Outside In: Creating Digital Nature Tailored To The Needs of Intensive Care Unit Patients

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Figure 1: Digital nature scenes that change over time corresponding to the contextual needs of ICU patients

ABSTRACT

Intensive care unit (ICU) environments play a crucial role in supporting patients' recovery, and nature experiences, particularly their visual elements, are commonly used in ICUs to stimulate relaxation. Fueled by digital technology, applications of virtual nature have emerged to bring nature to environments without direct access, including windowless ICU rooms. Despite its healing potential, there is a lack of consensus and strategy in designing virtual nature catering to the diverse patients' needs. This study investigates how to create virtual nature for intended effects promoting relaxation. Informed by a framework explaining the working mechanism underlying relaxation in nature, we introduce Digital Nature, a visual stimulation featuring a 24-hour streaming video of constantly changing virtual scenes. We describe how we incorporated an evidence-based approach into the design process of Digital Nature. A pilot study is planned to validate the effectiveness of Digital Nature, and ideas for further design implications are discussed.

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CHI EA '24, May 11–16, 2024, Honolulu, HI, USA

ACM ISBN 979-8-4007-0331-7/24/05
https://doi.org/10.1145/3613905.3650753

CCS CONCEPTS

• **Interaction design**; • **Interaction design process and methods**; • **Contextual design**;

KEYWORDS

Digital Nature, stimulated nature, patient experience, intensive care unit

ACM Reference Format:
Chan Mi, Kim, Thomas, van Rompay, and Geke, Ludden. 2024. Outside In: Creating Digital Nature Tailored To The Needs of Intensive Care Unit Patients. In *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI EA '24), May 11–16, 2024, Honolulu, HI, USA.* ACM, New York, NY, USA, 7 pages. https://doi.org/10.1145/3613905.3650753

1 INTRODUCTION

The intensive care unit (ICU) of a hospital is the daily battleground where the lives of critically ill patients hang in the balance and life-saving interventions are executed. While the setup of ICUs is optimized to support the survival of patients, the patient experience of staying in the ICU is known to be distressing [5]. Evidence indicates that patient experiences significantly impact health outcomes; stressful ICU experiences correlate with more negative outcomes [7, 16, 27], while positive experiences contribute to better recovery [6, 17, 24]. Recognizing this, there has been an increased interest in transforming the ICU into a healing environment [8, 12].

To create an ICU environment that is experienced as a holistic and personalized healing environment, it is essential to understand

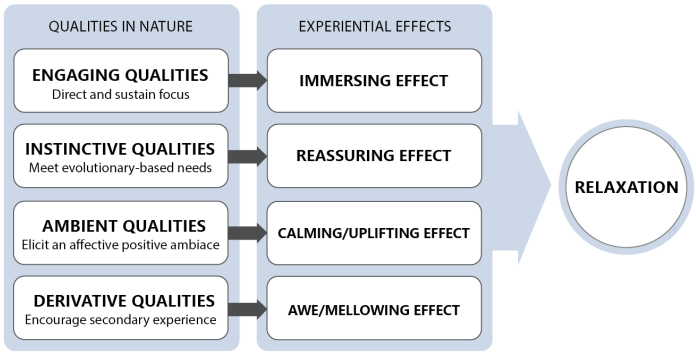

Figure 2: Four themes of qualities and their experiential effects leading to relaxation, adapted from Kim et al. [11]

the fundamental care needs of ICU patients. Previous studies [1, 13, 14] have explored the ICU patient experience and outlined the factors contributing to it. These studies revealed that while some factors, such as negative prospects and loss of control, apply to the ICU context in general, most factors are tied to specific moments or activities during ICU stays [1, 13, 14]. For instance, pain occurs during mobilization, and loneliness is often experienced outside of family visit hours, especially when patients are left alone in the ICU. Therefore, the design of ICU environments should acknowledge the context-specific needs of patients and be capable of providing appropriate solutions to address them.

