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International Journal of Nursing Studies Advances 2 (2020) 100011

Contents lists available at ScienceDirect

International Journal of Nursing Studies Advances

journal homepage: www.elsevier.com/locate/ijnsa

The INSÉPArable portfolio tool to sustain continued education and the professional development of nurses for a full scope of nursing practice and enhanced patient safety competencies: An ethnographic study ☆

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ARTICLE INFO

Keywords::
Professional conscience and Millenial nurses
Patient safety
Nursing practice
Humanistic care
Continuous education
Professional development
Reflective practice
Design approach
Professional conscience
Millenial nurses

ABSTRACT

Background: Despite widespread recognition of the undeniable impact of nurses on patient safety, important barriers relating to the organization of health systems still hinder the full expansion of the role of these professionals. In Quebec (Canada), nurses work overtime and increased adverse events are preoccupying and point to a possible lack of contemporary tools for continuous professional development. Innovative training tools should foster a more reflective practice focused on a holistic view of the patient in order to support the full scope of nursing practice and ensure continuous improvement in the quality of care. Such tools would make it possible to better understand their practice, according to their own perception, as well as its applicability in the emergence of a professional conscience which is essential to lasting safety competencies. This study's overarching goal was to propose a model and a portfolio prototype to support nurses' training.

Method: Based on a humanistic and reflective perspective on patient care and safety competencies, a design approach was used to develop a portfolio prototype. Ethnography was used to collect and analyse data using shadowing observations of 10 nurse/patient dyads, followed by interviews about their care experience. The research was conducted in acute and long-term care settings of the Quebec City area. The iteration process resulted in a first version of the prototype that was then presented to various stakeholders during a co-design workshop aimed at better understanding the clinical applicability of this prototype.

Findings: The INSÉPArable project is illustrated in two interrelated figures, which reflects a complete inductive representation supporting sustainable patient safety from nursing practice experience. First, nursing practice status has been depicted as an iceberg metaphor where the essence of care, the « art of nursing » is hidden. Second, a sphere illustrates the direction to the full emer-

☆ ***Funding:*** This research work has been supported by a Canada Social Sciences and Humanities Research Council and grants from Bureau de la recherche et de la création de l'Université Laval (University Laval's research and creation office). In addition, this research project received the seal of approval from Projet de marque en santé durable, Alliance santé Québec (Université Laval).

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https://doi.org/10.1016/j.ijnsa.2020.100011
Received 23 June 2020; Received in revised form 21 September 2020; Accepted 17 October 2020
Available online 21 October 2020
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gence of nursing practice that helps to enhance the hidden “art of nursing” by leading nurses towards optimal conditions conscience.

Discussion: INSÉPArable turned out to be more than an individual reflective tool as it also highlights the need for collective awareness among nurse managers regarding their responsibility in implementing and sustaining healthy work environments, in which optimal conditions are better supported. This also implies a renewed mode of governance and the implementation of more humanistic processes that redefine the contemporary professionalism of nurses, which are closely linked to patient safety.

1. Background

Since the turn of this millennium, North American health care systems have engaged in a major quest for improvement in addressing patient safety and quality of care. The 1999 Institute of Medicine (Institute of Medicine (US) Committee on Quality of Health Care in America; Kohn LT CJ, Donaldson MS, 2000) report "To Err is Human" undoubtedly made its mark by revealing the alarming number of patients who die each year because of medical errors. That was all it took to focus the attention of Canadian researchers on this issue, especially since many of these deaths were considered as preventable. Several avenues were then explored to better understand the risks involved in health care settings. The structure of the organization of care and the quality of health care practice became key factors to be examined. The International Council of Nurses (ICN) (International Council of Nurses (ICN), 2018), a federation representing more than 20 million nurses worldwide attention to the facts that nurses save lives, reduce costs and improve patients' health, and their impressive work has been demonstrated throughout the current COVID-19 pandemic (Catton, 2020).

