



First contact: Experiences of final year psychology students with virtual reality relaxation in higher education

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ABSTRACT

This study explored how final-year psychology students experienced their initial exposure to virtual reality (VR) relaxation using a scientifically developed application designed to promote emotional well-being and stress reduction. The aim was to understand how VR is perceived as a space for emotional regulation, embodiment, and reflection within psychological education. A qualitative exploratory design with a focus group approach was employed. Six final-year psychology students from the Universidad Austral de Chile individually tested VRelax for approximately 10 min before participating in a focus group session lasting 90 min. Data were analyzed using reflexive thematic analysis, emphasizing lived experience, sensory engagement, and meaning-making processes. The analysis generated seven overarching themes: curiosity and immersion, usability and learning, disconnection and reorientation, therapeutic potential, bodily and sensory awareness, expectations versus reality, and cultural and contextual reflections. Participants described VR as both calming and thought-provoking, highlighting its potential for emotional regulation and reflective learning while noting challenges related to adaptation, novelty, and environmental context. Overall, VR was perceived as an innovative and pedagogically meaningful tool with potential applications in stress management, emotional self-regulation, and professional development. The findings emphasize the importance of usability, contextual sensitivity, and reflexivity in designing VR interventions that foster well-being and presence, as well as the need for cultural and institutional adaptation to ensure that VR-based relaxation tools are not only technologically effective but also culturally resonant and ethically grounded within Latin American contexts.

1. Introduction

Virtual reality (VR) has evolved from an experimental innovation into a scientifically validated medium for studying and influencing human behavior, cognition, and emotion (Lanier, 2017; Bailenson, 2018; Slater & Sanchez-Vives, 2016). Within psychology and the behavioral sciences, VR functions as both a research instrument and an applied intervention tool, enabling the controlled simulation of emotionally and cognitively meaningful environments (Loomis et al., 1999; Parsons, 2021). Through immersive audiovisual technologies, users can “step into” digitally constructed spaces that temporarily suspend ordinary perception and afford novel forms of engagement with emotion, attention, and bodily awareness. As Slater and Sanchez-Vives (2016) and Skarbez et al. (2017) describe, VR's distinctive power lies in generating the subjective feeling of “being there,” or presence, a

perceptual and psychological phenomenon that has profound implications for emotional regulation, learning, and therapeutic change.

Beyond its technological novelty, VR offers a new experiential context for exploring inner states such as calm, curiosity, and mindfulness, which are central to mental health and well-being (Kabat-Zinn, 2013; Ma et al., 2023; Wong et al., 2025). By providing perceptually convincing yet emotionally safe environments, VR allows individuals to regulate emotions and restore balance in ways that traditional modalities rarely achieve (González Moraga, 2025; Li Pira et al., 2023; Riva et al., 2019). Clinically, VR has been successfully used to treat phobias, anxiety, posttraumatic stress, and chronic pain (Freeman et al., 2017; Maples-Keller et al., 2017). In the domain of stress management and relaxation, applications such as VRelax have shown promise by immersing users in multisensory natural scenes that promote detachment from daily stressors and facilitate both physiological recovery and

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emotional restoration (Riches et al., 2023). The use of natural environments in VR relaxation applications is grounded in a robust body of research demonstrating the restorative effects of nature exposure on stress, attention, and emotional regulation. According to Attention Restoration Theory and Stress Reduction Theory, natural settings facilitate recovery from cognitive fatigue and promote physiological calm (Kaplan & Kaplan, 1989; Ulrich et al., 1991). Empirical studies have shown that both real and virtual representations of forests, water, and rural landscapes can reduce perceived stress, enhance mood, and elicit relaxation-related physiological responses (Sunthararajah et al., 2025; White et al., 2019). In immersive VR contexts, such environments provide a safe and controlled means of delivering these restorative experiences, particularly when direct access to nature is limited. These findings suggest that VR's therapeutic potential extends beyond symptom reduction toward the promotion of holistic health and emotional resilience (Rizzo & Koenig, 2017).

Recent systematic reviews and meta-analyses (Riches et al., 2023; Xu et al., 2024) confirm that immersive relaxation programs can reduce acute stress, enhance mood, and elicit physiological markers of calmness such as decreased heart rate and skin conductance. However, recent reviews also emphasize persistent limitations: most studies rely on short-term interventions, small or homogeneous samples, and a predominance of quantitative measures that overlook the subjective, relational, and contextual dimensions of users' experiences (Li Pira et al., 2023; Parsons, 2021; Riches et al., 2023). Although VR's effectiveness is now well established, much less is known about how individuals interpret, feel, and make meaning of their immersive encounters, particularly during their first exposure to VR. This initial moment, when users experience immersion as both a technological novelty and an emotional event, represents a crucial entry point for understanding engagement, learning, and therapeutic responsiveness (Ilioudi et al., 2023; Rupp et al., 2019; Triberti & Riva, 2016).

From a salutogenic and humanistic perspective (Antonovsky, 1987), VR can be conceptualized not merely as a digital tool but as a health-promoting experiential space. According to Antonovsky's Sense of Coherence model, well-being is enhanced when experiences are perceived as comprehensible, manageable, and meaningful. VR relaxation (Veling et al., 2021) can foster these dimensions by providing coherent and predictable stimuli (comprehensibility), intuitive interaction and a sense of control (manageability), and emotionally resonant scenes that elicit reflection and a sense of significance (meaningfulness). Within this framework, VR operates as an affective-embodied affordance, a concept derived from ecological psychology (Gibson, 1979) and later extended to digital environments (Norman, 2013; Jo & Park, 2023; Lee, Jung, TomDieck, García-Milon, & Kim, 2025), that enables users not merely to observe but to enact self-regulatory and emotionally meaningful processes through embodied interaction. In this sense, VR's capacity to integrate perception, action, and emotion allows individuals to transform abstract cognitive understanding into lived, embodied experience, bridging the gap between reflection and regulation. Recent research highlights that affective and sensory affordances are central to sustaining engagement and promoting psychological well-being in immersive settings (Li Pira et al., 2023; Wiecezorek et al., 2024). Consequently, VR can be understood as a medium that unites comprehension, embodiment, and reflection in the cultivation of emotional regulation and psychological resilience.

VR also invites renewed consideration of the embodied nature of psychological experience. Drawing on Merleau-Ponty's (1962) phenomenology of perception, contemporary scholarship (Forster et al., 2022; Guy et al., 2023; Riva & Waterworth, 2003) demonstrates that the sense of presence in VR arises from dynamic interactions between perception, emotion, and the body. Bodily sensations, such as shifts in balance, posture, or temperature, are not peripheral but constitutive elements of emotional engagement. This embodied realism enhances immersion and supports the integration of sensory, cognitive, and affective processes in what is referred to as embodied cognition; the dynamic coupling of

body, mind, and emotion through immersive experience (Gall et al., 2021; Guy et al., 2023; Mills, Scholes, & Brown, 2022). In this way, VR becomes an embodied medium of psychological insight, supporting emotion regulation and self-awareness through active sensory participation (Gallagher, 2023). These mechanisms make VR uniquely suited for cultivating reflective and emotion-based learning within higher education and psychological training.

Beyond clinical and affective domains, VR's educational potential has attracted growing attention in recent years. Educational researchers increasingly recognize that immersive technologies can transform how students engage with complex, abstract, and emotionally charged content (Dede et al., 2017). In psychology education, VR offers opportunities for experiential learning, allowing students to encounter emotional and perceptual processes in ways that complement theoretical instruction (Maroukakis et al., 2023). Kolb's (1984) experiential learning theory posits that knowledge emerges through iterative cycles of experience, reflection, conceptualization, and experimentation. Recent studies have extended this framework to immersive contexts, showing that VR can foster empathy, self-awareness, and conceptual understanding in learners (Radianti et al., 2020; Makransky & Petersen, 2021). By enabling students to safely explore emotional and sensory experiences, VR may enhance comprehension of key psychological constructs such as attention, stress, and emotion regulation (Colombo et al., 2021); competencies essential for future clinicians and educators. These educational affordances position VR not only as a therapeutic resource but also as a transformative pedagogical medium that bridges cognition, embodiment, and reflection (Jensen & Konradsen, 2018).