As a way to create healing environments, nature experiences, especially their visual aspect, have been used to create relaxing effects [15, 22]. Often, these nature experiences have been used in the form of nature-inspired coloring, abstract graphics, or static photos of nature. Thanks to advances in technology, the means to provide visual nature experiences have become diversified, and various concepts providing dynamic and immersive experiences have been introduced including virtual reality (VR) [25], immersive projection technology [19], and virtual window concepts [20]. While these concepts demonstrate the therapeutic effects of simulated nature experiences as an alternative to real ones, insights into or guidelines on how to build visual content to stimulate relaxing experiences have been limited. Given that current simulated nature is mostly focused on short-term use and, in the long term, is less engaging and can even result in undesirable effects (e.g., boredom) [3], actionable knowledge supporting designers to tailor digital nature environments to the fluctuating needs of patients is required.

To fill this methodological gap, previous studies [2, 9, 10, 18, 21, 23, 26] have investigated the qualities in nature that bring about relaxing effects and their underlying mechanism. These studies either depart from evolutionary-based frameworks (e.g., connecting preferences for nature environments to safety or survival concerns) [2, 18, 26], or the experiential effect of nature such as stress reduction theory [21, 23] and attention restoration theory [9, 10]. A recent empirical study [11] expanded this knowledge by identifying 20 qualities grouped into four themes. Specifically, findings showed that nature scenes perceived as highly relaxing encompass multiple qualities that complement different functions across the defined four themes: direct and sustained visual engagement with the scene (Engaging qualities), appeal to instinctive evolutionary-based needs (Instinctive qualities), stimulation of an affective positive ambiance (Ambient qualities), and stimulation of secondary experience (Derivative qualities). Findings also suggested different routes to relaxation, including 'relaxation by immersion' and 'relaxation by reassurance'. Figure 1 visualizes how different nature qualities can be used to bring about these different effects leading to relaxation based on the conceptual framework of visual-nature experience [11].

Adopting this framework allowed us to create digital nature experiences that accommodate the general needs of ICU patients, as well as context-specific needs that change depending on the time of day (e.g., being awake in the morning and preparing for sleep in the evening) and care activities (e.g., distraction from pain during treatment). This supports the design of Digital Nature suitable for long-term use to optimally support patient well-being. In the following section, we report on the development process of Digital Nature and its use scenarios. We then describe a plan for a pilot study to validate the efficacy of digital nature. Finally, we discuss ideas for improving Digital Nature.

2 DEVELOPMENT OF DIGITAL NATURE

Digital Nature aims to enhance relaxation during an ICU stay through a simulated visual nature experience provided by a virtual window. It is designed to provide long-term visual stimulation, continuing from admission to discharge from the ICU. Digital Nature was specifically designed for use in the ICU department of the Medish Spectrum Twente (MST) located in Enschede, the Netherlands. Therefore, we adopted both generic and hospital-specific needs to the design. In this section, we describe the development process of the content of Digital Nature.

2.1 Developing the primary scene for the general needs of ICU patients

We developed Digital Nature by creating a virtual nature environment using Unity (www.unity.com), a game engine used to make three-dimensional (3D) interactive content, in collaboration with BMS lab from the University of Twente. Unity was selected because it enables the creation and modification of nature environments, including animation effects such as moving leaves or animals, as well as the rendering of realistic and high-quality movies.

Figure 3: Visual created as an ideal view from the ICU by a participant (former ICU patient)

To ensure that the design of the main scene is perceived as relaxing for vulnerable patients, we carefully selected and incorporated physical properties across the four different quality themes (see Figure 2, and for the overview of physical properties per quality themes, see Appendix A). Given that Digital Nature is intended for vulnerable patients who may be triggered by visual stimuli, we gathered insights about positive and negative stimuli for this specific group through expert interviews with ICU healthcare professionals (HCPs) from the hospital. The interview findings emphasize the importance of familiarity and strongly warrant against any content potentially associated with danger or mystery, such as a large body of shadows, as vulnerable patients could develop delirium from such visual stimuli. To incorporate specific characteristics of the nature environment familiar to the hospital patients, we conducted a co-creation session with a healthy participant who was a former ICU patient from the hospital. The participant was provided with visual materials representing various types of relaxing nature elements and asked to visualize the ideal view of their own ICU room, reflecting on personal experiences. The participant was then asked to explain the reasons for choosing certain aspects of created visual elements. The participant favored a landscape with an open field surrounded by trees, providing a sense of protection, which aligns with the concept of prospect and refuge from evidence-based frameworks [2]. They also appreciated vibrant colors and coziness, contributing to an uplifting feeling. In line with the insights from the expert interview, a farm-like view, typical and familiar in the region, was also mentioned, with the presence of farm animals bringing a comforting feeling. Figure 3 shows the visuals created by a participant and the quotes.

