

Original Article

Competence Transformation in Healthcare Contexts: A Concept Analysis

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Abstract

Aim: This study aims to understand what competence transformation is in healthcare contexts and to develop an operational framework of the concept.

Background: Globally, healthcare systems are unsustainable. Stakeholders are rejecting the current lack of competent healthcare staff, rising costs, myopic focus on the capacity of acute care, and volume-based model. Transformation in healthcare systems seeks more health value and a more performance-based and outcome-driven approach. These changes require competent healthcare professionals who ensure high quality patient-centred care, increase efficiency and effectiveness.

Design: The method used in this paper was the approach of Walker and Avant (2019).

Data Sources: Altogether 26 articles were analysed following search of CINAHL, PsycINFO and Scopus and limited to those published after the year 2012.

Review Method: Walker and Avant's concept analysis was performed to identify the attributes, antecedents, consequences and empirical referents of competence transformation of healthcare professionals. Model, related, and contrary cases were constructed.

Results: Three defining attributes of competence transformation were identified: capacity for renewal, quality of execution, and sustainability development. Antecedents included internal (individual) and external (organisational) factors. Consequences were organisational outcomes, patient outcomes, and staff outcomes.

Conclusion: A theoretical definition and operational framework of competence transformation in healthcare were developed. The definitions and intended empirical referents of all three attributes can be used as indexes to evaluate the transformation of professional competencies in healthcare settings. Competence transformation is required to improve and assess the possible implementation of future research.

Keywords: competence, concept analysis, healthcare, hospitals, professionals, transformation.

Introduction

Healthcare systems have historically promoted adequate access to their benefits and worked to ensure that they deliver care of consistently high quality. They are nevertheless prepared to outstrip resources, raising complex questions of how best to make them sustainable (Sisman et al. 2012). Escalating costs, stretched delivery commitments, unsustainable business models,

and above all, a lack of up-to-date, transformable and skilled professionals, increasingly put pressure on economies and people alike (Gonzalo et al. 2018). This leads all healthcare organisations and strategic leaders to explore ways to transform the entire industry without the need for major investments (Sisman et al. 2012).

The conditions for genuine healthcare reform appear to be emerging, with greater emphasis driven by a simple shift of all healthcare

stakeholders – providers, governments, payers, consumers and others (Bergh et al. 2016). The ultimate form of this transformation is still unknown, but some of its broader goals are taking shape (Sisman et al. 2012; World Health Organization [WHO] 2017). The emerging system will consider consumers' views of care delivery rather than the lens of healthcare professionals or a particular healthcare setting, in a reorientation of healthcare delivery towards proactive primary and community services rather than reactive and often preventable healthcare (Salmond & Echevarria 2017). The solutions to some of these aspirations will not be entirely new – the focus will rather be on how best to integrate technologies and processes to make significant improvements (Abraham, Nishihara & Akiyama 2011).

The transformation will focus on exploring ways to reconfigure the healthcare system from a volume-based, fee-for-service model to a more performance-based, outcome-driven approach (Salmond & Echevarria 2017). The WHO (2017) encourages healthcare leaders to create innovative ways to both increase overall efficiency and transform the industry without increasing healthcare expenditure. This must include competence transformation of healthcare professionals. These shifts need an integration of knowledge, skills and attitudes of healthcare professionals, with a renewed focus on overall safety, agility, efficiency and quality of the transformed system (Institute of Medicine [IOM] 2011). As healthcare systems undergo transformation, patients need enough healthcare providers and highly competent staff who improve the overall safety and quality transformation system in all healthcare contexts (Gonzalo et al. 2018).

Therefore, to be significant in this change, healthcare providers must assess the internal (individual) and external (environmental) factors that affect healthcare worker competencies to improve healthcare system outcomes.