Despite the rapid global expansion of VR research, geographical and cultural disparities persist. Most empirical work originates from Europe, North America, and East Asia, leaving Latin American contexts underrepresented (Marín-Morales et al., 2018; Antón-Sancho et al., 2024). This gap is crucial because cultural frameworks profoundly shape experiences of stress, emotion, and well-being. In collectivist cultures, emotion regulation and stress management often occur through relational practices rather than individual introspection (Pan & Hamilton, 2018). Implementing VR-based interventions in such contexts requires cultural adaptation, not only in aesthetic or linguistic terms but in how social presence and shared experience are integrated into design (Shin, 2019). Understanding how Latin American users encounter and interpret VR is thus essential for developing culturally resonant and ethically grounded applications of immersive technology.

Within this broader context, the present study explores how final-year psychology students at the Universidad Austral de Chile experienced their first exposure to VR through VRelax, a scientifically developed relaxation application. This population was chosen not only because they represent future practitioners likely to apply VR in therapeutic and educational contexts, but also because their engagement provides a unique window into the intersection of emotional experience, professional reflection, and technological curiosity. Focusing on this first encounter with VR allows for the examination of how presence, embodiment, and reflection unfold in tandem, and how users construct meaning around immersive relaxation. By investigating these experiences qualitatively, this study deepens understanding of VR as both a technological and psychological space; one capable of fostering emotional regulation, self-awareness, and professional development in higher education. In doing so, it contributes to ongoing debates about the behavioral, emotional, and cultural dimensions of human interaction with immersive technologies.

The novel contribution of this study lies in its qualitative examination of first-time VR experiences within a psychology education context in Latin America. While previous research has largely focused on efficacy outcomes or repeated VR use in clinical populations, this study addresses a critical yet underexplored moment: the initial encounter with immersive technology as both an emotional and pedagogical event. By examining how final-year psychology students simultaneously experience VR as users and reflect on its professional relevance, the

study bridges experiential, educational, and cultural perspectives. In doing so, it provides insight into how immersion, embodiment, and meaning-making unfold during first exposure to VR, and how these processes are shaped by cultural context and emerging professional identity.

2. Aims

The aims of this study were threefold:

1. To explore how psychology students perceive and embody VR during their first immersive experience in a relaxation environment;
2. To examine how their descriptions of presence, emotion, and bodily awareness evolve through interaction and reflection; and
3. To identify educational, therapeutic, and cultural implications of these experiences, particularly for implementing VR-based tools for well-being in Latin American academic and clinical contexts.

By examining the “first contact” with VR as both a psychological and pedagogical event, this study contributes to the growing discourse on how immersive technologies can promote not only emotional regulation and relaxation but also self-understanding and professional growth. In doing so, it illuminates the transformative potential of VR as a medium that bridges technological innovation, embodied learning, and psychological well-being.

3. Method

3.1. Design

This study employed a qualitative, exploratory design grounded in a reflective–interpretive paradigm (Braun & Clarke, 2006, 2019). The objective was to explore how psychology students experienced their first encounter with virtual reality (VR) as a context for emotional regulation and well-being. It represented the initial phase of a participatory research project in which the same group would later act as co-investigators in the implementation of VR within psychological education. This preliminary phase aimed to capture participants’ lived experiences and meaning-making processes prior to formal implementation, serving simultaneously as experiential learning and reflexive inquiry into technology-mediated well-being. The study adhered to established qualitative research standards, including the Consolidated Criteria for Reporting Qualitative Research (COREQ; Tong et al., 2007), emphasizing methodological flexibility, contextual sensitivity, and the co-construction of meaning between participants and researchers. Reflexivity was maintained throughout the analytic process to acknowledge and critically engage with researcher positionality and interpretive influence (Finlay, 2002). The analytic stance was inductive and iterative, aimed at generating rich, descriptive, and interpretive insights rather than testing predefined hypotheses. To ensure trustworthiness, the study followed the criteria of credibility, dependability, confirmability, and transferability through reflexive journaling, peer debriefing, and iterative discussion among the research team (Nowell et al., 2017).

3.2. Participants

Six final-year psychology students (three women, three men; M age = 29.5 years) from the Universidad Austral de Chile (Puerto Montt Campus) participated voluntarily. Final-year psychology students were selected because they are in a transitional phase between academic training and applied professional practice. At this stage, students have acquired foundational knowledge in psychological assessment, intervention, and ethics, enabling them to reflect on VR not only as an embodied user experience but also as a potential tool for future clinical and educational use. This dual experiential–professional positioning

provides a unique analytic perspective that would be less accessible in earlier-stage students or in disciplines without a direct clinical orientation. Participants were recruited through purposeful sampling (Palinkas et al., 2015) according to two inclusion criteria: 1) enrollment in the final year of the psychology program, and 2) participation as co-investigators in an upcoming VR-based research project. None had prior significant experience with virtual reality. Participation was voluntary, uncompensated, and based on written informed consent. No additional demographic or technical data were collected to preserve confidentiality and analytic focus.

3.3. Procedure

The study took place in a quiet, comfortable room at the university. Each participant individually tested VRelax, a scientifically developed VR application designed to promote relaxation and mindfulness through immersive 360° natural environments (e.g., beaches, forests, snowy landscapes, and animal-based rural scenes; see Figs. 1–4). The selection of natural environments was informed by prior research showing that exposure to natural settings, both real and virtual, supports stress reduction, attentional restoration, and emotional regulation. Using a Meta Quest 2 head-mounted display (HMD), participants freely explored the VRelax application for approximately 10 min. The VR exposure was intentionally brief to capture first-time experiential reactions while minimizing fatigue and habituation effects, which is recommended in exploratory VR research focusing on initial user experiences. During the immersion, participants were encouraged to attend closely to their sensory impressions and emotional responses. Immediately after the individual exposure, participants took part in a semi-structured focus group moderated by a psychologist experienced in qualitative methods and digital mental health interventions. The conversation addressed first impressions, emotional reactions, usability, bodily sensations, and perceived therapeutic potential of VR. The semi-structured discussion was guided by flexible, open-ended prompts, such as “How would you describe your overall experience with VR?”, “What emotional or bodily reactions did you notice during the session?”, and “Can you imagine potential psychological or therapeutic uses for this type of VR experience?”. The focus group format was used to facilitate collective reflection and shared meaning-making following the immersive experience. The session lasted approximately 90 min, allowing sufficient time for in-depth discussion, elaboration of participants’ reflections, and interaction among participants, and was audio-recorded and transcribed verbatim. Field notes were also collected to document contextual details, group dynamics, and non-verbal expressions.

3.4. Ethical considerations

Ethical approval was granted by the Ethical Review Committee of the Universidad Austral de Chile (Initial Report I.R.I No. 26-2024; Project INID 210009), under the Vice-Rectorate for Research, Development, and Artistic Creation. All participants received detailed oral and written information about the study’s purpose, procedures, voluntary nature, and data confidentiality. They were informed of their right to withdraw at any time without penalty or academic consequence, and each provided written informed consent prior to participation. Given participants’ dual role as students and future co-investigators, special attention was devoted to power dynamics, voluntary participation, and reflexivity (Guillemin & Gillam, 2004). The moderator ensured open, non-hierarchical dialogue so participants could express critical reflections freely. All data were anonymized upon transcription, with identifying details removed. Digital files were stored on secure institutional computers with restricted access to the core research team. Research procedures adhered to the Declaration of Helsinki (2013 revision) and Chilean national regulations for human subjects research.

