

Virtual-Reality based Mindful Practice to Reduce Stress among Psychiatric Patients

Wan T(1), Chan TN(1), Ip CK(2), Wong CL(3), Lui SF(1), Shun KW(1), Wu YK(1), Cheng HY(3)

(1) Department of Psychiatry, Pamela Youde Nethersole Eastern Hospital,

(2) Department of Psychiatry, Tai Po Hospital,

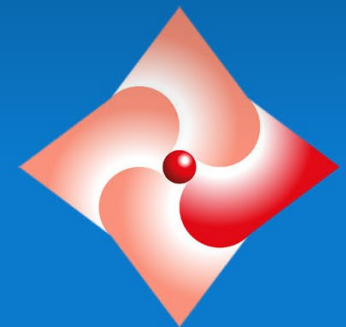
(3) The Nethersole School of Nursing, The Chinese University of Hong Kong

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Background

Psychological stress and violence

- Acute psychiatric crises often culminate in heightened psychological stress

(Bone et al., 2019)

- Stress is augmented risk of violent incidents within psychiatric wards

(Caruso et al., 2021)

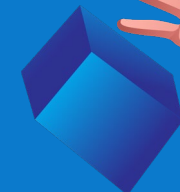
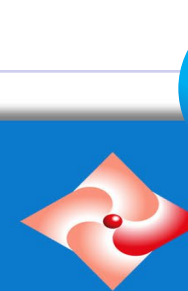
Stress management

- Traditional mindful practice can reduce stress ($g=0.41$, $p=0.025$) depression (SMD = 0.41; CI: 0.19, 0.64, $p < .001$)

(Blanck et al., 2018; Sanada et al., 2016)

- But psychiatric patients face cognitive challenges of difficulties with attention, memory, and imagination to hinder their ability to focus

(Barnocit et al., 2020)



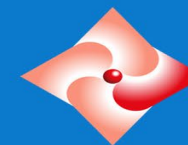
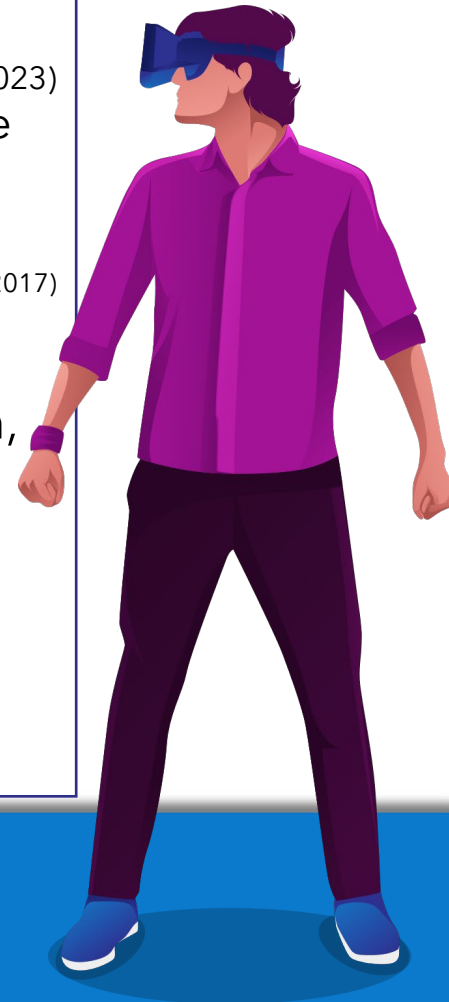
Service Gap

Limitations of traditional mindful practice

- **Engagement:**
 - Requires self-guided concentration and high conscious effort from patients
- **Consistency**
 - Quality varies across instructors and sessions
- **Accessibility**
 - Manpower-intensive, fixed schedules and physical presence of trainers

VR mindful practice bridges gaps

- **Enhanced focus & immersion**
 - SR demonstrated that VR mindful practice notably enhanced mood and reduced anxiety
(Ma et al., 2023)
 - VR scenes with gentle audio guidance help patients focus, stay present, and reduce distractions, enhancing calmness and relaxation
(Navarro-Haro et al., 2017)
- **Standardized, high-quality content**
 - Eliminates variability in instruction, and this ensures consistency in training quality
- **On-demand, scalable sessions**
 - No geographic or scheduling constraints