Methods

Study design: The systematic approach of Walker and Avant's method (Walker & Avant 2019) was used to (a) determine and clarify the definition of competence transformation, (b) recognise the main domains and features of the concept that affect the research evidence of healthcare professionals in clinical practice, and (c) develop a theoretical definition and

operational framework of competence transformation. This method comprises eight systematic steps: select a concept, identify the purpose of the analysis, recognise all uses of the concepts, determine the defining attributes, develop a model case, identify borderline, contrary and related cases, identify antecedents and consequences, and state empirical referents.

Data sources: A computerised search strategy was developed with an information specialist. The data search was limited to the years 2012 to 2019, and peer-reviewed articles in the English language with abstract available. The literature search of the PsycINFO, CINAHL and Scopus electronic databases using the following search terms: (competence OR competency OR competenc*) AND (transformation) AND (healthcare OR 'health care' OR hospital*). Total of 426 articles were retrieved after duplicates were removed. Titles and abstracts of full text articles were screened, and eligibility criteria were applied. Twenty-six studies were thus ultimately selected; the literature selection process is illustrated by the PRISMA flowchart presented in Figure 1.

Results

Select the concept: Understanding the concept of competence transformation is critical in ensuring that healthcare professionals have the knowledge, skills and attitudes to perform tasks to acceptable delivery standards. Many definitions for competence transformation exist in the literature, but tend to be generic (Salmond & Echevarria 2017; WHO 2017)

The WHO (2020) defines competence as a condition of being capable through a specific range of skills, knowledge or abilities. In healthcare settings, competence encompasses important knowledge and skills that enable professionals to perform high-quality services and safe practices (Albarqouni et al. 2018; WHO 2017).

Regardless of the context, transformation means to transcend from a static state (Rothwell et al. 2016). Transformation is the process of shifting the structural conditions of a working environment while empowering the organisation and professionals with a clear shift-kit or a roadmap that focuses on value proposition, innovation, efficiency, sustainability, shift from volume to value, and feelings and behaviour management (Beliveau et al. 2015).

The combination of those definitions encapsulates aspects of talent transformation in the skills, knowledge and attitudes required to achieve and sustain new levels of competitive performance in the digitalised healthcare industry (WHO 2017).

