

NURSES' EXPERIENCES ON SYSTEMS THINKING IN CLINICAL PRACTICE: A PHENOMENOLOGY

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ABSTRACT

This qualitative phenomenological study explored and understand the lived experiences of nurses at Davao De Oro Provincial Hospital located in Barangay Bankerohan Sur, Municipality of Montevista, Province of Davao De Oro, Philippines, regarding the application of systems thinking in clinical practice. The participants were purposively selected and engaged in in-depth interviews using a validated interview guide. Thematic analysis was employed to analyze the qualitative data and generate themes from the participants' responses. From their lived experiences, three major themes emerged in relation to the application of systems thinking: holistic perspective, adaptation and growth, and patient-centered outcomes. In terms of challenges, the study identified resource constraints, resistance to change, and organizational barriers as key obstacles to implementing systems thinking. Furthermore, the application of systems thinking was found to enhance decision-making and problem-solving through themes such as root cause analysis, collaborative solutions and complex care management.

Keywords: Nurses' Experiences, Systems Thinking, Clinical Practice, Phenomenology, Decision-Making, Healthcare Challenges

INTRODUCTION

Background of the Study

The clinical practice around the globe, our past, faced complexity due to the mandate of "new normal" facing the challenges while combating against COVID 19. For this reason, globally, with on-site clinical practice being suspended and resumed based on the government's social distancing guidelines, the situation of the clinical training institution, and the policy of the institution. Therefore, it is very important, that the nursing management system, particularly supervisors, will be able to manage complexity in the emergence of new and more diversified forms of clinical practice at hospitals, nursing education, and guidance and the increased autonomy and accountability among nurses involved. Meanwhile, to manage complexity, it is vital that the systems thinking approach is utilized to possibly eliminate or, if not, minimize the gap and embrace changes.

According to Williams (2020), systems thinking enables nurses to identify mismatches with the environment, weaknesses in the organization and missing systemic elements in the organization. This may lead to redesigning the organization and ensuring its survival and growth. Thus, coping with complexity is at the heart of management and leadership in the turbulent environments faced by the organizations and societies of our day. The systems approach provides transdisciplinary theories and tools for dealing with this

challenge more effectively than efforts merely based on disciplinary insights or pragmatic recipes. As a matter of fact, there is no need to deny the swift growth of the complex systems that continuously coil to life in the world around us. As nations become increasingly interrelated, globalization grows our social systems in complex new ways. Thus, technological advancement progenies system after system, each increasing in interdependence on other systems that have come before, such as the Internet, GPS, power grid, software APIs, and many more. Apparently, International trade ties nations together in powerful economic feedback loops. Systems are unconquerably moving towards interconnectedness as we hurtle into a progressive future. All of those systems feed into one another to supply extremely complex, unpredictable effects. One can raise understanding the deep roots of those complex behaviors presented to predict them and ultimately adjust their outcomes by utilizing systems thinking as a skill set.

Furthermore, with the exponential growth of systems in our world comes a growing need for systems thinkers to wrestle these complex problems. In present times, systems thinkers need to prepare for a progressively complex, globalized system of systems future in which everything will produce ripple effects throughout the globe. Richmond (1987), a well-known leader systems thinking and systems dynamics, coined the term “systems thinking,” and ascertained that as interdependency increases, we must learn to learn in a new way. Hence, it is not just enough to be cleverer about our particular goal. Yet, we must have a common language and framework for sharing our specialized knowledge, expertise, and knowledge with “local experts” from other parts of the online.

Notwithstanding, interdependency stresses Systems Thinking because, without its importance, the evolutionary trajectory that we've been following since we emerged from the beginning will become less feasible. Many researchers and systems science experts accept as true Richmond's views on the good importance of systems thinking in handling the approaching century's complexity (Sterman, 2023). Besides, the need to improve an individual's ability to understand complex systems has been documented as early as the 1950s (Plate, 2020). He added that many nurses believe that systems thinking represents an answer to this call. The need for the general public capable of understanding systems and complexity is now more pressing than ever. Many more assertions like this will be found throughout the literature.

