory bowel disease.	The results of quantitative analysis supported the efficacy of telehealth and mHealth interventions to improve patients' <ul style="list-style-type: none"> <li>quality of life</li> <li>medication adherence</li> <li>disease activity</li> <li>medication monitoring</li> <li>disease-related knowledge</li> <li>cost savings</li> </ul>
	Telehealth and mobile health interventions in adults with inflammatory bowel disease: A mixed-methods systematic review [51]	Evaluate the efficacy of telehealth and mHealth interventions and explore the benefits and challenges of these interventions in patients with inflammatory bowel disease.	The results indicated high compliance rates of nurses' psychological care performance, which provides references for evaluating and monitoring inpatient psychological nursing care. The index can assist nurses in implementing psychological nursing care and improving the care provided to patients. Improved nursing care translates to improved patient outcomes.
	Applying a psychological nursing care quality evaluation index in hospitalized patients: A pilot study [52]	Test the feasibility of a Psychological Nursing Quality Evaluation Index in hospitalized patients and increase patients' self-care performance.	The study finds that it is necessary to increase young adults' awareness of using biofeedback training to improve self-care and management in chronic illnesses, such as hypertension. Young adults should improve their ability to use self-care to improve their health outcomes.
	A qualitative descriptive study: Young adults' experiences with biofeedback [49]	Explore young adults' biofeedback training experiences who had a family history of cardiovascular disease.	