Nurses are the healthcare professionals who have the longest contact with patients and families. This closeness to patients gives them a key role in assessing, detecting and preventing changes in health status and advocacy which leads to optimal interdisciplinary coordination of care (Pepin et al., 2017).Through a holistic view of patients, nurses are able to better prepare patients for discharge and, by promoting their empowerment, avoid complications and readmissions. The impact of nursing care on patient outcomes are very well documented in the scientific literature, with some studies reporting that the more nurses are present on a health care unit, the lower the patient mortality rates are and the more experienced and educated nurses are, the lower this rate also tends to be (International Council of Nurses (ICN), 2018; Aiken et al., 2014) Lack of recognition of the complex nature of nursing and lack of organizational support can lead to fragmented nursing practices which limits the provision of safe quality care, which in turn minimizes the human aspect of care (Manojlovich, 2015; Rochefort et al., 2015). Threats to quality of care and patient safety could become increasingly serious in the coming years. In this respect, Canadian Nurses Association (Canadian Nurses Association (CNA), 2015) assesses that there will be a shortage of 60,000 full-time registered nurses in Canada by 2022. In the meantime, accident and adverse events remain a concern, especially among the elderly (Gouvernement du Québec, 2019; Ordre des infirmières et infirmiers du Québec, 2018). Considering the negative impacts of care organization on both nurses and patients, some academic institutions have evoked the need to strengthen nurses' training in order to alleviate this situation (Bourgault and Ducharme, 2018). Given this, it would be desirable for nurses to benefit from full academic and professional development so that they can better apply up-to-date knowledge in patient safety.

A sounder preparation for continuous education between school and healthcare settings could imply utilization of reflective approaches to support the development of patient safety competencies in a humanistic perspective (St-Germain et al., 2019). In that sense, the more reflective the nurses' practice is, the more willing they are to acquire knowledge to treat their patients in a holistic way. One of the starting points would be the renewal of available tools for training. These tools could be oriented towards the identification of their optimal professional development, starting with academic training to strengthen patient safety competencies throughout their professional life. It is generally recognized that Millennials are more likely to place greater importance on connectivity, meaningfulness of their work and feeling aligned with their academic experience (Peart, 2019). In developing innovative strategies, schools and healthcare settings work together to better target the tools needed for Millennial nurses to better adapt and be more functional once at work.

To our knowledge, no study has used a design approach to conceptualize nurses' daily professional activities and experiences in order to incorporate them in a learning portfolio, which would offer a more explicit perspective than more traditional tools (Chamblee et al., 2015). In the context of this project, the design approach (Bisson and Gagnon, 2005; Ordre des infirmières et infirmiers du Québec, 2014) as a methodology of innovation, was used with the aim of understanding realities of nursing practices in context and translating them in an explicit work activity map. In more acutely illustrating some elements that must be taken into consideration in daily nursing practices, learning tools could benefit from the design approach insights to propose a reflective understanding of the conditions underlying improvement of patient safety competencies, anchored in nurses' own experiences. The objective of this paper is to propose a model of nursing practice that combines the insights of a design approach with a renewed perspective on nurses' professional conscience.

1.1. Conceptual models shaping this research

Watson's Caring Philosophy of Care (Watson, 2002; Alligood, 2014), as a humanistic perspective, supports the “art of nursing” focused on establishing an authentic care relationship based on trust, which considers the uniqueness of each patient health but also their individuality, personal environment and care preferences. According to this philosophy, the nursing practice is based on four metaparadigm concepts to consider in the relationship with the patient: person, care, health, and environment. With this practice

philosophy, nurses adopt a true presence to maintain a caring care relationship based on reciprocity and develop longer-term thinking which influences their capacity to anticipate and prevent potential risks to patients. When nurses create an environment conducive to such a care approach, this promotes the development of patient empowerment who then become more actively involved in their care, as suggested by the patient partnership approach (Pepin et al., 2017). As a result, this partnership between nurse and patient contributes to a sustainable environment which supports healing and recovery in the actual illness episode, but also influences future episodes. This is in direct line with the notion of patient safety as defined by the World health organization (World Health Organization (WHO), 2011) which proposes a multidimensional concept including health promotion and global well-being as means to empower patients. The Canadian Institute of Patient Safety (Canadian Patient Safety Institute, 2012) also considers clinicians' preventive actions as well as curative actions as determinants of the development of patient safety competencies. Through a reflective practice, nurses could become more aware of different everyday aspects of their care approach, thus leading to the promotion of sustainable patient safety in their work. Reflective practice encourages self-reflection, needed to look back upon oneself and know oneself authentically (Chanel, 2013; Kim et al., 2017), enough to be aware of personal strengths and limitations in order to respond adequately to patient needs while respecting one's unicity. A reflective approach, with inherent psychological aspects, is then considered a useful method to foster meaningful commitments from healthcare professionals, placing an emphasis on raising conscientiousness and humanism when taking care of patients' overall well-being.