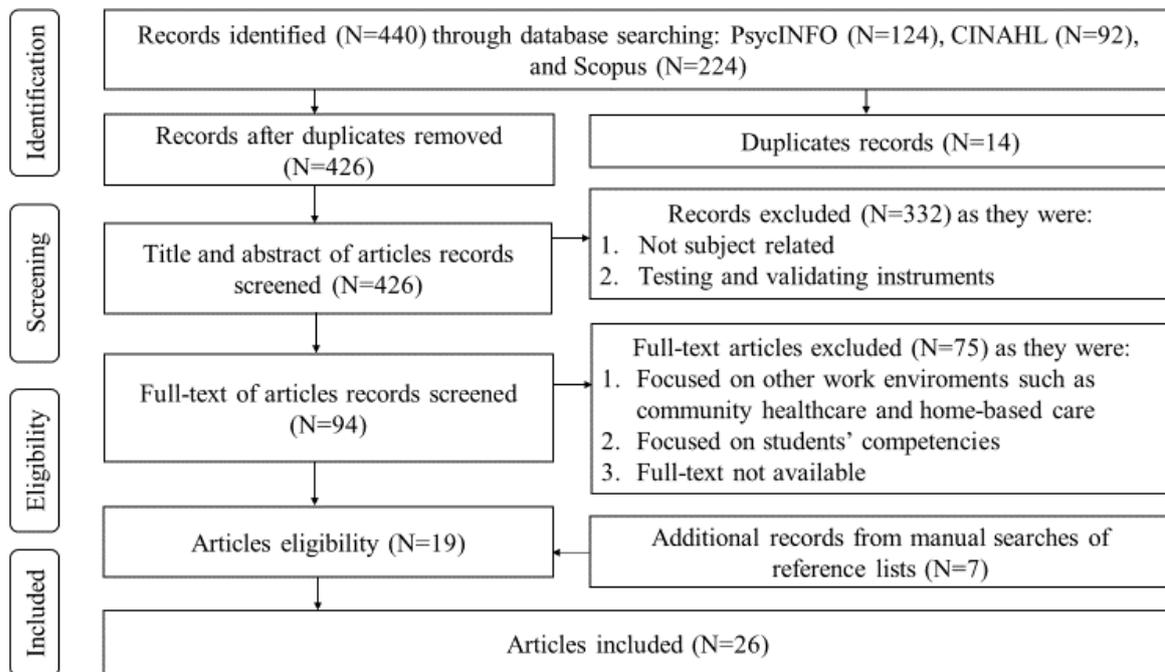


Figure 1: PRISMA flow chart for literature selection process

Determine the purposes of the analysis: The purpose is to understand and clarify what competence transformation is in healthcare contexts, and to develop an operational framework of the concept. The former purpose provides a framework of the concept in relation to the state of science and ongoing industrial transformation, while the latter explains how it can be implemented in the clinical context.

Identify all uses of the concept: This step is to identify and synthesise relevant applications of the concept, supporting the selection of defining attributes (Walker & Avant 2019). No common and consistent description of the competence transformation concept in healthcare exists in the literature.

This transformation is nevertheless taking shape. The passage of the Affordable Care Act (ACA) in 2010, for instance, has initiated transformation in the US healthcare system that continues to accelerate (Kirch & Ast 2017). The ACA requires all healthcare professionals to be more independent and function efficiently in teams (Kirch & Ast 2017), communicate effectively with patients and medical professionals (Tutuncu

et al. 2014), ensure quality improvement and enhance safe practice (Greenwood 2019), adhere to professional ethics and maintain professionalism (Egener et al. 2017).

Determine the defining attributes: Walker and Avant define attributes as the qualities or characteristics that are frequently associated with the concept, providing additional understanding of its meaning (Walker & Avant 2019). In this concept analysis, three defining attributes were identified, comprising many dimensions and characteristics commonly associated with the competency transformation concept. The three attributes are capacity for renewal, quality of execution, and sustainability (Supplementary File 1).

Capacity for renewal: This attribute measures the readiness of an organisation to be fully engaged, agile and futuristic to position itself in reference to the internal and external environments and transformations (Delaney 2016; Salmond & Echevarria 2017; WHO 2017). This renewal readiness needs healthcare professionals to be equipped to lead the transformation from episodic, provider-based,

fee-for-service care to collaboration and teamwork-based, patient-centred care that provides quality and safe practice in clinical settings (Salmond & Echevarria 2017).

The integrative set of skills and competencies for transformation includes research and evidence-based practice (EBP), personal and professional development, and leadership (D'Souza et al. 2015; IOM 2011). These can be interpreted in transformative, practitioner-driven continuing professional development (CPD) that provides the framework for workplace learning and effective cultures.

Quality of execution: This attribute demonstrates the operational efficiency and effectiveness for an organisation to execute the transformational strategies that further improve delivery quality, competitiveness and customer satisfaction (IOM 2011). Healthcare is undergoing significant transformation to reduce costs and improve quality and client experience. Interprofessional collaboration and education are now viewed as the best method to move healthcare toward patient-centred care (Johnson 2017; WHO 2017).

The capacities of individuals are central in assuring quality of care. Nevertheless, organisations must reshape their strategies around values, strong interpersonal relationships and improved end-to-end delivery systems (Brennan & Monson 2014). This organisational reshaping includes developing a compassionate culture of collaboration, adhering to core values of professionalism and ethics, ensuring productive communication, and working to promote quality and safety improvement practices (Plochg et al. 2009; Tutuncu et al. 2014).