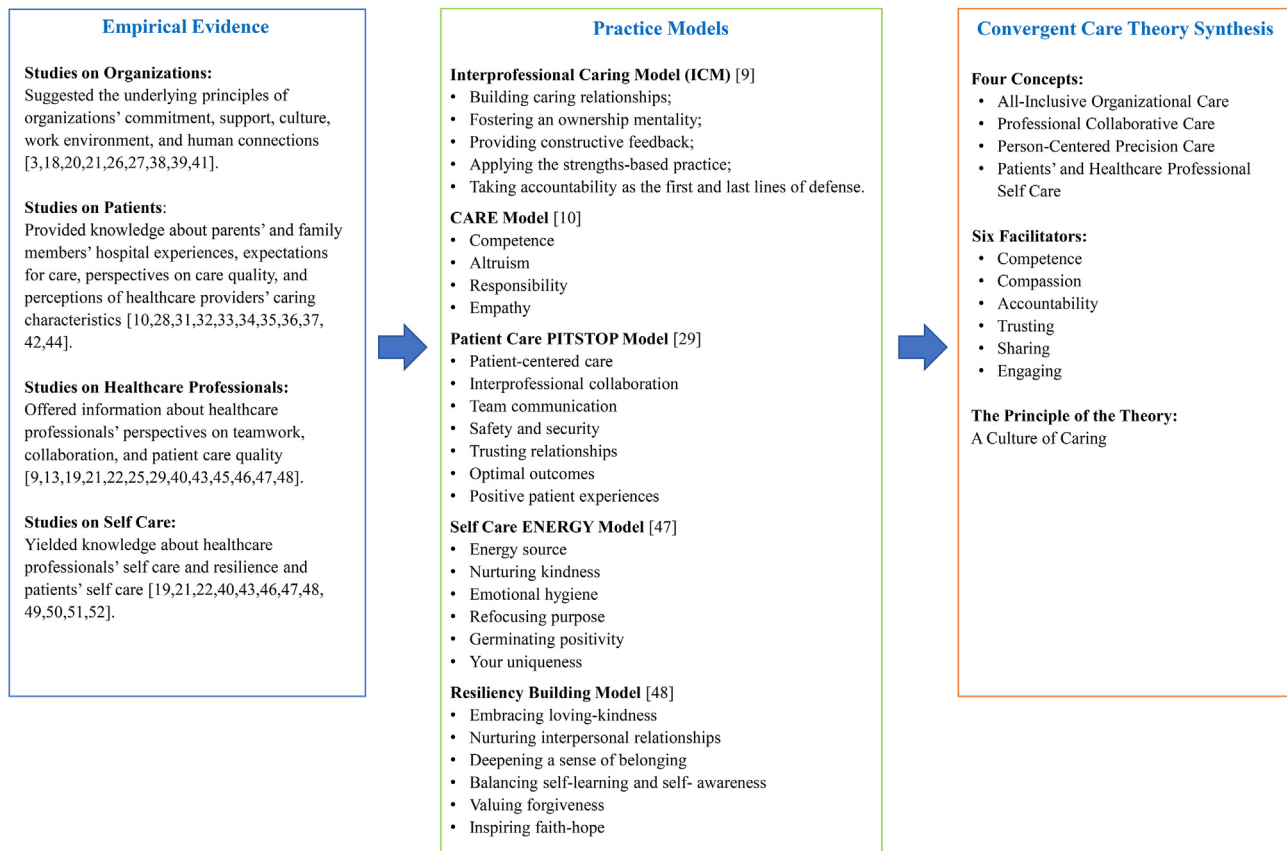


Fig. 1. Convergent Care Theory development process.

4.2. Empirical evidence-informed practice models leading to the theory development

Based on the empirical evidence stated above, five practice models have been developed: the Interprofessional Caring Model [9], CARE Model [10], PITSTOP Model [29], Self-Care ENERGY Model [47], and Resiliency-Building Model [48]. These models provided the theoretical foundations for the Convergent Care Theory synthesis.

4.2.1. The Interprofessional Caring Model [9]

The theory-proposing author led a research study exploring healthcare professionals’ perceptions of interprofessional collaboration and developed the Interprofessional Caring Model [9]. A qualitative study was conducted to interview 36 healthcare professionals in a United States university-affiliated hospital in 2017–2018. The healthcare professionals included hospital administrators, nurses, physicians, nurse practitioners, physician assistants, nurse assistants, and support personnel, such as chaplains and therapists. The model illustrated the professionals’ perceptions of healthcare professionals’ teamwork and collaboration. The Interprofessional Caring Model identified five processes promoting interprofessional care: Building caring relationships; Fostering an ownership mentality; Providing constructive feedback; Applying strengths-based practice; Taking accountability as the first and last lines of defense [9, p. 324]. This model proposed the underlying mechanism of the Convergent Care Theory, which is a culture of caring.

4.2.2. The CARE model [10]

The CARE Model recognizes four significant caring characteristics of healthcare providers: Competence, Altruism, Responsibility,

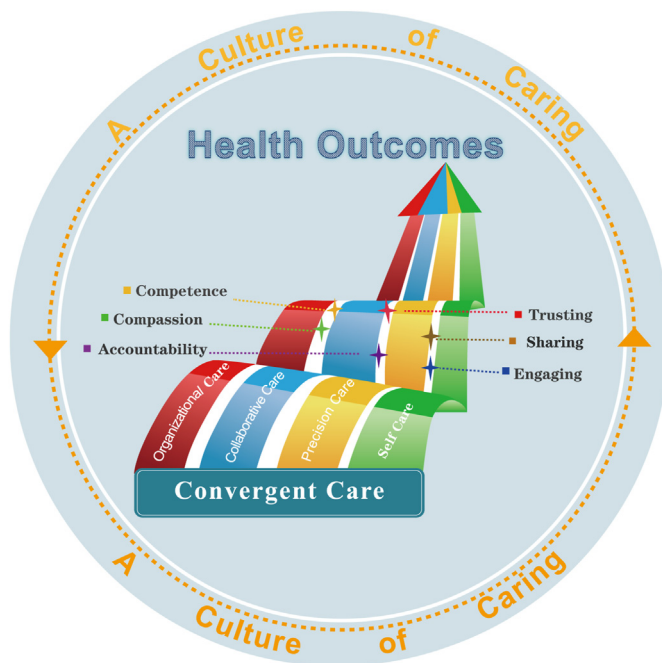


Fig. 2. The Convergent Care theoretical model.