In Quebec, in professional relicensing requirements, existing continuous education portfolio formats tend to be more conventional (Ordre des infirmières et infirmiers du Québec, 2012). They often fail to address contemporary issues. Genuine updated portfolios targeting transitions between academic knowledge and application of professional knowledge, reflective practice, humanization of care, and patient safety competencies are needed. With the study of both the material and emotional environments of nurses and patients' experiences, a design methodology should allow the development of tools that could be more relevant and adapted to actual realities of nursing, while aiming at developing competencies associated with a reflective attitude.

2. Methodology

An ethnographic qualitative research approach was used to collect and analyze data related to nurses and patients' experiences, organizational culture and physical environments. Ten care situations (nurse-patient dyad) were observed using the shadowing technique (continuous non-participant observations). Following the observation phase, 20 interviews with both patients and nurses were conducted to obtain in-depth information from participants or "**informants" as they are named in ethnographic studies** (Ordre des infirmières et infirmiers du Québec, 1996)**.** Five nurse-patient dyads were recruited from a short-term general medical setting and five from a long-term rehabilitation setting participated to this study. Their interest in this study was first ascertained by the unit's nurse manager and consent was obtained from interviewers.

They were included in the study if they met the following criteria:

- French speaking
- Had been admitted for at least 3 h on the unit
- Was in a care situation involving at least one clinical nurse for at least 2 h

Those meeting the following criteria were excluded from the study:

- Significant cognitive impairments who could not express themselves or give coherent statements in the last 15 min.
- They were in a care situation too precarious (risk of imminent death).

Nurses who performed the shadowing and conducted the interviews could be any nurse with training in the field of clinical nursing without any restriction regarding number of years of training or schooling. In the same manner, we included any nurse or nurse manager interested in sharing their views on their vision of a professional portfolio and who were willing to review and comment the visual material proposed by the research team during the codesign workshop.

2.1. Data collection procedures

The project was approved by the CHU de Québec' ethic committee. Posters and pamphlets were used to recruit informants. Unit managers directed the research team to potential volunteer informants who met recruitment criteria. Since the study required immersion in daily care activities, great care was taken to ensure free and informed consent from all informants, from which written informed consent was obtained.

Data collection took place from July 2018 to April 2019 in two Quebec City healthcare settings, a university teaching hospital (CHU de Québec-Université Laval) and a physical rehabilitation center (IRDPQ). As illustrated chronologically in Fig. 1, four data collection strategies were used by the research team to develop the prototype: literature review and expert interviews, shadowing and observations, individual interviews, and a co-design workshop. As an iterative method, each data collection strategy has been analyzed in a way to advance to the next step.

1. **Literature review and interviews with experts -** This was a preliminary stage where professors and teachers in the school of nursing were met to understand issues in the transition between academic and professional settings in the nurse's training curriculum. We also documented, interdisciplinary relations between nursing and design disciplines in research. Furthermore, all content including current design and use of development professional tools such as portfolios contributed to build the field collection (shadowing and observations interview guides) and co-design workshop phases.

