Evaluating the Feasibility and Acceptability of the Use of Virtual Reality in Pain Management in Hospitalised Patients - Preliminary Analysis.

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Introduction:

Acute and chronic pain is a common healthcare problem locally and globally, leading to many inpatient admissions for poorly controlled pain. In our current practice, both acute and chronic non-cancer pain have mostly been managed using pharmacological agents. The opioid epidemic with issues of dependence, misuse and overdose is especially concerning. Therefore, there is a pertinent clinical need to find sustainable non- pharmacological adjuncts in the complex management of pain.

Virtual Reality (VR) involves the use of technology to create a three-dimensional multisensory artificial environment replacing real-world sensory inputs.

The applications of VR in pain management of patients in a hospital setting show much promise [8]. However, there is currently no study done in our local population. We believe that VR can be used as an adjunctive tool to improve pain management and patient satisfaction as well as relief anxiety.

Methods:

Goal: To assess the patient acceptability and tolerability of VR in pain management in hospitalised patients, clinical efficacy in reducing pain scores and anxiety scores.

- This is an open-label, single-center, single-arm pilot study.
- Patient's VR exposure time is ranged from 5 to 15 minutes.
- Followed by post-intervention pain and anxiety scores and system usability scale questionnaires.

Demographics:

This is a preliminary analysis of 26 patients' data who were recruited for the study. The baseline demographics are summarised in table 1.

Table 1. Baseline characteristics of 26 patients.

Characteristic	No. of patients (%) or mean ± SD or median (IQR)	No. of patients with missing data (%)
Age in years, n (%)		0 (0.0)
Median (IQR)	46 (29-62)	
21-34	8 (30.8)	
35-44	4 (15.4)	
45-54	6 (23.1)	
55-64	5 (19.2)	
≥65	3 (11.5)	
Gender, n (%)		0 (0.0)
Male	12 (46.2)	
Female	14 (53.9)	
Race, n (%)		0 (0.0)
Chinese	7 (26.9)	
Malay	16 (61.5)	
Indian	3 (11.5)	
Highest level of education, n (%)		2 (7.7)
No formal education or Primary	2 (8.3)	
PSLE	2 (8.3)	
Secondary	3 (12.5)	
'O'/'N' level or NTC 3 certificate	5 (20.8)	
Polytechnic diploma	6 (25.0)	
University & above	6 (25.0)	
Pain score at baseline		0 (0.0)
Mean ±. SD	6.77 ± 1.86	
Median (IQR)	7 (6-8)	
Virtual Analogue Scale for Anxiety (VAS-A) score at baseline		
Mean ±. SD	5.04 ± 2.81	0 (0.0)
Median (IQR)	6 (3-7)	

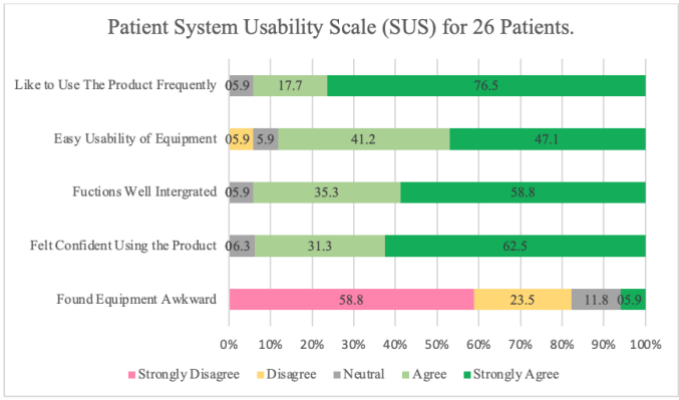
Results:

Patient's mean experience satisfaction score was 8.08.
Experience satisfaction were scored were ranged from 0 to 10 (0 = Extremely Dissatisfied to 10 = Extremely satisfied). 50% (n=13) of the patients found the global impression of change were much improved while 7.7% (n=2) found no change. No patient reported worsening of patient global impression change.

Results (Continued):

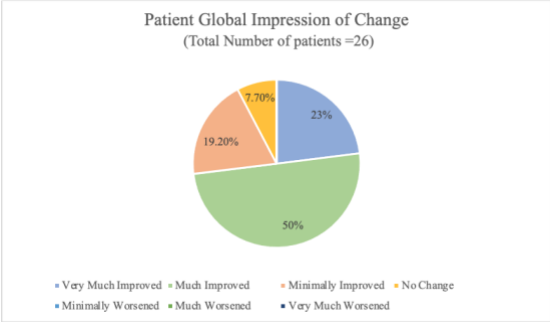
Majority of the patients (61.5%, n=16) would like to use the VR again and found the functions were well integrated. 57.6% (n=15) of patients found the VR set was easy to use.

Chart 1. System Usability Scale (SUS) for 26 patients.



80.8% (n=21) of patients had between a 2 to 8 point reduction in pain score, 19.2% (n=5) of patients had no change in pain score, and no patients had an increase in pain score. 76.9% (n=20) of patients had between a 2 to 9 point reduction in VAS-A score, 11.5% (n=3) of patients had no change in VAS-A score, and 11.5% (n=3) of patients had between a 1 and 6 point increase in VAS-A score.

Chart 2. Breakdown of Patient Global Impression of Change. (Number of patients shown in percentage).



Conclusion :

Based on the preliminary data of our study, the VR results show that it is well accepted and tolerated by hospitalised patients in the management of pain. The secondary outcomes of patient's pain scores and anxiety levels shows promising results with majority of patients exhibiting improvement of pain and anxiety scores.

References:

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