The qualities derived from the interview data, as well as preselected qualities from the framework, were incorporated into the primary scene of Digital Nature.

2.2 Developing variated scenes for context-specific needs

While the primary scene of Digital Nature meets the overall needs of ICU patients, we also need variations of Digital Nature that can cater to the context-specific needs of ICU patients, which may change over time and in different care situations. For instance, to support the circadian rhythm of ICU patients which is important for their recovery [4], yet challenging in most ICU settings due to the lack of natural light and outside view, Digital Nature could facilitate activation during the daytime and sleep during the night through proper stimulation, such as different light setting and animals entering the scene. We derived context-specific needs from the literature on ICU patient experience [13] and linked them with appropriate experiential effects that Digital Nature can provide. Table 1 shows the list of context-specific needs and the corresponding stimulation.

Incorporating different contextual needs in the ICU with the desired experiential effects, six variations of Digital Nature were developed: activating and calming, soft and forceful distraction, and reassuring and uplifting. These will be explained in the following section.

3 EXPERIENCE OF DIGITAL NATURE

3.1 Primary Digital Nature

The primary view caters to the general need of feeling relaxed for ICU patients with the integrated relaxing qualities in the scene (see Figure 4). The scene features a window-like view, stimulating the experience of looking outside at a calm and peaceful field of the region. This wide-open view, surrounded by trees, along with the presence of climbable trees nearby, satisfies our instinctive needs for both observation and refuge, creating a safe feeling (Instinctive

Table 1: Context-specific needs of ICU patients and desired effects of stimulation

Context in the ICU →	Waking-up, stay awake, family visit	Ready for sleep	Resting/staying alone in ICU(feeling bored)	Mobilization(feeling pain)	Feeling fear, feeling anxious	Feeling lonely, feeling sad
Appropriate stimulation effect →	Activating	Calming	Soft distraction	Forceful distraction	Reassuring	Uplifting

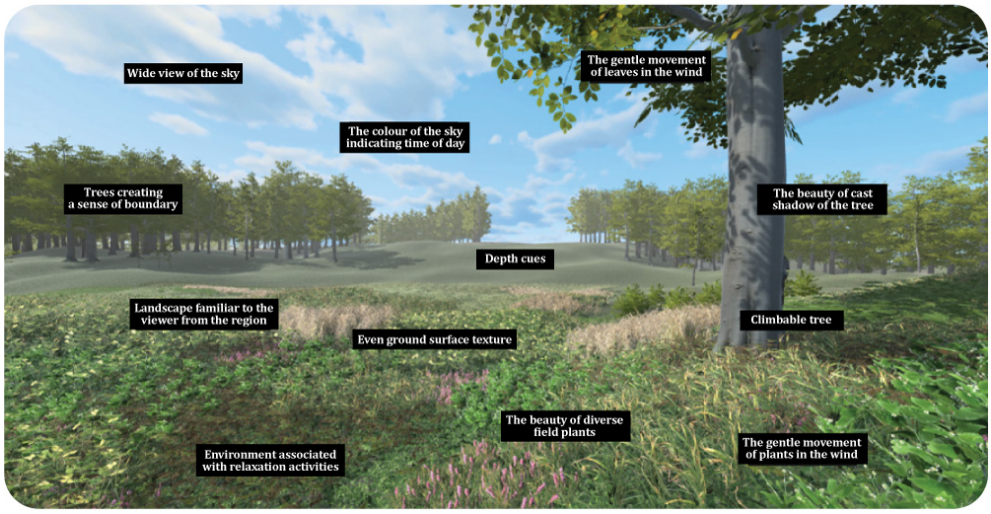

Figure 4: Primary view of Digital Nature with incorporated physical properties. The video version can be found in supplementary materials.

qualities). Meanwhile, the beauty of colorful field flowers and plants, along with the dappled shadows cast by the trees and their gentle movement created by the wind, captures the gaze of the viewer in a softly fascinating manner (Engaging qualities). The blue sky in the distance and the overall color scheme, which is fresh and warm, create the overall look of spring, symbolizing the new season and evoking positive feelings associated with vitality (Ambient qualities). The overall landscape is designed to resemble the surroundings of the hospital region, aiding in recalling a place the patient might visit frequently. The memories of spending good times there amplify the pleasantness and relaxation the patient will experience while looking at the scene, as they reminisce about those moments (Derivative qualities).