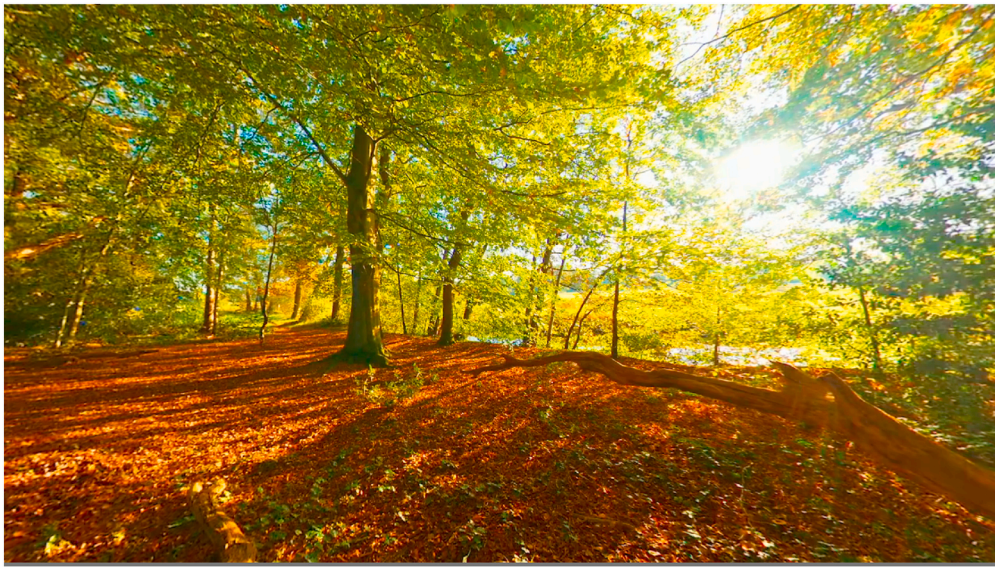


Fig. 1. Example of a VRelax virtual environment showing a sunlit forest landscape. The natural lighting, textures, and spatial depth of the environment were designed to enhance presence and emotional engagement, evoking feelings of warmth, safety, and restoration during participants' immersive experience.

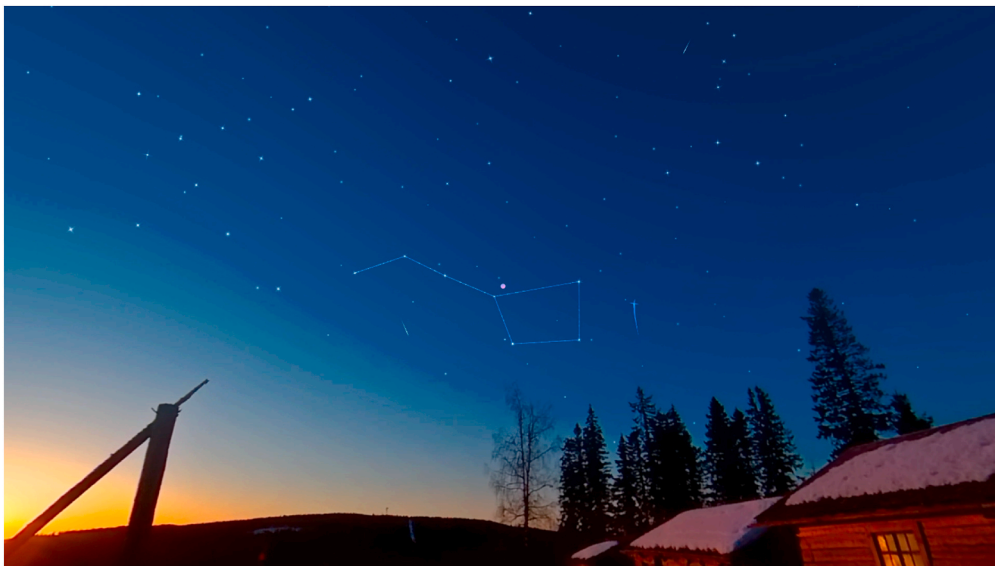


Fig. 2. Example of an interactive VRelax environment depicting a nocturnal landscape with constellations. Participants could observe or trace star patterns in real time, promoting curiosity, attentional focus, and calmness through gentle visual interaction and ambient sound.

3.5. Data analysis

Data were analyzed using Reflexive Thematic Analysis (RTA) following [Braun and Clarke \(2006, 2019\)](#). An inductive, iterative approach was employed to identify patterns of meaning within participants' narratives. The analytic process involved:

1. Repeated reading of transcripts and field notes for familiarization;
2. Line-by-line open coding focused on presence, embodiment, usability, and emotional regulation;
3. Grouping codes into candidate themes and mapping thematic relationships;
4. Reviewing and refining themes for coherence and distinction;
5. Defining and naming final themes with supporting quotations; and
6. Producing an interpretive synthesis linking participants' voices with conceptual insights.

Throughout the analysis, reflexivity was emphasized, acknowledging the dual role of participants as both learners and co-researchers and how this positioning shaped meaning-making ([Finlay, 2002](#)). Analytical memos and an audit trail were maintained to ensure transparency and consistency. Interpretations were peer-reviewed within the research team until consensus was reached on the thematic structure. Coding was conducted manually to maintain closeness to the data. All transcripts were pseudonymized and securely stored on institutional servers accessible only to the core research team. Given the exploratory nature of this phase, no physiological or quantitative triangulation was performed.

The first author led the analytic process and was actively involved in all stages of the reflexive thematic analysis. Initial coding was conducted inductively and remained close to the data, with codes generated through careful, line-by-line engagement with the transcripts to capture patterns of meaning related to participants' experiences. The two co-

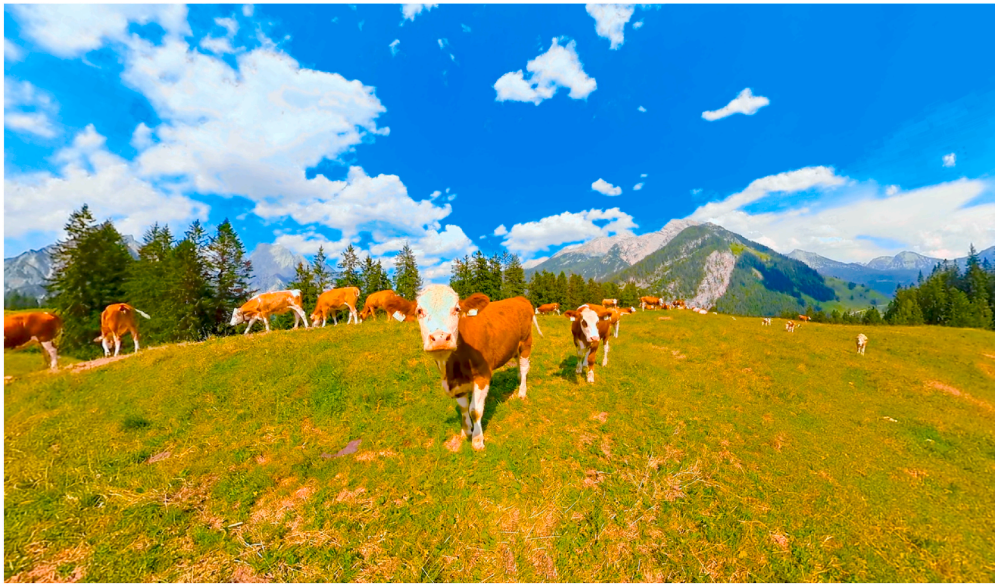


Fig. 3. Example of a VRelax virtual environment used in the study. Participants were immersed in calming natural scenes, such as open meadows with grazing cows, designed to evoke relaxation and mindfulness through gentle motion, ambient sounds, and visual realism.



Fig. 4. Example of a VRelax virtual environment depicting a snowy forest landscape with a flowing stream. This type of immersive scene was designed to promote sensory calmness and emotional grounding through natural sound, movement, and visual depth, allowing participants to experience presence and relaxation during their first VR exposure.

authors contributed through ongoing reflexive discussions, peer debriefing, and critical review of coding decisions and theme development, particularly during phases of code refinement and thematic construction. Reflexivity was treated as an integral component of the analysis, with the researchers continuously examining how their disciplinary backgrounds, prior experience with virtual reality, and educational roles may have shaped analytic focus and interpretative choices. Throughout the analytic process, provisional interpretations were revisited, compared across cases, and refined through collaborative dialogue to ensure coherence, internal consistency, and conceptual clarity. These collaborative reflexive practices were used to critically interrogate interpretations and support analytic rigor.