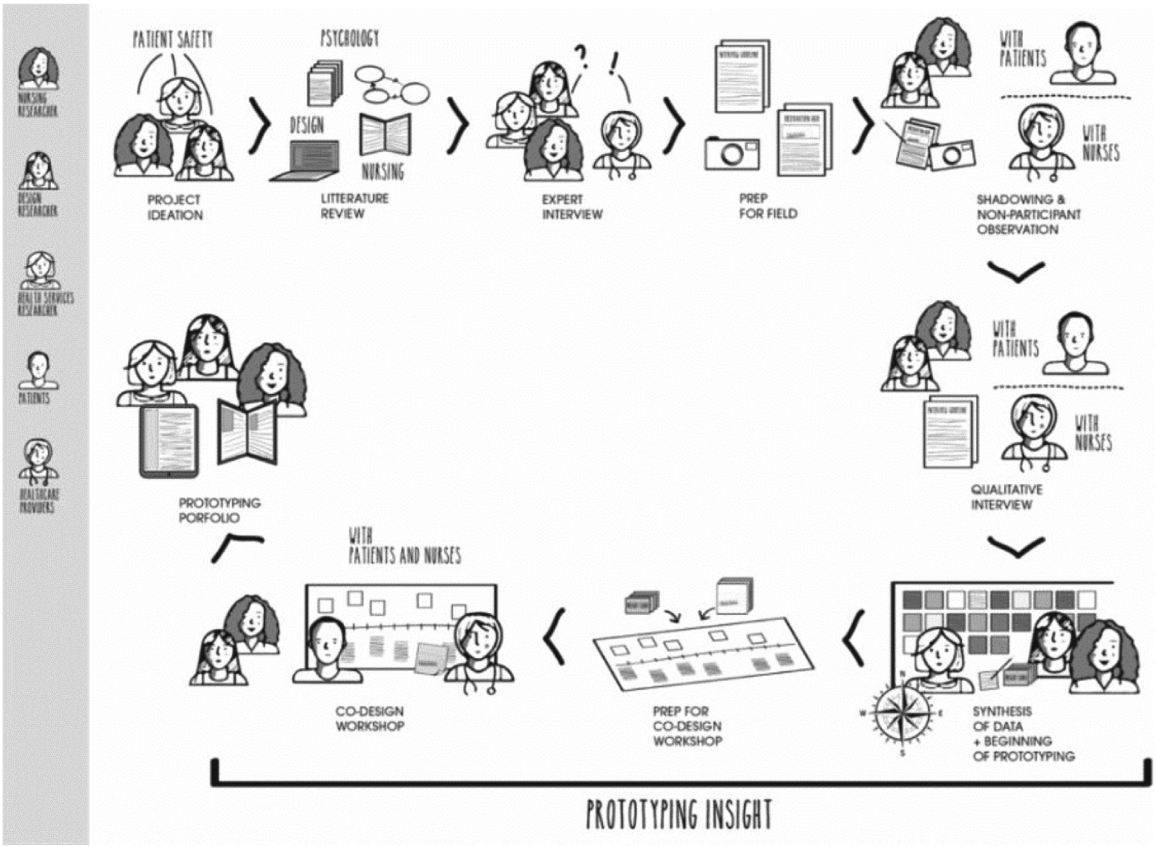

Fig. 1. INSÉPArable project methodology strategies.

2. **Shadowing-** In this phase nurses and patients/families were observed on an ongoing basis for about three hours for each nurse-patient dyad during their care experience over three work shifts (day, evening, night) including weekends, to create an inventory describing practice-related locations and settings.
3. After this phase, a **semi-structured interview** (approximately 1 h) was held with each participant (nurse and patient separately) to record perceptions and emotions regarding the care experience that were observed through shadowing. The interview guide was developed based on Watson's Caring Philosophy of Care (Alligood, 2014) and (Bisson and Gagnon, 2005) design approach Bisson and Gagnon, 2005, the Canadian Patient Safety Institute's Competency Domains for Patient Safety (Canadian Patient Safety Institute, 2012) and Balas' Reflective Practice approach (Chanel, 2013). A thematic analysis of shadowing observation notes and interview verbatim was conducted. A first draft of the data analysis, which presented a synthesis in the form of a conceptual map integrating patients/nurses' experiences in illustrated contexts and of nurse and patient profiles using the *persona* technique, was developed by the design team. This mapping was a part of a portfolio prototype delivered in different formats (professional notebook and management chart).
4. Finally, a **co-design workshop**, which resembles a focus group approach, helped push this version to a first validation stage and allowed for improvements. Sixteen informants from different backgrounds: bedside nurses, managers, patients, nursing educators, and researchers (nursing, design, and psychology) were involved in the workshop, which relied on dynamic visual participatory material previously developed by the design team who led the discussions. This visual material illustrates and synthesises the data in workplace contexts. The informants helped review and modify the representations before suggesting improvements to the continued education material. This co-construction between the research team and stakeholders using role-playing strategies and clinical vignettes aimed to target the relevance of the portfolio prototype. Themes and main ideas which guided data collection, observations and theme interviews are presented in Table A1 (appendix A).

3. Results

3.1. Data analysis

The data analysis strategies aimed at better understanding the following perspectives:

1. Analysis of human feelings about workload and care organization.

2. Perceptions and relationships between individuals
3. Work environments, i.e., space and objects, along with behaviors within these spaces and objects

