Co-construction of a Canadian virtual reality technology to manage pain and anxiety in palliative care units in the province of Quebec

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Purpose Studies have demonstrated the usability, feasibility, and acceptability of virtual reality in palliative care (Martin et al., 2022). Virtual reality has proven efficacy with positive effects in the reduction of pain, tiredness, drowsiness, shortness of breath, depression, and improvement in psychological well-being (Mo et al., 2023; Moloney et al., 2023). This consultation process aims to conduct the first iteration of a virtual reality technology to be tested in palliative care. The intervention called “Come with me" uses high-quality 360-degree (5K) video content and ambisonic sound developed by a Canadian start-up in Montreal, Quebec (Nipper Media). **Method** The virtual reality intervention “Come with me" consists of a ten-minute session in which participants use a virtual reality headset to visit a pre-established passive scenario (e.g., beach, city, see Figure 1). A steering committee formed by healthcare professionals working in palliative care, volunteers of a palliative care foundation, graduate students in psychology, and researchers tested the virtual reality technology “Come with me" (n = 12). Following the test, participants expressed their opinions regarding different aspects of its potential use in the context of palliative care (e.g., duration, content, appropriateness for palliative care). **Results and Discussion** Most participants expressed having experienced feelings of relaxation (66.7%) or well-being (33.3%) after having tested this virtual reality technology, indicating a positive perception following the experience. However, two people reported dizziness during a visual transition (16.7%). The volume was judged as adequate (91.7%), and the quality of the sound was judged as excellent (25%), good (50%), or acceptable (25%). Most participants found the duration of the experience to be adequate for palliative care (90.9%). Participants also considered the equipment comfortable (58.3%) or acceptable (25%) for individuals in palliative care. Even though the majority of participants expressed that music (72.7%) or narrative descriptions (63.6%) were adequate, a few reported a preference for less music and narration during the intervention according to the individual needs of the person in palliative care (18.2%). They also recommended favoring both the exploration of public places and nature (83.3%), with 54.5% expressing the desire to visit places in the province of Quebec, Canada, and 45.5% wishing to visit places abroad. In addition, they highlight the importance of being able to adapt the intervention to the needs of the person in palliative care. When asked about the best way to deliver VR content in palliative care, the steering committee’s advice was mixed: a) 66.7% were in favor of individual VR sessions for people in palliative care, b) 83.3% thought that the VR sessions should target dyads (one person in palliative care and their significant other), c) 8.3% expressed that the VR sessions should be delivered to two or more significant others, and d) 8.3% of the participants believed that two or more people in palliative care should receive the VR sessions simultaneously. These results will guide the necessary adjustments to optimize this virtual reality technology to the specific needs of this population. The technical team will provide special attention to transitions to avoid cybersickness. Additional consultation sessions will be conducted to adjust and refine the current prototype using an iterative process of cross-validation and co-construction.

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a) Goggles Pico 4K Resolution

b) iPad controller with simplified navigation

Figure 1. Turnkey “Come with Me™” kit