On the one hand, if it is so important, then what exactly is systems thinking? The term has been defined and redefined in many various ways since Barry Richmond coined it in 1987. Perhaps, rooted in our field, lies the solution to defining the elusive concept of systems thinking in a way that will allow it to be measured. In the end, the anticipated result is a surprisingly forthright step in defining systems thinking which the application of systems thinking to itself is. A basic principle of a system is that it is something more than a collection of its parts (Meadows, 2018). Ensuing this line of reasoning, it immediately becomes apparent that systems thinking can be viewed as a system.

On the other hand, Systems thinking is literally a system of thinking about systems. As discussed later during this paper, this highlights the issues with the definitions available within the literature. Besides, Meadows (2018) explained that systems thinking comprises three vital foundations: elements, interconnections, and a function or purpose. Remarkably, he added that the function or purpose that is often the most crucial element of the system's behavior is the least obvious part. Though not all systems have a clear goal or objective, systems thinking does. Hence, Systems thinking is widely believed to be critical in handling the complexity facing the world in the coming decades; however, it still resides in the nursing education margins.

Moreover, the urgency for change comes at an opportune time for nursing management leaders, in light of greater flexibility in Philippine regulations that provide increased autonomy for hospitals to develop improvement initiatives tailored to the unique context of the Department of Health system. With this opportunity comes the question of whether nurses have the skillset and expertise needed to redesign their hospitals and overcome a history of failed hospitals improvement initiatives (Sanna, 2019). Thus, the foregoing statements prompted the researcher to investigate the nurses' experiences on systems thinking clinical practice in Davao de Oro-Provincial Hospital.

Research Questions

This study explored to describe the nurses' experiences on systems thinking in clinical practice in the Davao de Oro-Provincial Hospital.

Specifically, this study answered the following questions:

1. How do the nurses describe their experiences in applying systems thinking in clinical practice?
2. What are the challenges do nurses encounter when integrating a systems thinking approach in patient care?
3. How does systems thinking contribute to the decision making and problem solving in nursing practice?

Theoretical Lens

This study is mainly anchored on Systems Thinking as the fifth discipline of a learning organization by Senge (1990). Systems thinking emphasizes that one sees himself/herself as part of the whole. It allows individuals to detect patterns and importance of employees' interaction within a complex whole. It enables employees to understand systems behavior on how parts interact. It represents a holistic approach to problem-solving so that when problems are resolved as an organization, the entire organization becomes successful (Masahudu, 2019). This theory puts emphasis on the idea that systems thinking enables nursing leaders to harness the collective energy and expertise of nurses, staff, and community members in establishing shared goals and agreed-upon actions for improvement. A systems perspective is needed to address the unique challenges of hospitals as social systems and promote the ongoing collaboration of nurses, staff, and external stakeholders to move beyond the traditional model of the hospitals (Smith, Dutton & Kleiner, 2019).

This study is also clamped on the Managing Complexity Model by Beer (1985). It is emphasized in the model that it gives a new, different, better way to structure and manage a school setting. It has five subsystems: operations, regulatory direction, control, intelligence, and policy. The five subsystems are structured that resolve many current management problems. It assigns all responsibilities where it can be most effectively managed. This theory tried to emphasize the empowerment of employees in the work they do to make decisions and act in ways that will best help the worker's unit and the organization achieve 6 desired goals. All are involved in organizing and controlling the work they do (Mchize, 2019).

This theory is very relevant in this study where DOH nursing leaders feel the accountability of their work performance for the organization. The operations ensure the fulfillment of their nurses and staff and clear direction.

METHODOLOGY

This study used a phenomenological research design to understand the lived experiences of nurses in managing complexity within hospital settings. Phenomenology focuses on describing and interpreting how individuals experience a particular phenomenon. According to Stake (2019), this approach helps researchers understand a case deeply by examining what it is and how it functions within a specific context. Through this design, the researcher gathered detailed descriptions of participants' experiences and interpreted their meanings using systematic data analysis and relevant literature. This allowed the study to present multiple perspectives and develop a deeper understanding of the phenomenon.