The part of the analysis that consists in understanding nurses' daily practice experience with patients and their work environment were mostly performed by the nursing research team. From each nurse's interviews with informants, the research team highlighted quotes linking metaparadigm nursing concepts (person, environment, care, health) with each of these three previous perspectives (Watson, 2002; Alligood, 2014). These quotes, after several re-readings to retain in-depth cultural main ideas, were aggregated in themes, which are presented in **Appendix A**. These themes contributed to conceptualize nurses' practice experience which lead to the depiction an iceberg, where a part is visible, and another is not. During this analysis, using the results from the shadowing observations and interviews from both the patients and the nurses, the design team develop the portfolio tools to complete the conceptualization. These themes and perspectives were analyzed both jointly and separately to provide contextualization. This contextualization exercise represented the first prototype version, which involved a tool which proposes visual information, scripting (storytelling) and documenting uses (personas, maps, patient/family paths, etc.) to help recreate the sequence of a gesture, situational experience, work environment or training activity. Visual, photographic representations further supported and illustrated the care situations involved from both the patient/family and the nurse's perspectives. Photography therefore lends additional support to the analysis of shadowing observations and individual interviews. The portfolio design iterations took place in several meetings where the nursing and design research teams discussed results and cotextualized the portfolio to the healthcare workplace.

The research team came up with the name « **INSÉPArable** » for the project. It invokes the dynamic interaction and close connection between nurse and patient. The acronym in French is a word meaning inseparable and can be broken down into: IN for (infirmier/ère – i.e. nurses in English), SÉ (sécurité – i.e. security in English), PA (for patient same word in both languages) forming an *inseparable* unit. We aimed to highlight the full spectrum of a nurse's work and her interactions with the physical environment (space, furniture, equipment, warmth, smell, etc.) and human environment (patients/family, colleagues, etc.), which place equal demands on the functional, material, relational and emotional environment. Based on the synthesis of in-depth analyses of nurses' verbatim, we refer to a metaphor of an iceberg to illustrate the complex "art of nursing" and interactions between the nurse's professional practice and reflective conscience and an illustration which we named the *Sphere of Nurse's Professional and Reflective Conscience* (SNPRC) Fig. 2.