and Empathy (CARE). The model was established based on the research findings of patients’ perceptions of healthcare providers’ caring behaviors [10]. This model was affirmed and expanded by nurses’ perceptions of caring actions through a cross-sectional

descriptive study surveying 157 nurses of a university-affiliated hospital across specialties [39]. The CARE Model indicated the qualities required for healthcare professionals to create a competent and caring atmosphere in healthcare organizations, laying the foundation for organizational care.

#### 4.2.3. The PITSTOP model [29]

The PITSTOP Model illustrated the importance of person-centered precision care, including patient-centered interprofessional collaboration, team communication, safety, security, trusting relationships, optimal outcomes, and positive patient experiences (PITSTOP) [29]. The model was synthesized based on the studies on healthcare professionals and parents of children with critical illnesses. The studies were United States-based, including 27 healthcare professionals and 13 parents of children with critical conditions, which focused on parents' and healthcare professionals' perceptions of quality of care. This model provided evidence underlying patients' individualized high-quality precision care.

#### 4.2.4. Self Care and Resiliency Building Models [47,48]

Self-care has been recognized as a vital essence for patients and healthcare professionals. The Quadruple Aim is a healthcare practice model, which emphasizes four important aspects of healthcare: promoting patient experience, advancing population health, decreasing costs, and enhancing healthcare professionals' health [53]. The Self-Care ENERGY Model [47] and the Resiliency Building Model [48] delineated ways to promote clinicians' self-care and well-being, supporting the Quadruple Aim and improving the work-life and well-being of healthcare professionals [53]. The Self-Care ENERGY Model acknowledges six strategies to refuel energy: Energy source, Nurturing kindness, Emotional hygiene, Refocusing purpose, Germinating positivity, and Your uniqueness (ENERGY) [47, p. 28]. The Resiliency-building Model outlines six strategies to foster resilience: Embracing loving-kindness for self and others; Nurturing interpersonal and intersubjective connections and relations; Deepening a creative use of self and sense of belonging; Balancing self-learning, self-awareness, and an evolved self-consciousness; Valuing forgiveness and releasing negativity; Inspiring and maintaining faith-hope [48, p. 130]. The goal of promoting self-care is to optimize healthcare performance and outcomes for all stakeholders.

## 5. Results

### 5.1. The concepts of the Convergent Care Theory

The results section explained the Convergent Care Theory concepts synthesized. Based on the empirical evidence and practice models, four Convergent Care Theory concepts were synthesized: organizational care, collaborative care, precision care, and self-care.

#### 5.1.1. Organizational care

In the Convergent Care Theory, organizational care refers to an organization's mission, goals, culture, and commitment to value employees' contributions, care for employees' well-being, and ensure resources for employees' work and safety. The wellness of a healthcare organization includes characteristics of kindness, integrity, righteousness, blameless, all-inclusiveness atmosphere (diversity, equality, and inclusion), commitment to care (staff, patients, community, and society), a clearly defined purpose, and a culture of caring [9,13,20,21]. The all-inclusive organizational care can support team members with different backgrounds, foster team members' engagement, and make them feel valued, included, and belong, which promotes patients' care atmosphere and quality. As Ray noted in her Bureaucratic Caring Theory, "caring is the

convergent focus of professional nursing ..., and is bureaucratic given the extent to which its meaning can be understood in relation to the rational-political, legal, social structure of a hospital and the extent to which the concept of bureaucratization is a part of the structure of complex organizations and social structures." [5, p. 163] The Convergent Care Theory emphasizes the importance of organizational resources, support, and culture to healthcare outcomes.