3.2 Variations of Digital Nature

3.2.1 From calming to activating. Digital Nature can support the circadian rhythm of patients by incorporating various stimuli to regulate people's energy levels: the morning version (Figure 5, left) can help activate ICU patients by providing a feeling of a new day, with a morning atmosphere composed of a blue sky blended with warm tones of light from sunrise, and shadows indicating the early time of the day. The evening version (Figure 5, right), on the other hand, can help calm down and prepare for sleep mode with an overall warm evening-like atmosphere, featuring a sunset on the horizon. In addition to the morning and evening versions, Digital Nature changes over time by the time of day to provide a sense of time and to encourage patients to stay awake during the daytime so that they can sleep better at night.

3.2.2 From soft distraction to forceful distraction. To support a pleasant ICU stay for patients, Digital Nature can function as a positive distraction [22], redirecting the patient's focus from moments of pain, loneliness, and boredom. Digital Nature offers different types of distraction based on the fluctuating needs of patients. For instance, during mobilization sessions that are experienced as painful, Digital Nature can provide a forceful distraction, effectively diverting patients from experiencing pain, by providing more variations in the visual content of the scene, such as the dynamic motions of butterflies, cows, and wind (see Figure 6, right). When patients need to rest in the room by themselves, the distraction level can be adjusted to a milder level by reducing stimuli (See Figure 6, left). This ensures it does not trigger excessive attention

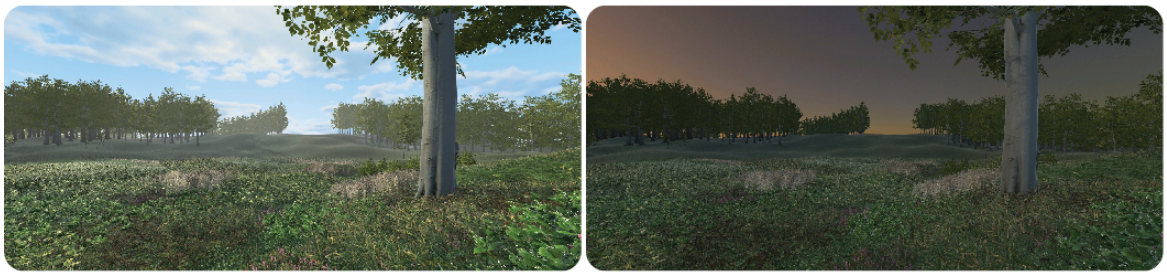

Figure 5: Digital Nature for activating (left) and calming (right)

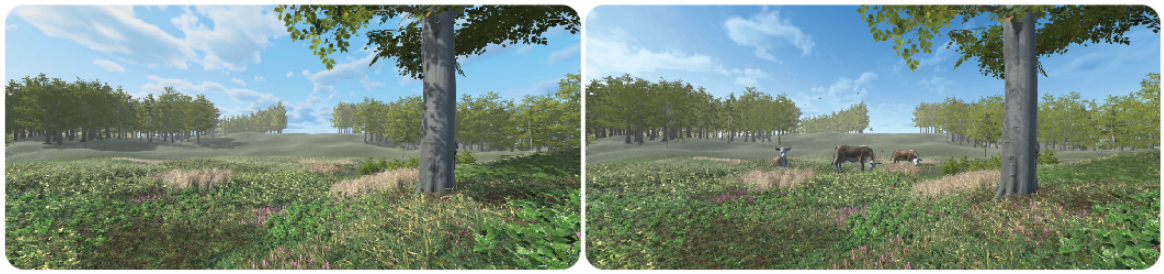

Figure 6: Digital Nature for soft distraction (left) and more forceful distraction (right)

Figure 7: Digital Nature for reassuring (left) and uplifting (right) effects

yet maintains a subtle presence that is sufficient to prevent patients from experiencing boredom.