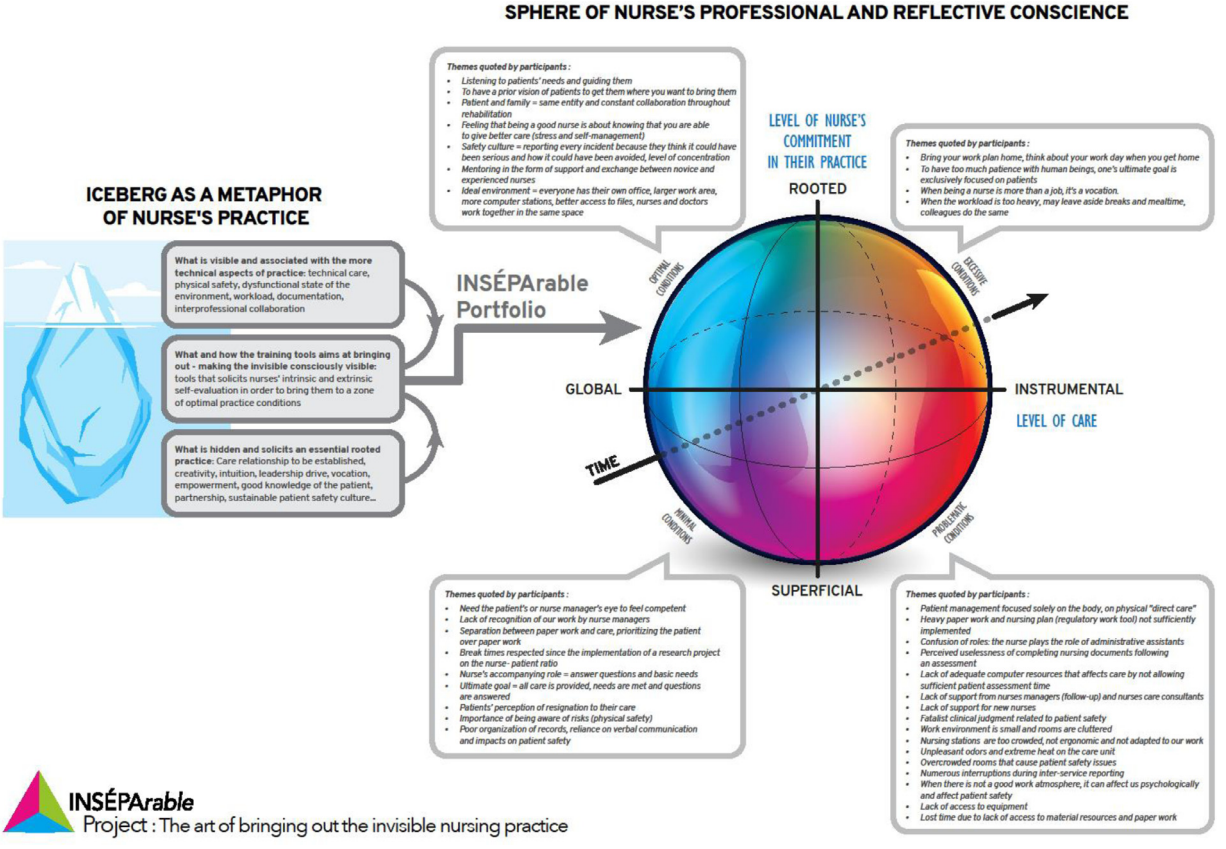

Fig. 2. Iceberg and Sphere.

The aim of the *SNPRC* tool, which should guide the further development and design of the portfolio, is to stimulate nurses' reflexivity by bringing them to anchor their practice towards their professional conscience and orient them towards optimal conditions and move away from problematic conditions (see arrow linking the iceberg and sphere). Thus, they become able to mitigate the problematic zones, where essential parts of nursing practice are hidden (as in the iceberg metaphor). In this spherical illustration, nurses' perception of their level of involvement in their practice varies from "rooted" to "superficial", which is depicted by the Y axis in the sphere (and represents the tip of the iceberg), and their perception of the level of care varies from "global" to "instrumental" and is represented by the X axis. The level of professional awareness and reflexivity is particularly critical in their perception of the optimal conditions needed to sustain patient safety in their work environment, and this may vary over "time". The importance of "time", which allows to represent the sphere in three dimensions, echoes Bronfenbrenner's "chronosystem" (Gottlieb and Gottlieb, 2013) which considers the social-political-historical effects and transitions that each nurse may experience in their professional life. This illustration of the *SNPRC* is still preliminary and needs to be improved to really incorporate the work of the design team and the conceptual model of nursing practice proposed in this paper. It is also important to note that it was developed in French, some elements were translated in English for the benefit of this paper.

4. Discussion

4.1. Findings for clinical nurses and nurses managers

Nursing practice is illustrated here through a metaphor of an iceberg in which these components and themes are transposed. Building from this metaphor as a starting point, our results provide a mapping of nursing practices that is substantially dependent on different aspects of the organizational and physical structure of the care environment. One of these aspects is the hypothesis that the usual working tools do not appear to fully support the entire full scope of nursing practice. The observation that nurses may realize that they are at the visible tip of the iceberg regarding their practice corroborates the work of Déry et al. (2017) who highlights the limited scope of nurses' actual practice through the little attention placed either on the optimization of quality and safety of care, on communication or coordination of care in their practice. The more nurses will invest the full scope of their practice, by emphasizing these dimensions in particular, the more proactive they will be regarding continuous improvement of quality and the more they will exercise their professional role with all the autonomy that their title confers them. The importance of autonomy as defining nurses' professional role is supported by Freeman (2019) who also emphasizes "professionalism" as a lever for positive actions to sustain quality of care.

Greater professionalism of nurses in their practice through the use of the INSÉPArable portfolio can only enhance their advocacy role with patients. In tune with a humanistic paradigm, such as both the Caring and the Design approaches propose, the INSÉPArable portfolio tool represents a possible consistent way to provide care delivery from a patient and family advocacy perspective to ensure quality care and sustainable patient safety. The advocacy role of nurses who, by being present with patients 24 h a day, involves learning about their needs, exercising informed clinical judgment, reaching agreement with them based on their values and preferences for care, and ultimately communicating this perspective to the health care team (Watson, 2002). Practicing advocacy leads to transformational leadership directly from the clinic. By exercising this transformational leadership, nurses may gain greater job satisfaction and creativity in order to mobilize and improve the environment to face everyday challenges. Nursing practice would certainly be enhanced by focusing on providing profoundly human and personalized care and by taking into account the feedback provided by patients and families. . A tool such as INSÉPArable can support both nurses, in the full exercise of their professional role and personal development and the full respect of patients' fundamental rights to human care.