To enhance the trustworthiness of the analysis, the study adhered to the criteria proposed by Lincoln and Guba (1985), encompassing

credibility, transferability, dependability, and confirmability. Credibility was supported through prolonged engagement with the data, iterative reading, and the inclusion of direct quotations to ensure that interpretations reflected participants' lived experiences. Dependability was strengthened by maintaining a detailed audit trail of analytic decisions, memos, and theme development, ensuring transparency and traceability throughout the analytic process. Confirmability was enhanced through continuous reflexive practice, including the documentation of researcher assumptions and peer debriefing within the research team to minimize bias and foster analytical dialogue. Transferability was addressed by providing a rich description of the research context, participant characteristics, and procedural details, allowing readers to assess the applicability of findings to other educational or cultural settings. These methodological strategies collectively

contributed to the robustness and transparency of the thematic interpretation, aligning with contemporary recommendations for rigor in qualitative inquiry (Finlay, 2002; Nowell et al., 2017).

4. Results

The reflexive thematic analysis identified seven overarching themes and twenty subthemes that together illustrate how final-year psychology students experienced their first encounter with virtual reality (VR) as an emotionally, cognitively, and sensorily rich phenomenon. The themes trace a developmental trajectory that begins with curiosity and sensory immersion, progresses through emotional engagement and reflection, and culminates in contextual awareness and professional imagination. Participants' narratives revealed a multilayered process of meaning-making that integrated embodied sensations, affective responses, and reflective understanding. Overall, VR was perceived not merely as a technological novelty but as a psychologically meaningful environment, a medium through which students explored presence, calmness, and the fluid boundary between the virtual and the real. The seven themes and their corresponding subthemes are summarized in Table 1 (see Table 1), which provides an overview of the thematic structure and interpretive focus that emerged from the data. Each theme is elaborated in the following sections and supported by illustrative quotations, highlighting the emotional, sensory, and reflexive dimensions of participants' experiences.

4.1. Theme 1. First encounter: From curiosity to immersion

Across this theme, students' accounts already reveal a dual positioning, as they described their immediate, embodied reactions to VR while simultaneously beginning to interpret the experience through an emerging professional lens shaped by their psychological training. The first theme captures students' immediate reactions upon encountering VR for the first time. It reflects a dual process of emotional arousal and perceptual adjustment as participants entered an unfamiliar yet captivating digital space. Their accounts illustrate how curiosity, fascination, and mild disorientation coexist during the transition from the physical to the virtual world, marking the beginning of an experiential learning process. This theme consists of two subthemes: Novelty and excitement (1.1), which describes the initial emotional and perceptual impact of VR, and Emotional engagement and adaptation (1.2), which explores the progression from surprise to comfort as participants adjusted to the virtual environment.

4.1.1. Novelty and excitement

Students' first encounter with virtual reality (VR) was marked by a strong sense of novelty and excitement. For most participants, this was their first exposure to immersive technology, an experience that immediately captured their attention and curiosity. The digital environments were described as visually striking, interactive, and emotionally engaging, prompting spontaneous expressions of amazement and surprise.

"It was entertaining ... very interactive, really good." — P1

"It's amazing. It really grabs your attention, and you kind of forget what's real." — P6

The sense of presence and perceptual immersion created a temporary blurring of boundaries between the physical and virtual worlds. Students described feeling simultaneously captivated and slightly disoriented, highlighting how VR can generate both fascination and mild sensory confusion. This ambivalent mix of awe and adjustment reflected the novelty of the encounter, positioning VR as both a technological and psychological frontier of experience.

Table 1

Overview of main themes and subthemes identified through reflexive thematic analysis.

Theme	Subtheme	Analytic Description
1. First Encounter: From Curiosity to Immersion	1.1 Novelty and Excitement	Participants described their first contact with VR as surprising, playful, and engaging—an entry into an unknown yet emotionally stimulating environment. Initial surprise gradually transformed into comfort and absorption, reflecting rapid emotional adjustment and openness to the virtual context.
	1.2 Emotional Engagement and Adaptation	The simplicity of navigation and visual clarity of VRelax facilitated immediate engagement and minimized frustration. Users reported a brief learning curve before mastering controls, linking technological familiarity to confidence. Ease of use enhanced immersion and emotional safety, allowing focus on the experience rather than the interface.
2. Usability and Interaction with the Application	2.1 Intuitive Design and Accessibility	Some participants felt momentarily disoriented after removing the headset, highlighting VR's power to alter spatial and temporal awareness.
	2.2 Learning and Adjustment	Reconnecting to the physical setting prompted reflection on the boundary between virtual and real, and on the importance of mindful re-entry.
	2.3 Usability and Emotional Engagement	VR was perceived as a calming and restorative tool capable of promoting relaxation and focus. Students envisioned VR sessions as short "mental breaks" for everyday stress or clinical prevention. Participants linked their experience to future professional use in mental health care and self-regulation.
3. Disconnection and Reorientation	3.1 Detachment from the Physical World	Reports of dizziness, postural changes, or body tilt revealed embodied aspects of presence. The realism of sound, light, and texture intensified immersion and emotional resonance.
	3.2 Readjustment and Reflective Awareness	Bodily awareness became an avenue for reflection, showing how immersion engages perception and cognition together.
4. Psychological and Therapeutic Potential	4.1 Stress Reduction and Emotional Regulation	Some expected an action-oriented or game-like experience, influenced by popular media portrayals of VR.
	4.2 Preventive and Restorative Use	Participants expressed amusement and admiration at the vivid realism of natural scenes (e.g., "the same cows again").
	4.3 Therapeutic Imagination and Professional Insight	
5. Bodily and Sensory Awareness	5.1 Physical Sensations and Balance	
	5.2 Sensory Vividness and Illusion	
	5.3 Embodiment as Part of Learning	
6. Expectations versus Reality	6.1 Preconceptions of Interactivity	
	6.2 Visual Realism and Surprise	

(continued on next page)

Table 1 (continued)

Theme	Subtheme	Analytic Description
7. Potential Users and Cultural Context	6.3 Redefining Relaxation through Stillness	Students discovered that relaxation could arise from passive observation and sensory stillness rather than activity.
	7.1 Identifying Potential Beneficiaries	Students proposed applications for individuals with limited mobility, stress, or confinement.
	7.2 Cultural Nuances in Stress Management	Participants reflected on Chilean and Latin American collectivist approaches to coping, emphasizing social connectedness.
	7.3 VR as a Socially Adaptable Tool	Suggestions emerged to include interactive or shared components to align VR with culturally rooted relational practices.

4.1.2. Emotional engagement and adaptation

As participants spent more time in the virtual environment, their emotional responses evolved from surprise to comfort. What began as curiosity soon transformed into an experience of ease and absorption. Students described a process of emotional adaptation in which they gradually felt more relaxed and at home within the digital setting.

“At first I didn’t know what to expect, but then I started to relax, it was like being somewhere else.” — P3

This progression from excitement to calmness illustrates how immersive technologies can foster affective engagement and perceptual adjustment over time. The combination of intuitive usability, sensory richness, and environmental realism appeared to facilitate this emotional transition. Students’ reflections suggest that even during a short exposure, VR can prompt a form of experiential learning, in which initial uncertainty gives way to reflective presence. In this way, VR becomes not merely a novel device but a medium that reshapes perception, awareness, and emotional regulation.

4.2. Theme 2. Usability and interaction with the application

Whereas the first theme foregrounds students’ experiential and emotional immersion as VR users, the second theme reflects a clear shift toward a more evaluative stance, in which participants approached the technology as emerging professionals assessing its functionality, usability, and suitability for future clinical contexts. The second theme explores participants’ perceptions of the system’s usability and their interaction with VRelax. It highlights how intuitive design and ease of navigation contributed to a positive first experience while also revealing moments of brief uncertainty as students learned to manipulate the environment. Usability emerged not merely as a technical characteristic but as a psychological enabler of presence and emotional comfort. This theme comprises three subthemes: Intuitive design and accessibility (2.1), which emphasizes the ease of use and clarity of the interface; Learning and adjustment (2.2), which describes participants’ short adaptation process; and Usability and emotional engagement (2.3), which links technical performance to emotional immersion. In this theme, comments on usability and interaction were not merely expressions of personal preference but reflected a forward-looking perspective, in which students implicitly evaluated the application in terms of potential clients, therapeutic settings, and real-world implementation.