Optimal organizational care is the foundation of the internal code of an organization, determining organizational behaviors and affecting the organization's internal function and external reputation and business [9,19,20,29]. A positive organizational environment, culture, and support system empower team members, promote commitment and belonging, and reduce turnover [9,18,19,27,29,38–40,43,45]. Work environments, culture, and power-sharing leadership play a significant role in team members' job experiences and well-being, which affect clinicians' job performance, organizational resilience, and patient care quality [3,18,40,43]. Team members with strong organizational commitment tend to stay longer, perform to their best potential, and foster high-quality patient care [18,20,21,38].

Healthcare administrators must build an all-inclusive organizational culture to embrace diversity, inclusion, and equity. Organizational culture determines the effectiveness and success of organizational strategies and lays the foundation for strategies to take effect [9,18,20,21,26]. Healthcare is a complex adaptive system with multi-level stakeholders and professionals working together. The outcome of an all-inclusive atmosphere can help nurses and team members create caring-healing culture, communicate effectively without hierarchical privilege, value one another's input, and share organization and team goals and missions, which leads to the second concept of the theory, which is Collaborative Care.

#### 5.1.2. Collaborative care

From the Convergent Care Theory perspective, collaborative care is the unity of workforces, including intra- and inter-professionals, to work together and achieve the optimal outcomes at the patients', nurses', and health systems' levels. During the collaborative care process, healthcare professionals engage in complementary roles, work cooperatively, and share responsibility and resources to care for patients with the best team efforts [3,9,13]. Interprofessional collaborative practice refers to healthcare professionals with various professional backgrounds from different disciplines working together along with patients, family members, and communities to provide the best optimal care [3]. Interprofessional collaboration encompasses healthcare professionals' values, ethics, roles, responsibilities, communication, and teamwork [54].

Healthcare is like a team sport requiring every team member's effort to achieve a common goal. As indicated in the Synergy Model by the American Association of Critical-Care Nurses, it is vital to synergize nurses' knowledge, teamwork, and collaboration to promote health outcomes at various levels, including patients, nurses, and systems' outcomes [55]. An optimal desire is to have a stable team and practice with established players. A typical process of effective professional collaboration may experience three stages: the *establishing*, *functioning*, and *synergizing* stages.

The *establishing stage* is how healthcare professionals get to know one another and develop a team goal. This stage is like a running-in period, during which teams may experience uncertainty, hesitancy, and conflicts. Team members need to establish relationships and build trust, including knowing one another, building trust, working through conflicts, and sharing goals [9,13]. Team members attempt to find effective ways to communicate, build interpersonal relationships, and balance power.

The *functioning stage* is when team members reach a consensus on goals and cooperate more cohesively. In this stage, interpersonal

relationships grow, and team members become committed to one another. Members value individuals' contributions, share responsibilities and pride, and work together to achieve team goals [3,9,13,25].

The *synergizing stage* is when team members use their expertise to contribute and produce more comprehensive outcomes than the sum of members' individual effects. During this stage, team members are motivated to promote team goals and achievements. Individual members develop a sense of belonging [3,9,13,20,29], and team energy is synergized.

In healthcare, however, the teams may often comprise different team members in various situations, especially during emergency situations. Thus, teams may go through these stages at different speeds and forms. Some teams may be more stable than others with long-term team members, and other teams may need to quickly gather with less-familiar members during emergencies. Healthcare professionals must adjust, adapt, and work as a team effectively to provide the best optimal patient-centered care.

### 5.1.3. Precision care

In this theory, patient-centered precision care is defined as individualized, person-centered, and situation-specific care tailored to meet each patient's care needs. The principle of precision care stems from precision health or medicine, defined as an approach for disease treatment and prevention that considers individuals' variability in their specific genes, environment, and lifestyle to achieve optimal health outcomes individually [56,57]. Patients' care needs are different and, thus, should be tailored based on individuals' situations. Healthcare professionals should care for patients depending on their specific physical (involving genetics/genomics), environmental (comprising epigenetics/epigenomics), mental, emotional, cultural, and spiritual needs [3,27,28,37,50,51].