Participants were selected based on their experiences and perspectives related to the study. Nurses from Davao de Oro Provincial Hospital were invited to participate in in-depth interviews about their experiences in managing complexity in hospital systems. A gatekeeper initially identified potential participants, and the researcher verified whether they met the study criteria.

Purposive sampling was used to select participants who could provide rich and relevant information (Palinkas et al., 2013). The inclusion criteria required participants to be registered nurses with at least two years of professional experience in the hospital. Nurses with less than two years of experience were excluded.

Only nurses with relevant experience, willingness to participate, and availability for one-on-one interviews were included. As typical in qualitative research, a small number of participants was selected to allow for an in-depth exploration of their experiences.

RESULTS AND DISCUSSION

Table 1. *Profile of the Participants*

Participant's Code	Sex	Age	Position	Length of Service
IDI #1	Male	38	Nurse II	15 years
IDI #2	Female	46	Nurse II	20 years
IDI #3	Female	39	Nurse I	17 years
IDI #4	Female	40	Nurse I	17 years
IDI #5	Female	40	Nurse I	14 years
IDI #6	Female	48	Nurse II	18 years

IDI #7	Female	39	Nurse I	17 years
IDI #8	Female	39	Nurse I	15 years
IDI #9	Female	52	Nurse II	30 years
IDI #10	Female	48	Nurse II	24 years

Profile of the Participants

Shown in Table 1 are the characteristics of the participants involved in this investigation. There were 10 people engaged in the IDI. The table distinctly illustrated the composition of the nurses: 9 females and 1 male. There were six participants aged 38-40 years old, three participants aged 46-48 years old, and one participant aged 52 years old. Concerning the civil status, there is only one participant who is single while the rest are married. In terms of their length of service, one participant has 14 years length of service, seven participants with 15-20 years, and two participants with 24 years and above. As regards the position of the participants, five participants are Nurse I and the remaining five are Nurse II.

Table 2: Experiences in Applying Systems Thinking in Clinical Practice

Theme	Sub-Theme
Holistic Perspective	Seeing the Bigger Picture
	Interdisciplinary Collaboration
Adaptation & Growth	Pandemic Adaptation
	Professional Development
Patient-Centered Outcomes	Improved Care Quality

The findings from the study reveal how undergraduate nursing students experienced the application of systems thinking in clinical practice, particularly during complex care scenarios like dialysis. As shown in Table 2, students emphasized developing a holistic perspective by “seeing the bigger picture” and understanding how each component of patient care is interrelated. This aligns with von Bertalanffy’s (1968) general systems theory, which asserts that individuals in a system cannot function independently of one another, especially in dynamic healthcare environments. Nurses must integrate this thinking to optimize patient outcomes.

Table 3: Challenges Encountered by Nurse when Integrating Systems Thinking

Theme	Sub-Theme
Resource Constraints	Time & Workload Pressures
	Staffing/Technology Gaps
Resistance to Change	Cultural/Generational Barriers
Organizational Barriers	Fragmented Communication

Table 3 exposes the challenges students faced while integrating systems thinking. The theme resource constraints, including time pressures and heavy workloads, has been well-documented in nursing literature as a barrier to holistic practice (Duffield et al., 2011). Additionally, staffing and technological limitations impacted the students' ability to fully engage in systems-level care, consistent with Carayon and Wood (2010) who emphasized that structural deficiencies in healthcare systems impede the translation of theory into practice.

The theme resistance to change, specifically cultural and generational barriers, further illustrates the struggle new nurses face when introducing innovative approaches like systems thinking. Kotter (1996) argued that organizational change fails when cultural inertia is high, something echoed in the students' experiences. Moreover, fragmented communication, categorized under organizational barriers, continues to be a critical issue in healthcare delivery, contributing to preventable errors and disjointed care (Institute of Medicine [IOM], 2000).