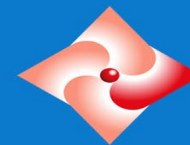
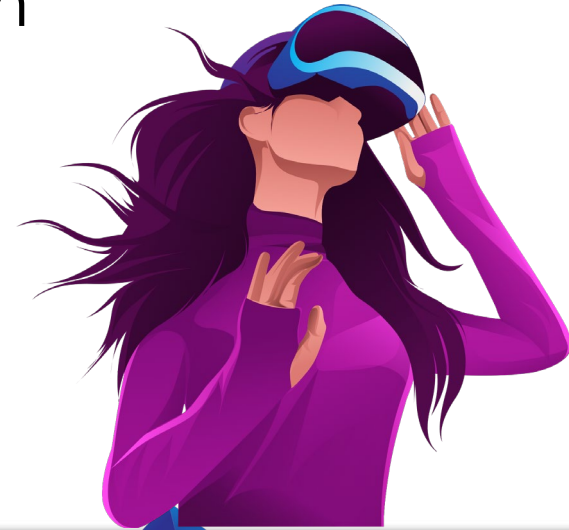
Aims



To examine the **acceptability** and **feasibility** of VR-based mindful practice



To provide preliminary effects on **stress levels** compared to the participants receiving audio-guided mindful practice



Methodology

Study design

- Pre and post-test study

Study setting and sampling method

- PYNEH and TPH inpatient wards
- Convenience sampling from psychiatric inpatient wards

Sample size

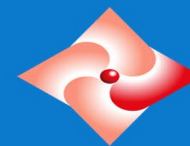
- 20 participants

Inclusion criteria

- Psychiatric inpatients aged 18-64 years old
- Stress level was assessed by visual analogue scale (VAS)

Exclusion criteria

- History of physical illness that precludes participation in VR activities



Methodology

Outcome

Measurements

Acceptability

Satisfaction rate by Client Satisfaction Questionnaire-8 (CSQ-8) at T1

- acceptable internal consistency of $\alpha = 0.93$
- widely used across mental health services to evaluate client satisfaction

(Attkisson & Greenfield, 2004)

Feasibility

15-30 minutes face-to-face semi-structured individual qualitative interview at T1

- participants' opinions on technical, content, and operational facilitators, as well as barriers, and suggestions

Stress level

10-point VAS

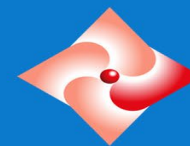
- 0=no stress, 10=extremely stressful
- 10 cm straight line with 0 = no stress, and 10 = extremely stressful on stress level

(Lesage et al., 2012)