Implementing this domain requires and allows healthcare professionals to design personalized, precision programs to predict and provide precise patient care. Healthcare professionals are at the front line and are largely responsible for patients' health. Thus, caring for patients based on individualized, person-centered, and situation-specific care can help specify patients' care strategies and help them live their lives to the highest potential.

### 5.1.4. Self-care

In the Convergent Care Theory, self-care is the process in which individuals take care of themselves by actively engaging in healthy behaviors and activities to promote health, prevent illnesses, and manage illnesses when they occur. This concept comprises health promotion, disease prevention, self-administration of medication, care for dependents, rehabilitation, palliative care, and getting care from health providers as needed [58]. From the Convergent Care Theory perspective, self-care has two facets – patients and healthcare providers.

There is growing awareness for patients with chronic conditions to participate actively and be involved in their own self-care. The growing healthcare costs are considered a major driver for promoting patients' illness and disease self-care and management. As chronic disease escalates, there is a surging demand for people to have self-care knowledge and take more responsibility for their own care [59,60]. Self-care means maintaining one's health using health-promoting practices and managing disease symptoms upon occurring [61,62]. Individuals with chronic illnesses only spend a small fraction of their time in healthcare, and most of the health maintenance, disease management, and illness prevention are taken care of by the individuals and caretakers as self-care undertakings [61,62]. The principles of the self-care concept are efficient self-management, improved decision-making, and cooperation between patients, families, and healthcare

professionals.

Caring for others is a core value for healthcare professionals, a natural drawing for many to the healthcare profession. However, even though the work is rewarding, healthcare professionals often face stressful work situations, traumatic events, high-intensity workloads, unpredictable work shifts, and long work hours, which places healthcare professionals at high risks for psychological issues, such as stress, depression, anxiety, and burnout. Thus, despite the intention of organizations' support, organizational care alone may not be sufficient to maintain employees' well-being, and self-care becomes critical for healthcare providers' health [22,53,63].

Practical self-care strategies are critical for healthcare providers. Some effective strategies used by healthcare providers include finding meaning in work, connecting with an energy source, nurturing interpersonal connections, developing an attitude of positivity, performing emotional hygiene, and recognizing one's uniqueness and contribution at work [22, p. 44]. Other self-care strategies are described in the ENERGY Model – Energy source, Nurturing kindness, Emotional hygiene, Refocusing purpose, Germinating positivity, and Your uniqueness [47, p. 28]. The resiliency-building strategies comprise facilitating social connections, promoting positivity, capitalizing on nurses' strengths, nurturing nurses' growth, encouraging nurses' self-care, fostering mindfulness practice, and conveying altruism [19, p. 681]. Other resiliency building strategies are illustrated in the Resiliency-building Model: Embracing loving-kindness for self and others; Nurturing interpersonal and intersubjective connections/relations; Deepening a creative use of self and sense of belonging; Balancing self-learning, self-awareness, and an evolved self-consciousness; Valuing forgiveness and releasing negativity; Inspiring and maintaining faith-hope [48, p. 130].

## 5.2. The facilitators of the convergent care

Achieving convergent care is a process, which needs all stakeholders to work together. It calls for facilitators to promote the process. Six major facilitators emerged from the research evidence, including competence, compassion, accountability, trusting, sharing, and engaging.

### 5.2.1. Competence

Competence is a set of knowledge and skills enabling the adequate performance of a job and working efficiently as required by the job or task. In clinical practice, healthcare competence comprises intertwined components, such as professional knowledge, skills, behavior, and judgment [10,25]. Professional competence lies at the heart of a profession's ability and a cornerstone against which professionals are measured for success [3,10]. Patients trust their lives with healthcare professionals. It is essential for healthcare professionals to update and maintain their competence to ensure optimal outcomes for patients and society.

