**Abstract** *(in English – Times New Roman 12 - max. one page)* Deadline for receipt: March 31, 2024

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| Title: Utility of the virtual reality in the implantation of a Porth a cathAuthor(s): -Celia Novials de la Flor, Civil Hospital Marie Curie -Philippe Dony, Civil Hospital Marie Curie - Annick Moreau, Civil Hospital Marie Curie -Max Bisdorff, Civil Hospital Marie Curie -Jaime Franco Guembe, Erasme Hospital-Jenny Badas, Erasme HospitalHospital/Institute: Civil Hospital Marie Curie [Chau. de Bruxelles 140, 6042 Charleroi](https://www.google.com/maps/place/data%3D%214m2%213m1%211s0x47c22f55104c9a6f%3A0x505c7b4b19d5e319?sa=X&ved=2ahUKEwim_8alhb-EAxXb7AIHHSLMDooQ4kB6BAgYEAA) |
| **Objective:** The objective is to evaluate the efficacy of a virtual reality program to reduce anxiety and pain compared to standard care in our center during a Port-a-Cath implantation procedure.**Background:**The administration of certain treatments, requires safe and easy vascular access via catheters. This is why the use of port-a-cath has become standard practice in healthcare, enabling long-term venous access with a low risk of infection.Placement of a subcutaneous port-a-cath is painful, and is performed in the operating room, under local anaesthetic, sedation or general anaesthetic. Hospital environments can be anxiety-provoking, and the anticipation can induce significant stress in patients who are already worried about their disease.Virtual reality (VR) immersion has been shown to modify pain perception in healthy subjects experimentally exposed to different nociceptive stimuli. Numerous studies have confirmed this analgesic effect of VR(1)VR is a fairly common active distraction technique, affecting the visual and auditory senses, enabling immersion in a virtual world using a VR headset. It appears to be a non-pharmacological adjuvant analgesic treatment for pain and anxiety. (2)(3)**Methods:** The protocol of this interventional, prospective, randomized controlled study is being conducted at the Marie Curie Hospital, Charleroi, Belgium, started on 10/31/2023 and is planned to last until April 2024. It was approved by the ethics committee of Charleroi and Erasme on 10/31/2023 with reference number P2023/318 / CCBB406202023000184.Population: All patients scheduled with indication for Port-à-Cath implantation in the Marie Curie Civil Hospital were included. All patients were seen by an anaesthesiologist and after obtaining consent were randomized into two groups by simple randomization.Inclusion criteria: 1. Patients older than 18 years old. 2.Patients with indication for Port-à-Cath. 3. Patients with written consent.Exclusion criteria: 1. No understanding of the French language. 2Visual or hearing impairment 3. Patients with skin lesions/affections on the face 4. Psychiatric disorders 5. Severe neurocognitive disorders 6. Patients with brain cancer or brain metastases 7. Epilepsy under treatmentProtocol: In the operating room, we set up standard monitoring.Patients assigned to the Intervention group receive a 20-minute virtual reality program through a headset and helmet connected to a Lenovo Android tablet, while listening to a narration designed to induce relaxation. If the program is not completed within 20 minutes, the viewing may be extended.If the patient expresses discomfort or wishes to discontinue digital sedation, the usual protocol was initiated.The control group immediately received the usual sedation protocol: administration of 1mg intravenous bolus midazolam, adjusted in increments of 0.5mg/5min up to a maximum of 3.5mg.Local anesthesia with 2% lidocaine was performed in both groups.Assessment of objectives:Stress and anxiety levels were measured using the STAI scale before surgery andafter surgery.Pain was assessed using a visual analog scale (VAS) before and after surgery.Satisfaction was assessed using the Net Promoter Score.Statistical Analysis:We predict a decrease in mean STAI score of 10% in the VR group, for a common standard deviation of about 6, for a risk α = 5%, and a power of 80%, we need to include 35 persons per group. For a more comfortable sample, about 40 per group are needed, 80 patients.Analysis of variables, the mann whitney wilcoxon to compare the medians of quantitative variables. Fisher's exact tests to comparate categorical data. P ≤ 0.05 will be considered statistically significant.**Results:**After analyzing 70 of the 80 patients to be included in our study, we have obtained the following provisional results:With regard to midazolam consumption, there was a significant decrease in the milligrams of midazolam administered in the RV group versus the control group. A median decrease of over 50% in midazolam administered (0.3 mg for the VR group versus 1.66 for the control group).With regard to our main objective, no difference was observed between the two groups in terms of patient satisfaction. A mean STAI postop status of 30 in the RV group versus 33 in the control group and the mean STAI postop STAI score was 34.6 in the RV group versus 38.8 in the control group. No differences were also found in the assessment of pain and immediate and 10-day satisfaction.**Conclusions:** In conclusion, our results could indicate that virtual reality may be an alternative to current sedation protocols, offering the same results. could contribute to a decrease in anxiety during Porth a Cath implantation,Reducing the need for sedation, maintaining patient satisfaction with the quality of care.**References:**1. Virtual Reality for Pain Relief in the Emergency Room (VIPER) – a prospective, interventional feasibility study T. Birrenbach\*, F. Bühlmann, A. K. Exadaktylos, W. E. Hautz, M. Müller† and T. C. Sauter. University Hospital of Bern. BMC Emergency Medicine https://doi.org/10.1186/s12873-022-00671-z, June
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