Sustainability: This attribute defines the ability of an organisation to be sustainable by incorporating technological advancements and patient-centred care (Delaney et al. 2015; Fearing, Barwick & Kimber 2014). Competence transformation in leadership plays a central role in this attribute. Dickson (2016) urged healthcare professionals to take professions, patients and public communities as partners in the evolving transformation, and to embrace technological advances as an opportunity to improve competitiveness and sustainability. Kennedy and Moen (2017) stated that healthcare transformation requires strategic and tactical informatics competencies including (but not

limited to) use of exception-based tools, machine learning and smart dashboards. This transition needs a competent provider with knowledge, skills and attitudes in patient-centred care, information technology (IT), digital health, integrated care coordination and data analytics (Klecun 2016; Fix et al. 2017). This ensures that healthcare professionals become 'multipliers' and embrace innovation.

Identify a model case: A model case is an example of the use of the concept that demonstrates all the defining attributes of the concept (Walker & Avant 2019). Sarah is a 40-year-old recognised leader in the emergency department. Sarah adopts an inspiring leadership style that challenges her staff nurses to continuously reflect on their delivery styles in reference to established EBPs. She always encourages the team and declares the 'best nurse'. Sarah frequently meets nurses to review and renew their capacity and educational level. Nurses have started to feel engagement and progression in skills and abilities that make them happy in the workplace. Sarah has also designed a quality of execution model for the staff nurses to gauge their professionalism, effective communication with each other and with patients, teamwork, and collaboration with other medical teams while preserving the ethical and legal principles. This has helped to improve the performance of staff based on key performance indicators, which results in quality improvement and safe practice. Additionally, Sarah maintains sustainability of healthcare through information systems using latest technologies for nursing documentation, smart learning and others. For staff who are not familiar with digitalised services and documentation, the appropriate training programme is provided. Besides that, Sarah focuses more on patient-centred care and engages patients in decision-making. Sarah works effectively with other team leaders and is competent in presenting her unit issues and problem-solving during their meetings.

Borderline case: Borderline cases are those examples or instances that contain most of the defining attributes of the concept being examined but not all of them (Walker & Avant 2019). Reem is a registered nurse working in the medical department. After receiving handover, Reem is assigned to care for Laya, a 25-year-old woman, who was diagnosed with human immunodeficiency virus (HIV) four months ago. Laya is married and is currently two months

pregnant. Reem effectively communicates with the patient and her husband about precautions and adhering to treatment and screening. Laya and her husband are involved in decision-making. Reem documents the patient's data using IT. Reem works with a team to plan a campaign to educate patients with HIV and give them awareness about adherence to treatment, precautions and screening.

Contrary case: Contrary cases are clear examples of “not the concept” (Walker & Avant 2019). David is 30 years old and works in the medical department. One day, David is assigned to care for a male patient aged 67 years diagnosed with a cardiac problem. While David is checking the vital signs of this patient, he notes that the patient is having shortness of breath. Suddenly, David runs away to call other staff and says, “What should I do? I have not seen him like this before and I am not sure what to do with this patient.” The patient becomes unresponsive after complaining of chest discomfort and breathlessness for a few hours. At this time, the team leader assesses the patient and finds that he is in cardiac arrest with significant frothing around the mouth. David calls the cardiopulmonary resuscitation team, but it is too late.

Related case: Related cases are concepts that are similar or related to the concept being studied but do not include all the dimensions of the defining attributes presented (Walker & Avant 2019). Our analysis identified personal and professional transformation, workforce development and competency development as terms used interchangeably with competence transformation.

Personal and professional transformation: This is a multidimensional concept that promotes consistent and sustainable holistic practice in healthcare. The BirchTree Center Model is an integrative, interdisciplinary, progressive practice model used by all disciplines within healthcare settings (Shanahan 2020). This model helps individuals to expand their awareness with each transformative experience.