3.2.3 From reassuring to uplifting. Digital Nature helps alleviate the tension of ICU patients in different ways. For instance, when patients feel fear or anxiety after having a nightmare, Digital Nature can reassure them with content featuring calming elements, including cows peacefully grazing, which signals that it is a safe and peaceful environment (Figure 7, left). When patients experience sadness due to their condition, Digital Nature can help uplift their mood with subtle surprise elements. Farm animals, such as rabbits and ducks, make occasional visits, displaying cheerful movements as they briefly appear and wander around the scene for about 15 minutes, serving as a pleasant surprise and evoking a subtle sense of fascination (Figure 7, right). The cheerful elements are considerably moderated, as this content is designed for ICU patients who are sensitive to stimulation.

3.3 Implementation of Digital Nature in the ICU

Digital Nature is designed to play on a large screen (55 inches) at a distance for the patient, like a window in the room. Digital Nature is made for 24-hour streaming. General scenes of Digital Nature are pre-scheduled in the stream, reflecting the time of the day and taking into account key activities such as waking up, mobilization, family visits, and sleeping. Variations are created as separate videos and put in a loop for a designated period. For instance, the forceful distraction version is scheduled for the time when mobilization takes place. Yet, patients or HCPs can choose specific versions of Digital Nature on demand. For instance, when a patient is feeling sad and mood enhancement is deemed desirable, HCPs or the patient can play an uplifting version of Digital Nature by choosing a video from the streaming list.

4 NEXT STEPS: VALIDATING THE EFFECT OF DIGITAL NATURE ON ICU PATIENT WELL-BEING

To validate the effect of using Digital Nature, we teamed up with the research and innovation department of the regional hospital to implement a version of Digital Nature in an ICU environment. We will conduct a pilot study with patients to answer the following research questions: does Digital Nature improve the health outcomes and experiences of ICU patients?

4.1 Study setup

A pilot study will take place in the ICU rooms of the regional hospital. A randomized controlled trial will be carried out, with participants assigned to either the experimental group (room with Digital Nature) or the control group (room without Digital Nature). Both groups will stay in rooms that do not have access to an outside view. In the experimental group, participants will have visual access to Digital Nature through a 55-inch screen positioned in front of the wall facing their bed, while the control group will have a static nature picture in the same location. By comparing various health outcomes and the perceived experience of the two groups, we aim to examine the effects of Digital Nature. Ten participants will be recruited for each group. Additionally, three family members and three HCPs will be recruited for interviews to share their perspectives on the effects of Digital Nature.

4.2 Procedure

Eligible participants will be selected by HCPs on the day after their ICU admission based on their level of consciousness; patients with a Richmond Agitation Sedation Scale (RASS) score of -3 or lower will

be excluded. Written consent will be obtained from patients or their families by the research team. Patients will be observed from the day after the admission until discharge from the ICU. During this period, patients will be visually exposed to either Digital Nature (the experimental group) or a static nature picture (the control group). Upon the request of patients, visual stimulation (i.e., Digital Nature and a nature picture) can be removed, and patients without visual stimulation for more than 25% of their ICU stay will be excluded from the study. Patient health outcomes will be regularly measured during their ICU stay. At discharge, separate interviews with patients, family members, and HCPs will take place.

4.3 Measures

The physical and psychological condition of patients in both groups will be assessed using common ICU measures, including RASS and the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU). Additionally, vital signs such as heart rate, respiration rate, and blood pressure will be measured to assess their stress levels, as well as the use of pain medication to evaluate pain levels. For perceived experiences, the Hospital Anxiety and Depression Scale (HADS), combined with selected items from the Positive and Negative Affect Schedule (PANAS), will be used to record the affective state of patients during their ICU stay. A short questionnaire with open-ended questions, such as overall experiences with Digital Nature and suggestions for improvement, will be used to collect qualitative data.

5 DISCUSSION

Digital Nature was developed to support patient healing in the ICUs. To ensure its relaxing effects, we applied insights from evidence-based nature experience frameworks, aligning various experiential effects of nature with the diverse needs of ICU patients. Especially, with its six variations, Digital Nature provides personalized stimulations for patients tailored to their specific contexts to help regulate energy and focus levels, as well as emotional states. Further personalization of stimulations for individual patients, considering personal preferences or cultural background, which could enhance effectiveness, is warranted for further exploration. By bridging academic insights with design parameters, our study is among the first to apply an evidence-based approach to creating virtual nature while taking into account the diverse needs of patients. The insights from our study enable designers to create virtual nature with long-term effects, bringing benefits not limited to hospital ICUs but also other places without access to nature, such as regular patient rooms or care centers for older adults. After the evaluation test described in this paper, the concept will be further explored for integration with other technologies to enable interactivity. This includes applications of sensors to interact with patient vital signs or environmental conditions, as well as connecting to dashboards for real-time integration of patient data. Additionally, a means for adapting motion parallax to provide dynamic perspectives akin to a real window to enhance the experience of viewers will be explored.