4.2.1. Intuitive design and accessibility

Students consistently described VRelax as intuitive, accessible, and user-friendly. The minimal need for instruction allowed them to focus on the experience rather than the mechanics of control. This sense of

simplicity contributed to a smooth first encounter, enhancing confidence and curiosity during use. The participants emphasized how the application’s design enabled them to engage immediately, without the frustration often associated with new technologies.

“It’s very intuitive ... everything feels easy to access.” — P2

“You don’t have to think much; it just works.” — P6

This perceived ease of navigation fostered emotional comfort and reduced cognitive effort, supporting the emergence of presence. For many students, usability itself became a facilitator of psychological engagement, allowing them to experience relaxation without distraction or technical interference.

4.2.2. Learning and adjustment

While usability was generally praised, a few participants described an initial period of adjustment as they learned how to interact with the virtual environment. This involved experimenting with different control methods and understanding how gaze and motion translated into action. The brief learning curve was interpreted not as a barrier but as part of the exploratory experience.

“At first I was moving too slowly with my hand and thought it was lagging, but then I realized using the headset was faster.” — P2

“It took a minute to figure out how to look around properly, but once I got it, it felt natural.” — P3

These reflections highlight a short yet meaningful adaptation process, through which participants transitioned from tentative control to confident exploration. The learning phase appeared to deepen immersion, as mastering the interface contributed to a sense of competence and autonomy within the virtual space.

4.2.3. Usability and emotional engagement

Participants often linked technical smoothness to emotional experience, suggesting that intuitive interaction amplified feelings of comfort and engagement. When the system responded seamlessly, they described being able to “let go” and become absorbed in the environment. In contrast, moments of uncertainty or lag briefly disrupted immersion, emphasizing how closely technological performance and affective experience are intertwined.

“Since it worked well, I could just enjoy it.” — P4

“When it flows, you forget about the headset and just focus on the view.” — P6

Overall, students experienced usability not merely as a functional feature but as an emotional condition that shaped how they related to the virtual environment. Ease of interaction fostered a sense of trust, enabling the transition from observation to genuine engagement.

4.3. Theme 3. Disconnection and reorientation

The third theme addresses the brief but notable experience of detachment from physical reality after immersion. It examines how participants negotiated the boundary between virtual and real spaces, describing both the pleasurable sense of “being elsewhere” and the mild disorientation upon return. This theme illustrates how VR alters bodily awareness and cognitive orientation, revealing the need for mindful re-engagement after virtual exposure. It includes two subthemes: Detachment from the physical world (3.1), which explores the sense of perceptual separation and loss of orientation, and Readjustment and reflective awareness (3.2), which captures the process of regaining equilibrium and integrating the experience afterward.

4.3.1. Detachment from the physical world

A recurrent experience among participants was a brief sense of

detachment from physical reality after removing the headset. Immersion in the virtual environment created a temporary shift in perception, during which participants reported momentarily losing awareness of their immediate surroundings. This detachment was described as intriguing rather than disturbing, though it underscored how fully the technology can engage perceptual and emotional attention.

"You forget about the real world quite quickly ... it took me one or two minutes to readjust." — P3

"When I took it off, it was strange to see the room again, like my body was here but my mind was still there." — P4

These reflections illustrate the cognitive and sensory reorientation required when transitioning between virtual and physical contexts. The participants' accounts highlight how VR can alter bodily awareness, temporarily suspending everyday orientation and deepening the perception of "being elsewhere."

4.3.2. Readjustment and reflective awareness

Most participants described the readjustment phase as short and natural, yet it prompted reflection on the boundaries between illusion and reality. For a few, the depth of immersion raised concerns about excessive disconnection if used for prolonged periods. This recognition revealed an intuitive ethical and psychological awareness regarding the need for balance between engagement and detachment.

"If the wrong person uses it too long, it could become more negative than positive." — P5

"It's powerful, it takes you out of everything, so it's good to have time to come back slowly." — P3

These remarks underscore that the act of "coming back" from VR is not purely physical but also psychological, a moment of cognitive recalibration and emotional grounding. The oscillation between immersion and reorientation demonstrates the transformative potential of VR: it can momentarily shift consciousness while simultaneously inviting users to reflect on their embodied presence in the real world.

4.4. Psychological and therapeutic potential

At this stage of the analysis, participants' reflections move decisively beyond personal experience, illustrating how the VR session activated a professional mode of reasoning in which students considered clinical relevance, preventive applications, and therapeutic integration. The fourth theme focuses on participants' interpretations of VR as a potential psychological and therapeutic tool. It captures their reflections on the medium's ability to foster relaxation, reduce stress, and promote emotional regulation. Students moved beyond personal experience to envision clinical and preventive applications, revealing an emerging awareness of VR's relevance to mental health and psychological self-care. This theme is organized into three subthemes: Stress reduction and emotional regulation (4.1), which discusses VR's perceived capacity for relaxation; Preventive and restorative use (4.2), which presents participants' ideas about VR as a recovery tool; and Therapeutic imagination and professional insight (4.3), which highlights how the experience stimulated reflections on clinical applicability.

4.4.1. Stress reduction and emotional regulation

Participants spontaneously connected their VR experience to potential applications within psychology and mental health. The immersive and calming nature of the environment was perceived as conducive to stress reduction and emotional regulation. Students highlighted the possibility of using VR as a self-care or therapeutic tool in both clinical and educational settings, particularly to manage anxiety or mental overload.

"In a quiet space, this could become a routine way to relax." — P4

"For people who live with high stress, these scenes could help them find calm." — P1

These reflections indicate that participants experienced the virtual environment not only as a technological novelty but also as a psychologically meaningful space. The ability of VR to induce relaxation and detachment from external demands was interpreted as having restorative and preventive potential. This aligns with the notion of VR as a medium that can simulate safe, soothing experiences capable of modulating emotional states.

4.4.2. Preventive and restorative use

Students envisioned VR use as beneficial in both preventive and restorative contexts. For example, they suggested that short sessions could serve as micro-breaks after periods of cognitive or emotional intensity, such as exams or clinical training. The idea of VR as a structured pause, a moment to recalibrate attention and mood, was recurrent throughout the discussion.

"It helps you disconnect mentally after a long day." — P6

"Even ten minutes in there makes you feel like you've taken a break." — P4

This conceptualization of VR as a recovery tool reflects an emerging awareness of its salutogenic potential. Participants viewed it not as a replacement for therapy, but as an accessible supplement that could promote everyday well-being and mental hygiene, particularly in stressful or high-demand environments like university studies.

4.4.3. Therapeutic imagination and professional insight

Beyond their own experiences, students imagined broader therapeutic applications for diverse populations. They discussed the possible benefits for individuals with phobias, limited mobility, or chronic stress, and considered how VR could be integrated into psychological interventions. This speculative thinking demonstrated a shift from personal experience to professional reflection.

"I can imagine this helping people who can't access therapy easily." — P5

"It could work for patients who need to calm down or learn to control anxiety." — P2

These insights suggest that even a brief exposure to VR can stimulate professional imagination and awareness of technology's therapeutic potential. The participants' comments reveal an early form of applied reasoning, bridging personal affective experience with the conceptual frameworks of psychological care. In this sense, the VR session functioned as both an emotional and pedagogical event, promoting reflection on the intersection between technology, well-being, and clinical practice.

4.5. Bodily and sensory awareness

The fifth theme centers on the embodied dimension of the VR experience. It explores how participants became aware of subtle bodily and sensory reactions, such as shifts in balance, temperature illusions, and muscular adjustments, while immersed in the virtual environment. Their reflections underscore the integration of perception, movement, and emotion, highlighting the physical basis of presence and self-awareness in VR. This theme contains three subthemes: Physical sensations and balance (5.1), which examines students' reports of altered equilibrium; Sensory vividness and illusion (5.2), which describes the multisensory realism of the virtual environment; and Embodiment as part of learning (5.3), which interprets bodily reactions as sources of psychological insight.