Workforce development: Workforce development has more recently taken a central place in leadership frameworks of advanced healthcare systems. This has been in response to fundamental sector challenges, rising expectations and growing transformational aspects, leaving healthcare professionals no option but to enhance their technical and

interpersonal skills to align with new quality measures (WHO 2020). It was noted that workforce development as one of Connecticut's Transformation Priorities, together with other focus areas of children, family and public services; community education; and data-driven decision-making (Allied Health Workforce Policy Board 2020). Such transformation priorities focus on the behavioural and technical development of the workforce to assure agility, resilience and innovative approaches to long-standing healthcare challenges.

Competency development: Competence development is the process of upgrading healthcare professionals' capabilities and capacities in line with the organisations growth aspirations (Sastre-Fullana et al. 2017). The competence of healthcare professionals considerably affects quality of care and patient safety. Competence development should begin at the early stages of education and continue throughout the professional career (WHO 2020; Wilkinson 2013).

Identify antecedents and consequences: Antecedents are the events or incidents that arise prior to the existence of the concept (Walker & Avant 2019). The antecedents of competence transformation were identified as internal and external factors, which are motivating factors for healthcare professionals that can increase their job satisfaction and improve work performance.

Internal factors determine individuals' ability to develop and sustain competencies to deliver work. These include individual characteristics, personal motivation and peer support, peer accountability, self-efficacy, emotional intelligence, work value and strong interpersonal relationships (Manley et al. 2018; Salmond & Echevarria 2017; Sanner-Stiehr & Kueny 2017).

External factors play an important role in environmental changes to achieve safety, effectiveness and efficiency. These include financial pressure, organisational structure, workplace culture, environmental characteristics and educational development (Brisolara et al. 2019; Johnson 2017; Scott & Pringle 2018). Extensive education and training programmes are needed to develop knowledge, skills and attitudes of all core competencies of healthcare professionals (Kirch & Ast 2017).

Consequences are events or incidents that occur as the outcomes of a concept and may often

generate creative resolution in the form of new ideas. In this analysis, the consequences of competence transformation demonstrated by research include confidence (Tutuncu et al. 2014), improved patient safety and service quality (Brennan & Monson 2014; Leape et al. 2009), job satisfaction and retention (Johnson 2017, Manley et al. 2018), increased nurse innovation and patient satisfaction (Johnson 2017), decreased mortality and medication error (Sanner-Stiehr & Kueny 2017), increased sustainability (Fearing et al. 2014) and reduced costs (Abraham et al. 2011).

Define empirical referents: Empirical referents measure the concept by applying defining attributes in real settings. To date, researchers have not applied empirical referents to measuring the attributes of competence transformation. However, the related empirical measures are associated dimensions of each attribute of competence transformation. Table 1 shows competency instruments with their related sub-scales and characteristics. Each competency instrument captures associated dimensions of defining attributes: capacity for renewal, quality of execution, and sustainability (Cowan et al. 2008; Honey et al. 2017; Lee et al. 2014; Liu et al. 2007; Sastre-Fullana et al. 2017; Tromp et al. 2012). The leadership and management domain is an important sub-scale with all defining attributes (Liu et al. 2007; Sastre-Fullana et al. 2017; Tromp et al. 2012). A comprehensive instrument for healthcare professionals can be developed by combining those sub-scales and domains.

Proposed theoretical definition and operational framework : The preceding analysis led to the development of the following theoretical definition of competence transformation in healthcare contexts.

Competence transformation is a concept of transforming healthcare professionals with mastery of knowledge, new skills and attitudes required to achieve and sustain performance in the digitalised and interconnected healthcare industry.

An operational framework of competence transformation is proposed in Figure 2. This concept analysis identified the antecedents and consequences of competence transformation. The attributes of this concept analysis were identified through clustering competency-related dimensions and characteristics to develop quantitative measures of capacity for renewal, quality of execution, and sustainability.

Effective and systematic coupling of internal and external antecedents will ensure thorough understanding of the aspects and the interplay of healthcare competencies, which together ensure successful patient, staff and organisational outcomes (Manley et al. 2018).