Maintaining competence is a collective obligation and effort of both healthcare professionals and organizations. It is critical for healthcare organizations to engage nurses in fulfilling competence assessment and maintaining the most up-to-date nursing knowledge and skills. One way to motivate healthcare professionals' competence is through value sharing, aligning personal and organizational goals and missions. Organizational values are the moral and operational guidance for individuals and teams' development and culture, inspiring team members to update their professional knowledge and work together to fulfill professional and organizational goals [3,9,10,20,29]. Healthcare professionals' competence is essential for healthcare stakeholders, including patients, peers, organizations, and society. In addition to having the intertwined

components, such as knowledge, skills, and judgment, healthcare professionals also require compassion in practice.

### 5.2.2. Compassion

Compassion is the moral, ethical, and humanistic aspect of nursing care and the philosophical foundation of the nursing profession. Research suggests a direct relationship among patients' perceptions of organizations' support, commitment, caring culture, care quality, and nurses' caring compassion [9,20,21,26,27,29]. Without caring and compassion, professional knowledge and skills may not be delivered effectively [26,28]. Caring and compassion can add a human touch to interpersonal interactions and give meaning and purpose to daily actions.

Organizational leaders play a significant role in promoting healthcare professionals' caring and compassionate actions toward themselves and others [3,26]. It is essential for healthcare organizations and leaders to help healthcare professionals to maintain competence, knowledge, skills, and caring behaviors. A caring and compassionate attitude can be fostered through cultivating positive leadership and building caring relationships at work [3,20,26,28]. Some ways to promote compassion include performing love-kindness to others and self, cultivating healthy work environments, respecting one another and human dignity, and developing caring relationships and collaborations [3,20,25,26,29]. Compassionate care can be promoted through supporting interpersonal connections, building positivity on the units, nurturing professional growth, and encouraging healthcare professionals' self-care and well-being [3,19,48]. To ensure patients' quality of care, healthcare professionals' accountability is essential.

### 5.2.3. Accountability

Accountability is taking responsibility for one's professional judgments and actions and upholding one's professional knowledge, competency, professional standards, and patient care quality. Professional accountability underpins the safe professional practice, addressing the need for knowledge, skills, and attitudes required for professional accountability and reinforcing congruence and consistency between professional actions and standards to ensure quality and safe patient care [64–68].

Healthcare professionals are held accountable for the care they provide to patients. They should fulfill their obligations stated in the professional code of ethics, which clarifies a profession's roles and responsibilities and guides professionals to address questions related to ethical issues in practice. From patients' and co-workers' perspectives, great healthcare providers are not only competent in and responsible for their professional knowledge and skills but also caring, compassionate, empathetic, and altruistic [3,10]. Being accountable is vital because their actions affect the outcomes of many, including patients, families, healthcare professionals themselves, organizations, and society.

### 5.2.4. Trusting

Trusting is the belief and confidence in a person's reliability and ability to fulfill the commitment promised. In healthcare, trusting signifies healthcare professionals' caring characteristics, knowledge, and skills in promoting health outcomes and represents confidence, reliance, honesty, and sincerity. Trusting relationships among the healthcare stakeholders facilitate organizational commitment, support, culture, team collaborations, self-care, and high-quality person-centered patient care [9,29]. Trust is an effective component in ensuring healthy work environments, teamwork, and organizational performance [10,25]. It is vital for patients to trust healthcare professionals and for team members to trust one another.

On healthcare teams, trusting is a key concept and facilitator for creativity and team success. An important antecedent or

foundation of collaboration is fostering trust and caring relationships among team members, which are essential in promoting a team's caring culture and collaboration [64]. Trust is the power that can bond a team together and create a sense of belonging [3,10,20,27,29]. When trusting one another, team members tend to join forces and achieve goals [3,9,29]. Trust can inspire team members and unite individual strengths to achieve optimal outcomes. The sense of belonging and caring working relationships are motivational factors for collaborative care.