4.5.1. Physical sensations and balance

Participants frequently reported bodily sensations and subtle shifts in

balance while immersed in the virtual environment. The embodied dimension of VR became evident through descriptions of altered spatial orientation, muscle tension, and vestibular reactions. Some participants noted feeling momentarily unstable, while others described a sense of lightness or motion that did not correspond to physical movement.

"I felt my body tilt ... like I almost lost balance." — P6

"It was strange. I knew I was sitting, but my body reacted as if I was standing on the edge." — P3

These reports illustrate the phenomenon of embodied simulation, in which sensory cues from the virtual scene activate physical and postural responses. Rather than perceiving these sensations as unpleasant, students tended to interpret them as evidence of the realism and intensity of the experience. The body thus became an active medium through which immersion and emotional resonance were established.

4.5.2. Sensory vividness and illusion

Participants emphasized the multisensory richness of the environment, highlighting how visual and auditory realism enhanced emotional engagement. The fidelity of light, sound, and texture often evoked sensory illusions, such as feeling changes in temperature or movement, even though the physical surroundings remained constant.

"When I was at the beach, I felt coolness, even though it was warm in the room." — P2

"The sound of the water and the colors made it feel fresh, almost like being outdoors." — P1

These accounts demonstrate how sensory immersion in VR can transcend the visual domain, creating an integrated perceptual experience that extends to imagined bodily sensations. Such multisensory involvement reinforced the sense of presence, contributing to both the emotional and physical dimensions of relaxation.

4.5.3. Embodiment as part of learning

For several students, the awareness of bodily responses became a source of curiosity and reflection. They noticed how their bodies "reacted as if it were real," prompting thoughts about the connection between perception, emotion, and physical regulation. This awareness fostered a deeper understanding of the embodied nature of psychological experience and its relevance for clinical applications.

"It's interesting to feel how your body reacts as if it's real." — P2

"You realize how much your body participates in what your mind is seeing." — P5

These reflections underscore that embodiment is not merely a byproduct of VR immersion but a central component of how meaning and emotion are constructed within the virtual experience. By recognizing their own physiological engagement, students began to conceptualize the role of the body as both a target and a mediator of psychological processes, bridging experiential awareness with professional insight.

4.6. Expectations versus reality

Prior to the session, most participants expected VR to be a highly interactive and action-oriented experience, often shaped by media representations and prior assumptions about virtual environments. In contrast, the actual experience was perceived as more contemplative and passive, emphasizing stillness, observation, and sensory presence rather than active control or task performance. While some initially interpreted this limited interactivity as a reduction in immersion, many later described the experience as unexpectedly calming and emotionally engaging. Importantly, the technology was not experienced as technically demanding; rather, its simplicity and lack of complex interaction

reduced cognitive load and supported relaxation. This discrepancy between expectation and reality prompted a recalibration of how participants understood immersion, shifting from action-based engagement toward affective and perceptual presence.

This theme contrasts students' prior expectations of VR with their lived experience during the session and is organized into three sub-themes. Preconceptions of interactivity (6.1) captures participants' initial assumptions about VR as an action-oriented medium; Visual realism and surprise (6.2) highlights reactions to the high graphical fidelity and the gradual reduction of novelty; and Redefining relaxation through stillness (6.3) illustrates how participants came to value calm observation and sensory presence as central to the experience.

4.6.1. Preconceptions of interactivity

Before the session, most participants anticipated that VR would be highly interactive or game-like. Their expectations were shaped by media portrayals or prior assumptions about digital technologies emphasizing control and movement. When faced with a more contemplative and observational experience in VR_{Relax}, students expressed surprise and reconsidered what "immersion" meant in this context.

"I thought it would be more limitless ... but once I understood it was just for watching, it made sense." — P6

"I expected to move around and do things, not just sit, but it was relaxing in another way." — P3

These statements reveal how preconceived notions about interactivity can influence engagement and satisfaction. The initial mismatch between expectation and design prompted participants to shift from an action-oriented mindset to one centered on observation and stillness. This cognitive reframing demonstrates how VR can challenge habitual modes of interaction by inviting users into a slower, more reflective form of presence.

4.6.2. Visual realism and surprise

Despite the limited interactivity, participants consistently expressed surprise at the visual quality and realism of the virtual environments. Several reported that the natural scenes exceeded their expectations, creating a stronger sense of presence than anticipated. However, a few also pointed out that repeated exposure to the same limited selection of scenes reduced the sense of novelty over time.

"I imagined it would be more pixelated, but seeing it so real made me feel I was actually there." — P1

"It was much clearer and more detailed than I expected, the waves and the sky looked alive." — P4

"After a few times, it's the same cows again ... you start to know the scene too well." — P5

This balance between sensory realism and content repetition revealed how the sustainability of engagement depends not only on technological quality but also on variation and renewal of content. The humorous remark about "the cows" captured a subtle shift from fascination to familiarity, illustrating how immersive environments may require periodic updates to preserve their emotional and therapeutic impact.

4.6.3. Redefining relaxation through stillness

As students reconciled their expectations with the actual experience, they began to value the contemplative qualities of VR. The process of "just watching" and "being there" was gradually recognized as central to the therapeutic and psychological potential of the medium. Participants described learning to appreciate stillness as an active, restorative state rather than a lack of stimulation.

"It's not about doing something, it's about just being there." — P2

"I realized that you can feel calm even when nothing is happening." — P4

This redefinition of relaxation marks an important cognitive and emotional transition. By contrasting their initial assumptions with the lived experience of passive immersion, students engaged in a subtle form of metacognitive reflection, learning about their own responses to calmness, presence, and sensory engagement. The theme thus illustrates how VR can function as a pedagogical as well as therapeutic space, enabling users to explore alternative modes of self-regulation.

4.7. Potential Users and Cultural Context

The final theme broadens the discussion by situating participants' experiences within social and cultural frameworks. It examines how students identified potential beneficiaries of VR-based relaxation and reflected on how cultural norms influence perceptions of stress and well-being. Their insights position VR as a flexible, socially adaptable medium that can be tailored to diverse users and contexts. This theme includes three subthemes: Identifying potential beneficiaries (7.1), which highlights suggestions for clinical and accessibility use; Cultural nuances in stress management (7.2), which discusses how stress relief is socially co-regulated in Chilean contexts; and VR as a socially adaptable tool (7.3), which envisions future developments integrating social presence and culturally relevant content.

4.7.1. Identifying potential beneficiaries

When reflecting on the broader relevance of VR relaxation, participants discussed who might benefit most from this kind of experience. They commonly mentioned individuals with limited mobility, high stress, or restricted access to nature. Such reflections extended beyond personal impressions, suggesting an emerging awareness of social and clinical applications.

"It could help people without access to nature ... like those in cities or even in prison." — P6

"It could be good for older adults or bedridden people who can't go outside." — P2

These perspectives indicate that participants viewed VR not only as a personal relaxation tool but also as a potential intervention for marginalized or physically constrained populations. Their reasoning reflected a developing professional sensitivity to issues of accessibility, equity, and environmental deprivation in mental health contexts.

4.7.2. Cultural nuances in stress management

Participants also acknowledged that the experience of relaxation and stress management is culturally mediated. Some noted that in their Chilean context, stress relief is often sought through social connection, humor, and collective activities. They reflected that solitary VR experiences, while effective, might not fully align with these social traditions.

"In Chile, we usually deal with stress together. Maybe here VR should have a social component." — P5

"Relaxation for us often means sharing time with others, not just being alone." — P1

These reflections underscore that the perceived effectiveness of VR is partly shaped by cultural expectations about how well-being is achieved. Students emphasized that for VR to reach its full potential in diverse settings, it may need to incorporate elements of social interaction or collective participation.

4.7.3. VR as a socially adaptable tool

Finally, participants envisioned how VR could be adapted to different social and cultural contexts. They proposed possibilities for shared sessions, guided interactions, or culturally meaningful environments that could make the experience more inclusive and emotionally

resonant. Their comments revealed an appreciation of technology's flexibility and the importance of contextual sensitivity in its implementation.