Organisational outcomes, staff outcomes and patient outcomes depend directly on the competence standards of healthcare professionals (Gonzalo et al., 2018; Johnson, 2017; Manley et al., 2018). The continuous evaluation of these competences has therefore become crucial for strategic healthcare planners (Wilkinson, 2013). Healthcare professionals must demonstrate competence to a standard that enables efficient and effective delivery of high-quality healthcare.

Duygulu and Kublay (2010) stated that leadership is important for professionals in healthcare settings. To make changes and ensure the quality and productivity of healthcare services, nurses and all healthcare professionals should be competent enough and have responsibilities to deliver clinically appropriate care to patients, families and communities.

Table 1: Dimensions of each defining attribute of competence transformation measured by competency instruments

Author, year, instrument	Quality Improvement	Safety	Professionalism	Communication	Ethical and Legal Issues	Research and Evidence-Based Practice	Personal and Professional Development	Teamwork and Collaboration	Leadership and Management	Patient-Centred Care	Health Information Technology
Cowan et al. (2008), EQT	-	-	-	×	-	×	×	-	-	-	-
Honey et al. (2017), Nursing Informatics Competencies	-	-	-	×	-	-	-	-	×	-	×
Lee et al. (2014), PSCSE	-	×	-	-	-	-	-	-	-	-	-
Liu et al. (2007), CIRN Instrument	-	-	-	-	×	×	×	×	×	×	-
Sastre-Fullana et al. (2017), APNCAI	×	-	×	-	-	×	×	×	×	-	-
Tromp et al. (2012), Compass Tool	-	-	×	×	-	-	×	×	×	-	-

Note: (×) Measured (-) Not Measured

Supplementary File 1: Defining attributes of competency transformation extracted from the analysis (N=26).

Defining attributes	Associated dimensions	Sources identified	References
1. Capacity for renewal	Research and EBP, Personal and Professional Development, and Leadership	17 (65%)	Kirch and Ast (2017); Johnson (2017); Leape et al. (2009); Sanner-Stiehr and Kueny (2017); Duygulu and Kublay (2010); Salmond and Echevarria (2017); Fearing et al. (2014); Scott and Pringle (2018); Delaney et al. (2015); Gonzalo et al. (2018); Manley et al. (2018); Brisolara et al. (2019); Bergh et al. (2016); Delaney (2016); D’Souza et al. (2015); Beliveau et al. (2015); Greenwood (2019)
2. Quality of execution	Quality Improvement, Cultural Safety, Professionalism, Communication, Teamwork and	18 (69%)	Kirch and Ast (2017); Johnson (2017); Leape et al. (2009); Tutuncu et al. (2014); Sanner-Stiehr and Kueny (2017); Duygulu and Kublay (2010); Salmond and Echevarria (2017); Scott and Pringle

	Collaboration, Ethical Principles, and Leadership		(2018); Delaney et al. (2015); Fix et al. (2017); Egener et al. (2017); Brisolara et al. (2019); Plochg et al. (2009); Bergh et al. (2016); Brennan and Monson (2014); D’Souza et al. (2015); Dickson (2016); Greenwood (2019)
3. Sustainability	Health Information Technology, Patient-Centred Care, Leadership and Management	11 (42%)	Kennedy and Moen (2017); Sanner-Stiehr and Kueny (2017); Duygulu and Kublay (2010); Salmond and Echevarria (2017); Klecun (2016); Abraham et al. (2011); Scott and Pringle (2018); Delaney et al. (2015); Fix et al. (2017); Manley et al. (2018); Dickson (2016)