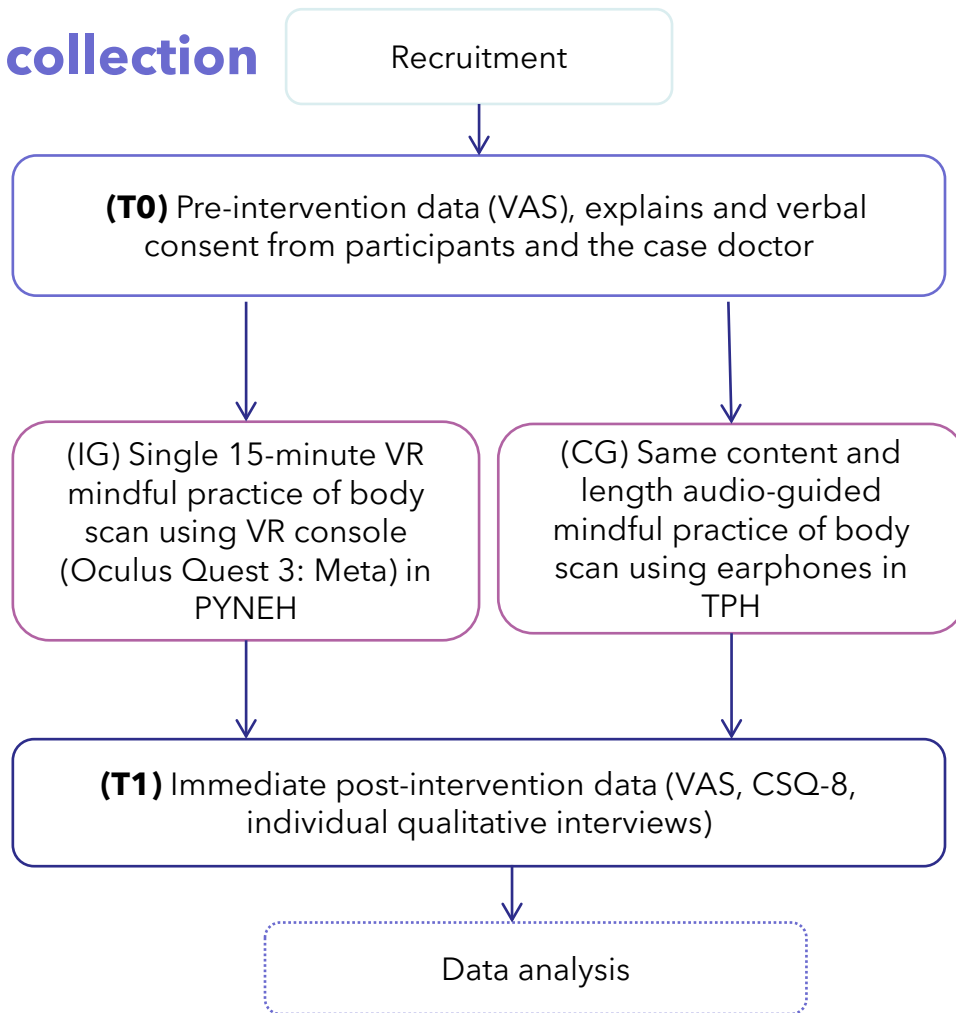
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Methodology

Data collection



Data analysis

Within-group mean difference

- Wilcoxon signed-rank test

Between-group mean difference

- Mann-Whitney U test

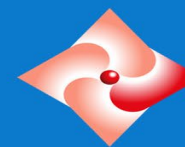
Qualitative data

- Content analysis

(Graneheim & Lundman, 2004)



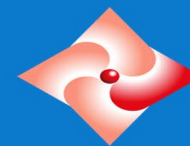
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Intervention



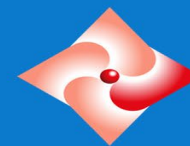
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Results

- 24 eligible patients were recruited and assigned to the intervention (14 patients) and the control group (10 patients)
- 91.6% were female

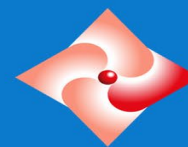
Item		Results
Acceptability	Satisfaction rate	<ul style="list-style-type: none">✓ 27.5/32✓ all recommending VR mindful practice to others
Feasibility	Participants' experience	<ul style="list-style-type: none">✓ facilitator (facilitating detachment from reality, minimal external distractions, beautiful landscape, and cute character as facilitators to participate and adhere)✓ no barriers✓ suggestions (adding nature sounds, expanding background options, and incorporating stretching exercises)
Stress level	10-point VAS	<ul style="list-style-type: none">✓ significant within-group difference (IG: $Z=-3.02$, $p=0.003$; CG: $Z=-2.24$, $p=0.025$)✓ significant between-group difference (IG: significantly greater VAS score reduction $Z=-2.74$, $p=0.005$, two-tailed)



Significance

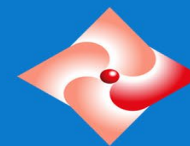
VR-based mindful practice harnesses digital advancements to enhance care for psychiatric inpatients and aid those experiencing psychological distress.

It is feasible in clinical settings and well-accepted by psychiatric patients.



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