"It would be great if two people could be in the same scene, maybe talking or relaxing together." — P2

"If the content included familiar places or cultural elements, it would feel more personal." — P6

Through these reflections, students articulated a view of VR as a socially adaptable medium, one that can support well-being while respecting the relational and cultural dimensions of stress regulation. Their insights demonstrate an awareness that the success of digital interventions depends not only on design and usability but also on the capacity to align technology with the lived realities and values of its users.

Taken together, the themes demonstrate how participants continuously shifted between experiencing VR as users and reflecting on it as emerging professionals, suggesting that the dual role was not a separate analytic category but an inherent feature of how students made sense of the technology throughout the session.

5. Discussion

The findings of this study provide a nuanced understanding of how final-year psychology students experienced their first encounter with virtual reality (VR) as both a technological and emotional event. Their narratives reveal a dynamic trajectory, from initial curiosity and fascination to sensory immersion, reflective awareness, and a growing recognition of VR's therapeutic and educational potential. VR was perceived not only as an innovative tool but also as a meaningful experiential space for exploring stress, relaxation, and self-awareness. Across their accounts, students emphasized that the quality of the experience depended on context, usability, and the capacity of the environment to foster presence, connection, and comfort rather than confusion or detachment.

Students' first impressions reflected the strong influence of novelty and the emotional resonance of entering an unfamiliar sensory world. The initial fascination and surprise described by participants correspond to Slater's (2009) concept of presence, the subjective feeling of "being there" in a mediated environment. Immersion elicited both excitement and mild disorientation, illustrating how virtual settings can generate emotional arousal and perceptual adaptation simultaneously. As familiarity increased, curiosity transformed into comfort and enjoyment, suggesting that even brief VR exposures can promote affective regulation and cognitive flexibility. These observations align with Riva et al. (2019), who emphasize that immersive technologies can elicit genuine emotional and cognitive responses similar to those occurring in real-life experiences.

The usability and interface design of VRelax played a decisive role in shaping emotional engagement. Participants' remarks that "it just works" or that the system felt "very intuitive" highlight how usability operates as both a cognitive and affective mediator. When interaction was effortless, users could focus on the experience rather than on the mechanics of control, enabling immersion and calmness to emerge naturally. This finding supports Bailenson's (2018) notion that smooth and predictable interaction fosters a sense of safety and agency, which in turn enhances emotional engagement. The short learning curve observed also parallels the gradual mastery process described in exposure-based therapeutic models (Freeman et al., 2017), reinforcing that feelings of competence within the system are integral to achieving psychological flow.

Participants also reported a transient sense of detachment from physical reality when removing the headset, a moment of perceptual ambiguity that required brief reorientation. This oscillation between immersion and readjustment underscores the ambivalent nature of

presence, wherein deep engagement can temporarily blur the boundary between virtual and real spaces. Such transitions, rather than being problematic, appeared to foster reflection on bodily awareness and perception. As Kelly et al. (2022) demonstrate, transitions between immersion and physical reality can trigger short periods of spatial disorientation and perceptual recalibration, highlighting the embodied and cognitive adjustments that accompany immersive experiences. In this study, participants' awareness of this transition exemplifies how VR can serve as a tool for metacognitive learning, inviting reflection on attention, embodiment, and emotional regulation.

Beyond its sensory novelty, VR was widely recognized as a psychologically meaningful and therapeutically relevant environment. Participants envisioned how such immersive contexts could support relaxation, stress reduction, and even clinical interventions for anxiety or phobias. Their reflections resonate with Antonovsky's (1987) salutogenic framework, which posits that health is strengthened through experiences that promote comprehensibility, manageability, and meaningfulness. The predictable structure and aesthetic coherence of the VR_{Relax} scenes contributed to comprehensibility; intuitive navigation enhanced manageability; and the emotional resonance of the environments fostered meaningfulness. Thus, VR emerged not merely as a relaxation tool but as a medium for cultivating coherence, agency, and self-regulation. The participants' imaginative extension of their experience into potential therapeutic and educational applications reflected a form of professional learning; where personal engagement with technology acted as a catalyst for ethical and clinical reflection. This reflexivity echoes participatory approaches to knowledge co-creation, emphasizing experience and dialogue as foundations for critical awareness (Bradbury-Jones et al., 2014).

The bodily and sensory dimensions of the experience added depth to participants' psychological engagement. Reports of tilting sensations, temperature illusions, and shifts in spatial perception highlight how VR engages the body as an active site of meaning-making. Rather than being passive, the body functioned as an interface through which perception and emotion were intertwined. This finding resonates with Merleau-Ponty's (1962) phenomenology of perception and Riva and Waterworth's (2003) conceptualization of embodied presence. Physical sensations were experienced not as distractions but as integral components of immersion, reinforcing the embodied nature of attention and emotion. Notably, students interpreted these bodily responses as authentic and informative, suggesting that VR can heighten awareness of the mind-body connection and serve as a bridge between sensory and emotional learning.

A key interpretive aspect of the study concerned the contrast between expectation and reality. Prior to the session, many anticipated a more interactive or game-like experience; instead, they encountered a contemplative and passive form of immersion. This unexpected stillness became an opportunity for cognitive reframing, as students came to view immersion not as action but as presence. Such a redefinition parallels mindfulness-based approaches to relaxation (Kabat-Zinn, 2013), where calm arises from focused awareness rather than control. The recognition that relaxation could emerge from "doing nothing" reflected a shift toward mindful self-regulation. At the same time, humorous comments such as "after a few times, it's the same cows again" reveal the tension between predictability and novelty: while consistency fosters safety and relaxation, excessive familiarity can reduce engagement. This insight underscores the need for balance in immersive design, maintaining aesthetic coherence while incorporating content diversity to sustain emotional resonance.

Cultural and contextual factors further influenced how participants interpreted the VR experience. They emphasized that relaxation and immersion depend not only on design quality but also on cultural expectations surrounding well-being. For students from Latin American backgrounds, stress regulation was described as a collective process, "we relax together", suggesting that solitary VR experiences might not fully align with their cultural coping models. This collective orientation can

be further understood through perspectives from cultural psychology, particularly the distinction between independent and interdependent self-construals (Markus & Kitayama, 1991, 2010). From this viewpoint, emotional experience and regulation are not solely intrapersonal processes but are relationally embedded and co-constructed through social interaction. The emphasis on "relaxing together" thus reflects an interdependent mode of stress regulation, in which shared presence and mutual attunement contribute to emotional safety and meaning-making. This observation aligns with Pan and Hamilton's (2018) discussion of social presence and co-regulation in immersive environments. Incorporating shared or interactive VR elements may thus enhance cultural resonance and engagement. Additionally, participants perceived familiar rural scenes (e.g., with cows or farmland) as less novel than exotic environments such as beaches or underwater settings. This contrast illustrates how cultural familiarity modulates immersion, highlighting the importance of context-sensitive design that accounts for users' symbolic and environmental associations.

The dual role of participants as both users and emerging professionals enriched the interpretive process. Experiencing VR through a psychological lens enabled them to critically examine how technology mediates perception, emotion, and self-awareness. Acting as co-investigators fostered reflexivity and ethical sensitivity, consistent with constructivist perspectives that frame knowledge as co-created through dialogue and experience (Bradbury-Jones et al., 2014). Their reflections on contextual variables such as noise, privacy, and comfort underscore the relational and situated nature of VR's effectiveness, dependent on the interaction between technology, environment, and human presence (Freeman et al., 2017).

This exploratory study also presents methodological and contextual considerations. The relatively small and homogeneous sample of psychology students, though conducive to deep reflection, limits generalizability. The short-term, first-time exposure captured immediate reactions but not long-term adaptation or habituation. The absence of physiological data prevents objective triangulation of perceived relaxation effects, and the controlled university environment may not represent real-world settings. Future research should therefore include participants from diverse backgrounds, integrate mixed methods, and assess VR-assisted relaxation in applied contexts such as hospitals, workplaces, and community settings. Cultural adaptation will be essential for implementation in Latin American and other non-Western contexts. As this study shows, perceptions of immersion, novelty, and well-being are culturally embedded; incorporating familiar imagery, linguistic adaptation, and social interactivity may enhance accessibility and engagement. Furthermore, varying exposure duration and content diversity could sustain motivation and emotional impact over time. Combining qualitative and physiological approaches would provide a more holistic understanding of how relaxation manifests across sensory, emotional, and cognitive dimensions.