ACKNOWLEDGMENTS

The research is part of the Digital Nature project that received funding from the Top Technology Twente Connecting Industry program (TKI Topsector HTSM), which is partially funded (paid to the institution) by Philips. We thank Dr. Bart Beishuizen (Medisch Spectrum Twente) for supporting arranging patient and HCPs sessions, and Lucia Rabago Mayer (BMS Lab) for helping to create Digital Nature using Unity. Additionally, we extend our thanks to a former patient and HCPs who shared their valuable insights, and to the anonymous peer reviewers for their constructive comments.

REFERENCES

[1] Abuatiq, A. *et al.* 2013. Literature review: Patients' and health care providers' perceptions of stressors in critical care units. Dimensions of Critical Care Nursing. 32, 1 (2013), 22–27. DOI: https://doi.org/10.1097/DCC.0b013e31826199a0.

[2] Appleton, J. 1975. The Experience of Landscape. John Wiley and Sons.

[3] Browning, M.H.E.M. *et al.* 2020. Can Simulated Nature Support Mental Health? Comparing Short, Single-Doses of 360-Degree Nature Videos in Virtual Reality With the Outdoors. Frontiers in Psychology. 10, January (2020), 1–14. DOI: https://doi.org/10.3389/fpsyg.2019.02667.

[4] Devlin, J.W. *et al.* 2018. Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU. Critical care medicine. 46, 9 (2018), e825–e873. DOI: https://doi.org/10.1097/CCM.0000000000003299.

[5] Egerod, I. *et al.* 2015. The patient experience of intensive care: A meta-synthesis of Nordic studies. International Journal of Nursing Studies. 52, 8 (Aug. 2015), 1354–1361. DOI: https://doi.org/10.1016/j.ijnurstu.2015.04.017.

[6] Goldfarb, M.J. *et al.* 2017. Outcomes of Patient- and Family-Centered Care Interventions in the ICU. Critical Care Medicine. 45, 10 (Oct. 2017), 1751–1761. DOI: https://doi.org/10.1097/CCM.0000000000002624.

[7] Gruenberg, D.A. *et al.* 2006. Factors Influencing Length of Stay in the Intensive Care Unit. American Journal of Critical Care. 15, 5 (Sep. 2006), 502–509. DOI: https://doi.org/10.4037/ajcc2006.15.5.502.

[8] Hamilton, D.K. and Shepley, M.M. 2010. Design for critical care: An evidence-based approach. Routledge.

[9] Kaplan, R. and Kaplan, S. 1989. The experience of nature: a psychological perspective. Cambridge University Press.

[10] Kaplan, S. 1995. The restorative benefits of nature: toward an integrative framework. Journal of environ. 15, (1995), 169–182. DOI: https://doi.org/10.1016/0272-4944(95)90001-2.

[11] Kim, C.M. *et al.* 2023. From a Morning Forest to a Sunset Beach: Understanding Visual Experiences and the Roles of Personal Characteristics for Designing Relaxing Digital Nature. International Journal of Human–Computer Interaction. (Nov. 2023), 1–18. DOI: https://doi.org/10.1080/10447318.2023.2285626.

[12] Kim, C.M. *et al.* 2021. Overview and Strategy Analysis of Technology-Based Nonpharmacological Interventions for In-Hospital Delirium Prevention and Reduction: Systematic Scoping Review. Journal of Medical Internet Research. 23, 8 (Aug. 2021), e26079. DOI: https://doi.org/10.2196/26079.

[13] Kim, C.M. *et al.* 2024. Reimagine the ICU: Healthcare Professionals' Perspectives on How Environments (Can) Promote Patient Well-Being. Health Environments Research & Design Journal. (2024). DOI: https://doi.org/10.1177/19375867231219029

[14] Krampe, H. *et al.* 2021. Perceived Severity of Stressors in the Intensive Care Unit: A Systematic Review and Semi-Quantitative Analysis of the Literature on the Perspectives of Patients, Health Care Providers and Relatives. Journal of Clinical Medicine. 10, 17 (Aug. 2021), 3928. DOI: https://doi.org/10.3390/jcm10173928.