4.2. Management of awareness and renewed governance

In accordance with the standards of practice of the American Nurses Association (ANA) (American Nurses Association (ANA), 2016), nurse managers are responsible, amongst other things, for supporting the full and complete application of the scope of practice (Brousseau, 2019). They have the obligation and power to establish a culture of safety that can, at various levels, lead to continuous improvement in the quality of care. The more nurse managers, representing the organizational structure, promote a humanistic perspective of care the more they advocate the use of efficient and effective humanistic nursing tools to sustain a comprehensive approach to the patient. This implies the need to move away from a usual generic management style to get closer to one that supports the specific fundamental mission of nursing services in health care. Plan and organize services around the essence of practice of the non-stop 24 h/24 nurses' caregivers can have a positive effect on the trajectory of patient outcomes (Brousseau, 2019). In this sense, a formal sensitization of nurse managers to the concepts underlying the INSÉPArable project, such as reflective practice, humanistic approach to care, sustainable safety and continuous quality of care improvement, will put forward a new management culture, conducive to renewed clinical governance (Hesbeen, 2017; Brault et al., 2008).This renewed governance proposes to bring together the organizational and professional perspectives in a collective strategic effort to make actions more integral parts of continuous improvement of quality rather than just a short-term objective regarding safety. This may leave more room for professional commitment, which is essential to the full scope of nurses' practice while aiming to achieve the organization's performance objectives.

It is recognized that healthy work environments promote positive care outcomes that contribute to the safety and quality of care. Furthermore, the ANA (American Nurses Association (ANA), 2016) defines a healthy work environment as one that is safe and facilitating autonomy, empowerment and job satisfaction. As advocated by the WHO (World Health Organization (WHO), 2011), the concepts of health and safety must be considered with the same holistic (global) vision where the physical, psychological, social and

spiritual well-being are taken into account. In this research, nurses report the importance of implementing a culture of safety in the organization and also as an ideal environment including access to usual resources and enough room for everyone to work at their ease. They deplore lack of recognition of their work by nurse managers, a major lack of resources as computers and small, cluttered and non-ergonomic environments. They recognize that when there is not a good work atmosphere, it can affect them psychologically and, in the end, affect patient safety. This is consistent with research data in the literature. A healthy environment will lead to a multidimensional sense of well-being among stakeholders, going far beyond a single error or adverse event, but rather will establish a sustainable safety culture that is proactive and more focused on the continuous improvement of the quality of care. To this end, nurse managers, in collaboration with the management team, have a key role to play in implementing healthy work environments as catalysts for nursing innovation by demonstrating transformational leadership. This rather complex role requires that the data on the INSÉPArable project be further developed and validated on a larger scale.

4.3. Humanization of the process with the Lean approach

The role of nurse managers is particularly crucial to enhance nursing care. In healthcare settings, various management methods, mostly from the manufacturing sectors, have been adopted, including the Lean approach, which is widely used in Quebec hospitals. This approach aims to improve the organization's performance by seeking to create value for the patient in seeking constantly optimization of process (Gemmel et al., 2019). This approach includes a strategic component aimed at alignment between the organization's objectives, the true north, and actions undertaken by each, through a bottom-up and top-down communication approach. While this resonates through the role of the *SNPRC,* with respect to the optimal nursing conditions to be preserved, the Lean approach does not well integrate the humanistic and caring essence of nursing practice. The INSÉPArable portfolio tool could then contribute to both optimizing processes of care and analyzing this optimization in an innovative way, introducing values of humanism as components. The addition of this tool to the Lean approach would represent an approach that would directly guide future nurses in their academic curricula as well as experimented nurses in their continued education and professional development.

4.4. Implication of these findings for future research

The association between this design approach and the nursing fields makes this research methodology innovative. Further studies, using methods involving an inductive reasoning with a constructivist paradigm, are warranted to continue the development of knowledge in these research areas. Nursing practice development, continuous quality of care and sustainable patient safety should be analyzed in-depth through the whole understanding of the system and the unique perspective of stakeholders. Such research methodology could particularly be echoed by the importance for the Millenial nurses' of connectivity, meaningfulness of their work and feeling aligned with their academic experience (Peart, 2019). In addition, the COVID-19 pandemic raises the issue of humanism in the caring relationship to be safeguarded despite the barrier of all the protective equipment to be worn by health professionals. The study of this impact at several levels in nursing practice, such as nurses interaction with their environment and their ability to ensure their own safety, as well as that of the patient should be addressed. The INSÉPArable portfolio tool thus provides a basis for analysing interactions that can and will prove particularly useful in teaching novice nurses as well providing continued education for experienced nurses. For both clinical nurses and nurse managers the ethical values inherent in quality of care (Hesbeen, 2017) can then be further explored from the perspective of professionalism (Freeman, 2019) for better professional development.