Taken together, these findings contribute to the growing literature on the psychological, embodied, and cultural dimensions of VR use. They suggest that VR can serve as both an individual and collective medium for promoting emotional regulation, reflection, and professional insight. However, the effectiveness of such interventions depends on the ethical, contextual, and cultural frameworks within which they are implemented. Future research should aim to integrate experiential richness with methodological rigor, ensuring that VR functions not merely as a technological innovation but as a meaningful, context-sensitive contribution to psychological well-being and education.

6. Limitations and future directions

Several limitations should be considered when interpreting the findings of this exploratory study. First, the small and homogeneous sample of final-year psychology students limits the transferability of the results beyond this group. Participants shared comparable educational backgrounds, theoretical frameworks, and familiarity with

psychological concepts, which likely facilitated reflective dialogue and self-analysis. While this homogeneity enriched the depth of discussion, it may also have influenced the interpretive tone of the findings, particularly within Therapeutic Imagination (Theme 4) and Embodiment as Learning (Theme 5), where students' professional orientation shaped their sensitivity to psychological constructs. Future studies should therefore recruit participants from diverse disciplines, professions, and cultural contexts to broaden understanding of how VR is perceived as a relaxation and self-care tool across user populations.

Second, the short-term, first-exposure design provided valuable insight into Curiosity and Immersion (Theme 1) and Usability and Interaction (Theme 2), but did not capture sustained engagement or long-term outcomes. Participants' remarks about familiarity, for example, the humorous reference to "seeing the same cows again", suggest that novelty strongly shapes initial impressions of immersion and enjoyment. Future research should employ longitudinal or repeated-exposure designs to examine how novelty, habituation, and familiarity influence presence, emotional regulation, and continued use. Mixed-method approaches that integrate self-reported experiences with psychophysiological measures (e.g., heart rate variability, skin conductance, EEG) would provide a richer understanding of how subjective relaxation corresponds with objective indicators of calmness.

Third, while the qualitative approach allowed for a nuanced, contextualized exploration of users' experiences, it relied exclusively on self-reported data. As reflected in the subthemes Sensory Vividness and Illusion (Theme 5) and Redefining Relaxation through Stillness (Theme 6), participants articulated subtle affective and sensory states that are difficult to quantify. However, the absence of behavioral or physiological data limits triangulation and prevents empirical validation of perceived relaxation effects. Future studies could combine qualitative interviews with behavioral tracking or biometric data to link emotional self-reports with measurable physiological responses, thereby strengthening the evidence base for VR-assisted well-being interventions.

Fourth, the cultural and contextual dimensions of the experience were shown to be central in shaping user meaning and engagement. The theme Potential Users and Cultural Context revealed that perceptions of relaxation, novelty, and connection are deeply intertwined with cultural norms and collective coping practices. For instance, participants' reflections on Chilean social stress-regulation styles underscore the importance of designing culturally attuned VR environments. What feels relaxing or immersive in one context may evoke different meanings elsewhere. Future research should therefore prioritize cultural adaptation in design, including language, environmental familiarity, and social presence, to ensure inclusivity and contextual relevance.

Finally, the controlled university environment, while methodologically advantageous, does not reflect the complexity of real-world implementation. Factors such as noise, privacy, accessibility, and institutional readiness (noted under Context Matters and Usability themes) may differ markedly across applied settings. Future studies should explore feasibility, usability, and acceptability of VR-based relaxation tools in clinical, occupational, and community contexts across Latin America. Attention to infrastructure, training, and equitable access will be crucial for sustainable and ethical deployment.

In summary, while this study provides valuable insights into the psychological, sensory, and cultural dynamics of first-time VR use, its exploratory nature calls for continued research that bridges subjective experience with empirical evaluation. Expanding participant diversity, integrating multimodal methods, and testing across varied contexts will clarify how VR can be ethically, culturally, and effectively implemented within educational and therapeutic practices.

7. Conclusion

This qualitative exploration contributes to understanding how virtual reality (VR) can function as a bridge between emotional regulation, experiential learning, and reflective practice in psychological education.

Through their first encounters with immersive technology, final-year psychology students revealed the emotional depth and cognitive complexity involved in adapting to a simulated environment. Their accounts demonstrated that VR operates not only as a technological interface but also as a psychological and pedagogical medium, capable of eliciting curiosity, presence, and embodied awareness. In this sense, VR served simultaneously as a mirror and a laboratory for introspection, enabling participants to explore their responses to novelty, calmness, and self-regulation within a controlled yet emotionally evocative setting.

The findings underscore that the effectiveness of VR-based interventions depends as much on relational and contextual dimensions as on technical design. Usability, sensory realism, and perceived safety emerged as essential preconditions for emotional engagement, while novelty and content diversity influenced sustained interest and relaxation. Participants' bodily and sensory reactions highlighted that immersion is an embodied experience, one engaging perception, emotion, and cognition as an integrated process. Recognizing these embodied responses as part of psychological learning opens new opportunities for educational and therapeutic innovation, where VR can foster emotional awareness, self-regulation, and reflective capacity among students and practitioners. Beyond its pedagogical utility, the study positions VR as a salutogenic medium, a space that supports well-being through experiences of comprehensibility, manageability, and meaningfulness (Antonovsky, 1987). The calming, structured, and aesthetically coherent environments provided by VRelax allowed participants to experience a sense of psychological coherence that reflects the foundations of resilience and emotional balance.

At the same time, the findings reveal that such experiences are culturally and contextually mediated. What feels relaxing or immersive is shaped by environmental familiarity, aesthetic preference, and collective norms of stress management. In Latin American contexts, where stress regulation is often social and relational, incorporating shared or culturally familiar elements into VR environments could enhance emotional resonance and accessibility. The humorous reference to "the same cows again" illustrates the dual need for familiarity and novelty in maintaining engagement, a reminder that immersion is sustained not only by realism but by meaningful variation and cultural relevance.

At a broader level, this study demonstrates how engagement with immersive technologies can stimulate professional imagination and ethical reflection among emerging psychologists. Experiencing VR both as participants and as future practitioners encouraged students to think critically about how technology mediates perception, emotion, and therapeutic interaction. This reflexive stance reinforces the value of participatory and co-constructive approaches to innovation in psychological education, approaches that integrate emotional experience, critical analysis, and ethical awareness. Such integration highlights the transformative potential of VR not only as a tool for relaxation and self-care but also as a catalyst for developing reflective competence and professional sensitivity in future clinicians and educators.

Finally, this exploration underscores the need for contextual, methodological, and cultural sensitivity in implementing VR for emotional well-being. Future developments should consider local conceptualizations of stress, institutional conditions, and infrastructural constraints to ensure that VR applications are not only technologically robust but also culturally resonant and ethically grounded. Longitudinal and mixed-method research could further clarify how familiarity, embodiment, and social connectedness influence the sustained psychological impact of VR use. By combining experiential richness with methodological rigor, future studies can help establish VR as a meaningful, inclusive, and sustainable resource for promoting well-being, reflection, and learning across diverse educational and clinical settings.

CRedit authorship contribution statement

Fernando Renee González Moraga: Writing – review & editing,

Writing – original draft, Supervision, Methodology, Formal analysis, Data curation, Conceptualization. **René Gallardo Vergara:** Writing – review & editing, Methodology, Investigation, Conceptualization. **Carola Paz Alveal Suazo:** Writing – review & editing, Project administration, Methodology, Investigation, Conceptualization.

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Portions of the manuscript were translated from Spanish to English using ChatGPT. The tool was used exclusively for language translation and minor linguistic editing; all conceptual content, structure, and interpretations were written and verified by the authors.

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Declaration of competing interest

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

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Data availability

Data cannot be shared openly but is available on request from authors. If the authors would like to request data from this study, they should contact FGM.

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