### 5.2.5. Sharing

Sharing is team members' commitment to sharing values, goals, and leadership. Shared values and goals, such as delivering high-quality patient care, can help team members unite and foster professionals' stewardship [9,13]. Shared leadership encourages team members' ownership mentality and commitment to achieving common goals. An ownership mentality refers to having the autonomy and obligation to make decisions for group tasks, take responsibility for outcomes, and offer suggestions for improvement [9,13]. The ownership mentality nurtures nurses' shared governance and leadership mindset and fosters nurses' commitment as the first and last line of defense for patients' safety [9,13]. The sense of ownership can motivate team members to do their share, be accountable, and work together towards the common goals [3,9,13].

The level of healthcare professionals' engagement and ownership mentality can motivate team members to not only "see" the problems but also take responsibility and bring solutions as decision-makers. Sharing can be achieved by sharing leadership, building trust, and communicating effectively between and among leaders and team members. Shared leadership is a process and a leadership style to delegate and distribute leadership responsibility to team members within a team and organization. Team members share decision-making, vision, goals, trust, values, and responsibilities [3,9,13,38,41]. Because of the willingness to share, team members develop an accountable mindset for the entire team's success. Trusting relationships and sharing may enable healthcare professionals' engagement.

### 5.2.6. Engaging

Engaging is to create and sustain supportive team environments, encourage individual contribution and accountability, and enable team members to foster competence and compassion [3,9,13,19]. Engagement is characterized by team members' showing high enthusiasm, motivation, dedication, vigor, and absorption at work [38]. An engaging team has a healthy work environment that promotes trust, accountability, and compassion and increases team members' commitment to participation [41,43]. Team members' engagement significantly affects collaborative care accomplishments and patients' outcomes [38,41,43].

Team members' engagement can be promoted through empowerment. Empowerment supports team members with authority and power to help them contribute at their highest capability based on their experience and expertise. Empowerment fosters a shared leadership and accountability culture, where team members feel valued and committed to achieving a common goal. The organizations with empowered teams and members have a relatively collaborative hierarchical leadership structure and a high proportion of highly trusted members [9,29,43].

## 5.3. The theory assumption statements

Four theory statements are formed and expressed in the following assumptions.

- Assumption 1. Optimal healthcare outcomes depend on the convergence of all-inclusive organizational care, healthcare professional collaborative care, person-centered precision care, and patients' and healthcare providers' self-care.
- Assumption 2. Organizational care can support collaborative care, precision care, and self-care, which, in turn, enhance organizational health.
- Assumption 3. Collaborative care depends on the alliance and synergism of all stakeholders, including organizations, healthcare professionals, patients, and families.
- Assumption 4. The process of convergent care can be enabled by the following facilitators: competence, compassion, accountability, trusting, sharing, and engaging.

## 6. Discussion

This article introduced the development process of an evidence-informed Convergent Care Theory. This theory signifies the importance of care convergence, emphasizing that high-quality patient care and optimal health outcomes require all-inclusive organizational care, interprofessional collaborative care, person-centered precision care, and effective patients' and healthcare professionals' self-care. Convergent Care Theory aims to unite healthcare stakeholders, bond resources, and join forces to achieve optimal healthcare outcomes.

The convergent care facilitators include competence, compassion, altruism, engaging, sharing, and belonging. These concepts align with the theoretical philosophy of the theory, the unity of all ways of knowing, including research evidence, experiences, and perceptions. The theory proposes that nursing practice requires professional knowledge and humanistic characteristics. Healthcare professionals' collaborative care can lead to unity, efficiency, and quality under a caring culture. The caring atmosphere motivates individuals to develop professionally, work together, and perform at the highest professional capability.