4.5. Study limitations

This study is not without its limitations, and it is possible that its credibility and transferability may be affected by the following. The fact that the study was conducted in only two types of care settings, in one city only and the short duration (two years) limit the transposition and understanding of the data according to different organizational cultural contexts. In addition, although patient profiles were created and illustrated, the in-depth data analysis leading to the SNPRC focused mostly on nurses' experience and less on patient experience. A future study could focus more on patients' experience in the nurse-patient interactions, since they were duets in the same space and time. Also, the development of this project could go further in its interdisciplinarity (design-nursing-psychology) and co-design methodology, in particular by increasing the number of analysis and co-design workshops with stakeholders. Despite these limitations, the understanding of the nursing practice pathway, through this uncommon methodology, has yielded an interesting conceptual basis and anchored groundwork that will guide the development of a full professional continued education portfolio with professional consciousness and reflective practices as central concepts.

5. Conclusion

The promotion of patient safety will increasingly need to go hand in hand with healthy work environments that support highly skilled work and further linked to continuous learning. Millennial nurses are the professionals who may be most affected by the organizational structure of their environment and, where appropriate, may have the greatest impact on sustainable patient safety. New paradigms imply the need for continuous learning in the workplace to address the barriers that we will have to overcome one day. Nursing will not escape this trend, which will require systems' agility. With these current challenges in mind, we aimed to conceptualize a reflective portfolio prototype destined to sustain continued education and professional development for nurses to enhance patient safety competencies. This is one of the first study of its kind that brings together disciplines such as nursing, design

and psychology around this goal and to use a design approach to deepen the understanding and develop innovative tools to support continued education in nurses.

Our results suggested that nurses may only be aware of a small part of their practice, mostly associated with the more technical care. This part seems visible to them, notably because it is what is recognized and valued in their environment. The INSÉPArable project was developed with the overarching goal of looking for what is invisible yet essential to nursing practice, and as a basis for the visible part, in order to bring out the full potential of nurses' professionalism. By actively contributing to establish a culture of sustainable safety and humanization of care, this will undoubtedly promote full nursing practice. Full extension of nursing practice through a project such as this one illustrates how it would be possible to reconcile humanism and science as the foundations of the nursing profession. By fostering the implementation of creative tools that promote these values, it will potentially promote healthy environments, in which patients will be the primary beneficiaries and in which key stakeholders will implement renewed governance that will enhance nursing professionalism and prevent suffering in the workplace. As the world has seen during the COVID-19 pandemic, and across other past health challenges humanity has faced, the tremendous work that nurses do is a pillar of healthcare systems and this cannot afford to be underestimated especially when thousands of lives are at stake.

This research, with its innovative methodology and emerging results, raises deeper issues about ethics and professional consciousness that need to be continuously nurtured, both in academic and professional settings, for a more holistic vision of patient safety. Further research work could continue addressing this important issue in order to provide a deeper understanding the links between patient safety and the professional practice of nurses, between outcomes and process of care in a multidimensional grounded perspective. Moreover, the INSÉPArable portfolio prototype needs to be refined and further exploration of its applications in nursing ecosystems are needed to pursue the development of a complete professional portfolio which represents a promising continued education tool for today's students, who will be tomorrow's nurses and managers promoting holistic health for all.

Declaration of Competing Interest

The authors declare no conflicts of interest.

Appendix A

Table A1.

Table A1
Themes used for guiding shadowing observations and individual interviews.

Themes guiding observation of nurses and patients	Examples	Themes dimensions analyzed	Examples
Direct patient/family care processes	Medication administration, monitoring of vital signs, catheter installation, assessments of the patient, type of approach, and care relationships	Functional environment	Effectiveness, care procedures and routines, behaviors, organization, workloads, technology
Indirect care-related processes	Writing down notes in patients' charts, paper work, organization/prioritizing of care/planning, communication with the care team, medical preparation, interprofessional collaboration, ongoing training, and inter-shift reports	Material environment	Space, objects, equipment, documentation, lighting
The nature and context of the nurse's professional/employee context	Workload, work schedules, break times, anything currently happening in the workplace (e.g., hospital certification, implementation of new systems), ongoing and completed training	Relational environment	Care team, collaboration with patients/families, interprofessional collaboration, leadership style
		Emotional environment	Expectations, concerns, satisfaction, reflexivity

Attached larger in a separated file.

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