Table 4
Systems Thinking Improves Decision-Making and Problem-Solving

Theme	Sub-Theme
Root Cause Analysis	Systemic Problem-Solving
Collaborative Solutions	Team-Based Decisions
Complex Case Management	Multi-Condition Care

Table 4 presents the positive impact of systems thinking on decisionmaking and problem-solving. The root cause analysis approach mentioned by participants reflects the utility of systems thinking in identifying underlying problems rather than addressing superficial symptoms—an approach also emphasized in Reason's (2000) "Swiss Cheese Model" of system failures. The emergence of collaborative solutions as a sub-theme aligns with Epstein and Street (2011), who advocated for shared decision-making in multidisciplinary teams as a pathway to better outcomes. Similarly, complex case management, especially involving patients with multiple co-morbidities, illustrates how systems thinking facilitates care coordination, a necessity in today's patient populations (Fraser & Greenhalgh, 2001).

Implications

The findings of this study emphasize the vital role of undergraduate nursing students in promoting and maintaining patient safety, particularly among patients undergoing dialysis treatment. Their direct experiences reveal that nursing education and clinical exposure significantly shape their attitudes, competencies, and commitment to patient safety protocols.

First, the study underscores the need for enhanced simulation-based and real-time clinical training focused on patient safety. Nursing educators and clinical supervisors must incorporate structured experiences that prepare students to handle emotionally distressed patients and complex procedures like hemodialysis. This will help students develop resilience, technical competence, and confidence in high-risk care environments.

Second, there is a clear implication for the integration of systems thinking into nursing curricula. Students reported the benefits of following Standard Operating Procedures (SOPs) and learning through interdisciplinary collaboration. Nursing practice should therefore prioritize a systems-based approach to care delivery, encouraging students and staff to see the bigger picture, analyze root causes, and collaborate in decision-making processes that enhance patient outcomes.

Lastly, spiritual and emotional preparation such as prayer, mentorship, and peer support were key coping mechanisms cited by students. Nursing administrators should support holistic approaches to student wellness by fostering environments that allow reflection, debriefing, and psychosocial support. Ensuring a safe learning environment helps protect not only patient welfare but also the well-being of future nurses. Creating open channels for communication, feedback, and guidance from senior nurses can further strengthen the safety culture within healthcare institutions.

Concluding Remarks

In conclusion, this study has highlighted the significant role of systems thinking in enhancing nursing practice, particularly in complex and highpressure clinical environments. By emphasizing the interconnectedness of various components of the healthcare system, nurses are able to make more informed decisions, improve collaboration across disciplines, and address root causes of issues rather than merely treating symptoms. The integration of systems thinking allows nurses to view patient care as part of a larger, dynamic system, which helps improve both individual and team-based decision-making. This holistic approach not only benefits patient outcomes but also strengthens the overall quality of care provided in healthcare settings.

However, the study also uncovered several challenges that hinder the seamless integration of systems thinking in nursing practice. Time constraints, heavy workloads, resource limitations, and resistance to change were identified as the primary barriers that nurses face when attempting to adopt this approach. Despite these challenges, many nurses found that systems thinking improved their ability to manage complex cases, collaborate more effectively with interdisciplinary teams, and navigate systemic problems. These findings underscore the importance of addressing these obstacles in order to fully realize the potential benefits of systems thinking in nursing practice.

As healthcare continues to evolve and become more complex, it is crucial that systems thinking be further incorporated into both nursing education and clinical practice. This study demonstrates that for systems thinking to be successfully applied, healthcare organizations must invest in adequate resources, foster a culture of collaboration, and

provide ongoing professional development opportunities for nurses. By overcoming the challenges identified in this research, nurses will be better equipped to deliver high-quality, patient-centered care in increasingly complex healthcare environments.

The findings of this study provide valuable insights into the experiences of nurses applying systems thinking and offer a pathway for enhancing nursing practice. Moving forward, continued research is necessary to explore how systems thinking can be more effectively integrated into nursing curricula, professional development programs, and healthcare policy to create a more efficient, cohesive, and patient-centered healthcare system.

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