[15] Lechtzin, N. *et al.* 2010. A Randomized Trial of Nature Scenery and Sounds Versus Urban Scenery and Sounds to Reduce Pain in Adults Undergoing Bone Marrow Aspirate and Biopsy. journal of alternative and complementary medicine. 16, 9 (2010), 965–72. DOI: https://doi.org/10.1089/acm.2009.0531.

[16] May, A.D. *et al.* 2021. Provider-Documented Anxiety in the ICU: Prevalence, Risk Factors, and Associated Patient Outcomes. Journal of Intensive Care Medicine. 36, 12 (Dec. 2021), 1424–1430. DOI: https://doi.org/10.1177/0885066620956564.

[17] Nielsen, A.H. *et al.* 2019. Intensive care unit diaries: Developing a shared story strengthens relationships between critically ill patients and their relatives: A hermeneutic-phenomenological study. International Journal of Nursing Studies. 92, (Apr. 2019), 90–96. DOI: https://doi.org/10.1016/j.ijnurstu.2019.01.009.

[18] Orians, G.H. and Heerwagen, J.H. 1992. Evolved responses to landscape. The adapted mind: Evolutionary psychology and the generation of culture. J.H. Barkow *et al.*, eds. Oxford University Press. 555–579.

[19] Philips Ambient Experience solution at Children's Medical Center Dallas helps calm young patients with behavioral health issues: 2022. https://www.philips.com/a-w/about/news/archive/standard/news/press/2022/20221011-philips-ambient-experience-solution-at-children-s-medical-center-dallas-helps-calm-young-patients-with-behavioral-health-issues-winning-multiple-design-awards.html. Accessed: 2023-05-22.

[20] Radikovic, A.S. *et al.* 2005. Artificial Window View of Nature. CHI (Portland, 2005), 1993–1996.
[21] Ulrich, R.S. 1983. Aesthetic and Affective Response to Natural Environment. Behavior and the Natural Environment. Springer US. 85–125.
[22] Ulrich, R.S. 1991. Effects of interior design on wellness: theory and recent scientific research. Journal of health care interior design: proceedings from the ... Symposium on Health Care Interior Design. Symposium on Health Care Interior Design. 3, (1991), 97–109.
[23] Ulrich, R.S. *et al.* 1991. Stress recovery during exposure to natural and urban environments. Journal of Environmental Psychology. 11, 3 (1991), 201–230. DOI: https://doi.org/10.1016/S0272-4944(05)80184-7.
[24] Ulrich, R.S. *et al.* 2004. The role of the physical environment in the hospital of the 21st century: A once-in-a-lifetime opportunity. The Center for Health Design. (2004), 1–100.
[25] Veling, W. *et al.* 2021. Virtual Reality Relaxation for Patients With a Psychiatric Disorder: Crossover Randomized Controlled Trial Corresponding Author: Journal of Medical Internet Research. 23, (2021), 1–14. DOI: https://doi.org/10.2196/17233.
[26] Wilson, E.O. 1984. Biophilia. Harvard University Press.
[27] Zaal, I.J. *et al.* 2013. Intensive care unit environment may affect the course of delirium. Intensive Care Medicine. 39, 3 (Mar. 2013), 481–488. DOI: https://doi.org/10.1007/s00134-012-2726-6.

APPENDIX A

Table 2: List of relaxing qualities and related physical properties incorporated in the overall scene of Digital Nature

Quality theme	Quality	Physical properties applied to Digital Nature
Engaging	Beauty	Cast shadow of the tree, diverse field flowers and plants
	Soft dynamics	Gentle movement of leaves and plants in the wind
Instinctive	Observatory	Wide view of the sky, dept cues
	Refuge	Clustered climbable trees
	Positive prospects	Blue sky
	Familiarity	Landscape similar to the region
Ambient	Time of the day	The color of the sky and the direction of the shadow indicating time of day
	New season	Spring/summer-like
	Coziness	Colorful & warm ambiance
	Country-side feeling	Farm-like, farm animal
Derivative	Memory-inspiring	A place with memories, a place where relaxing activities take place