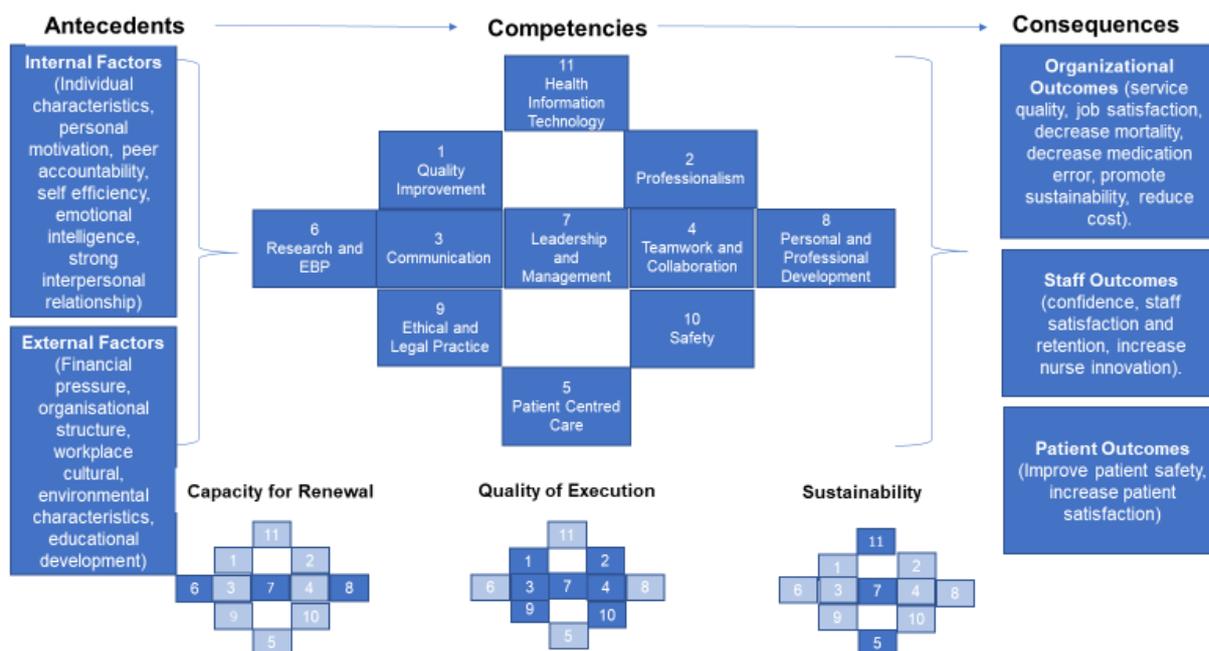


Figure 2: Proposed operational framework of competence transformation

Implications for nursing Practice: This concept analysis contributes to upgrade the quality of care and implementation of best practice, by providing insight and working with capacity for renewal, quality of execution, and sustainability that can increase job satisfaction, improved

personal wellness, decreased burnout and turnover, and increased innovation. Competence transformation moves the organisation towards improved patient safety and service quality, increased patient satisfaction, decreased

mortality, decreased medication error, improved sustainability and reduced costs.

Strengths and limitations: Walkers and Avant's (2019) method provided clarity surrounding the concept of competence transformation. Competence transformation of healthcare professionals has significant implications for patients' safety and best practice in healthcare contexts. Healthcare leaders and decisionmakers need to understand the concept and plan for future research. This concept analysis has considered sources from scientifically recognised publications using electronic and manual searches. Authors searched from three databases only and reviewed articles published from 2012 to 2019. In addition, the review included only English-language studies, but all studies were described precisely and scientifically. This concept analysis was developed and slightly modified by consider and includes real concept cases and empirical referents.

Conclusion: Almost all industries are transforming – and the healthcare industry is no exception. Transformation, if planned and managed properly, can bring an abundance of benefits to healthcare organisations and the customer bases they serve. Competence transformation represents the heart of this broad sector transformation.

This analysis clarifies and develops a theoretical definition and operational framework of competence transformation. The proposed empirical referents of the three identified attributes (capacity for renewal, quality of execution, and sustainability) can be used to validate the presence of competence transformation. This analysis can help healthcare leaders to realise the concept and determine where responsibilities lie in establishing a definition of competence transformation. The competence transformation concept will enhance clinical outcomes and sustainability of healthcare systems.

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