### 6.1. Strengths

Interprofessional collaboration and caring are fundamental elements in the Convergent Care Theory and clinical practice. Compared with theories, such as caring, self-care, and interprofessional collaboration-related theories [5,59,61,62], the Convergent Care Theory covers the organization, collaboration, precision care, and self-care from a more inclusive and holistic perspective. This theory not only shows the phenomenon of caring, collaboration, and the practical process of collaboration and teamwork but also the "why" behind the phenomena. The essence of caring and collaboration is the culture of caring. Team members care for one another to collaborate. The major facilitators for establishing a caring culture and effective collaborations are professional competence, compassion, accountability, trust, sharing, and engagement. This theory leads the way of considering multiple aspects of health services and multi-layered stakeholders to promote the effectiveness of care delivery and achieve the best optional outcomes. The increasing complexity in healthcare creates problems and challenges, yet it also provides opportunities for creativity in relationship building, interdependencies, and innovative care models. The Convergent Care Theory aims to address these issues and challenges.

The Convergent Care Theory was developed based on substantial empirical evidence through clinical research studies and relevant literature (systematic, integrative, and critical reviews) in recent years. The theory was originated from clinical practice with the potential to guide and support clinical practice. In addition, this theory embraces the healthcare systems' multi-facet

characteristics, addresses empowerment and power in team-building, and reflects organizational diversity, inclusion, and equity. Another strength of the theory is the convergence of science and art. It describes and explains a phenomenon that effective care requires a combination of science and art – scientific knowledge and caring humanity.

### 6.2. Limitations

The theory, however, currently lacks a systematic scale to measure the progress of the theory-based practice. Each concept needs to be measured using separate scales. A Convergent Care Scale is needed to measure the effectiveness of professional collaboration, patient care quality, and organizational culture, support, and commitment. Another weakness or limitation is that this theory was developed mainly based on the research evidence from hospital-based care and experiences. It needs to be validated in different healthcare settings, such as community and rehabilitation settings.

### 6.3. Clinical implications

Hospitals can design their practice models based on the Convergent Care Theory. For example, hospitals can establish their organizations' mission, values, and goals based on the four concepts, organizational care, collaborative care, precision care, and self-care, with a clear picture of what they want to accomplish. They can develop specific strategies based on the facilitators, including ways to promote professional competence, compassion, accountability, trust, share, and engagement, based on their organizations' exact situations and needs.

For example, three hospitals developed and implemented their nursing practice models based on the concepts and facilitators. One of the hospitals designed eight factors to promote care delivery, four factors for healthcare professionals and four for patient-related education and care. They developed a visual practice model, made flyers, and established outcome measures for the hospital. Another hospital used a similar process but developed different strategies and outcome measures based on the theory's concepts and facilitators. The third hospital developed organizational strategies to promote the hospital's caring culture, support, healthcare professionals' self-care, well-being, employee engagement, and patients' experience [21].

These hospitals defined the concepts based on their hospitals' needs and requirements and operationalized the concepts to guide nurses' practice. For example, for the "Competence" concept, one hospital defined it as nurses' ability to provide care for patients and their families, including organizations' proficiency of continuing education and nurses' aptitude for collaboration. Competence comprised nurses' proficiency in teamwork and collaboration between and among nurses and healthcare professionals of other disciplines.

## 7. Conclusions

This article introduced the development process of an evidence-informed theory. The Convergent Care Theory was synthesized from clinical empirical evidence related to the key healthcare stakeholders, including healthcare organizations, professionals, patients, and families. It takes the unity of all-inclusive organizational care, effective interprofessional collaboration, patient-centered precision care, and patients' healthcare professionals' self-care to achieve optimal health outcomes. With the underlying principle of a culture of caring, this theory addresses collaboration, power- and resource-sharing, teamwork and engaging, diversity,

inclusion, equity, and self-care in clinical settings. Convergent Care Theory strives to unite healthcare stakeholders, bond resources, and join forces to achieve optimal healthcare outcomes. The underpinning of the theory is a caring culture, which is an underlying code for organizational and team behaviors and the foundation of optimal health outcomes.

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### Ethical approval

Not Applicable.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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