



S.U.C.C.E.S.S. Multi-Level Care Society proudly presents:

What is Immersive VR Therapy?

A new concept for LTC providers

Presented by: **Fiona Yuen, BSc Kin. BCTRA, Recreation Therapist**

Learning Objectives

- 1) To learn what immersive VR therapy is and its various applications in LTC
- 2) How immersive VR therapy can benefit seniors to increase quality of life
- 3) To review case study to see the effects of immersive VR therapy in dementia seniors

Introduction to Immersive VR Therapy

- Uses a mixed reality system (virtual and augmented) that merges virtual reality with the real world
- Enhance human-computer interaction by providing users with immersive and interactive experiences
- Enables users to engage in a variety of interactive experiences in imaginative worlds without the need to create physical environments



How does it work?

The FLEXI is a 3D Interactive Immersive Experience technology system with high quality interactable digital canvas (cubicle) and portable projection console to transform any space to provide cognitive and sensory enrichment

Library system includes specific imagery, videos and games that are highly customizable to language and cultural appropriation



Is it beneficial?

- How do we reduce burden on caregivers' daily routines?
- How can it improve cognitive function, social connections, well-being and activity engagement?
- Will it reduce symptoms like **aggression, wandering, exit-seeking, restlessness**, and **agitation**?

The Need for Immersive VR

- Increase need due to dementia related behavioral symptoms, especially during sundowning
- Use alternative therapies that provided a person-centered approach to help settle behaviors
- Explore immersive technology without barriers, culturally appropriate and adaptable for older adults

A picture (or video) is worth a thousand words...



Case Study Outline

- 6 selected participants residing in Special Care Unit (SCU) that had underlying dementia related behaviors
- Established baseline and resident profile goals and objectives
- Care team used DOS (Dementia Observation system) to chart behaviors during a 3-month trial
- Activity staff charted changes in mood immediately before and after therapy

Sample of Participant Case Study Profile

SUCCESS Multi-Level Care Society IMMERSIVE THERAPY CASE STUDY PROFILE



Resident Name: Mrs. T
Room: R1

Resident's behaviour and need for Flexi Mixed Reality system:

- Agitation, restlessness

Goals:

- 1) To decrease episodes of agitation
- 2) To decrease episodes of restlessness

Resident interests include:

- Enjoys watching videos of Vietnam, personalized video from family at dim sum, playing virtual games

Therapeutic Objectives

- Reduce aggression and agitation through calming virtual environment
- Minimize wandering and exit-seeking by providing a stimulating, safe virtual space to explore
- Reduce restlessness by engaging residents in activities that promote mental and emotional relaxation



Data and Results (DOS)

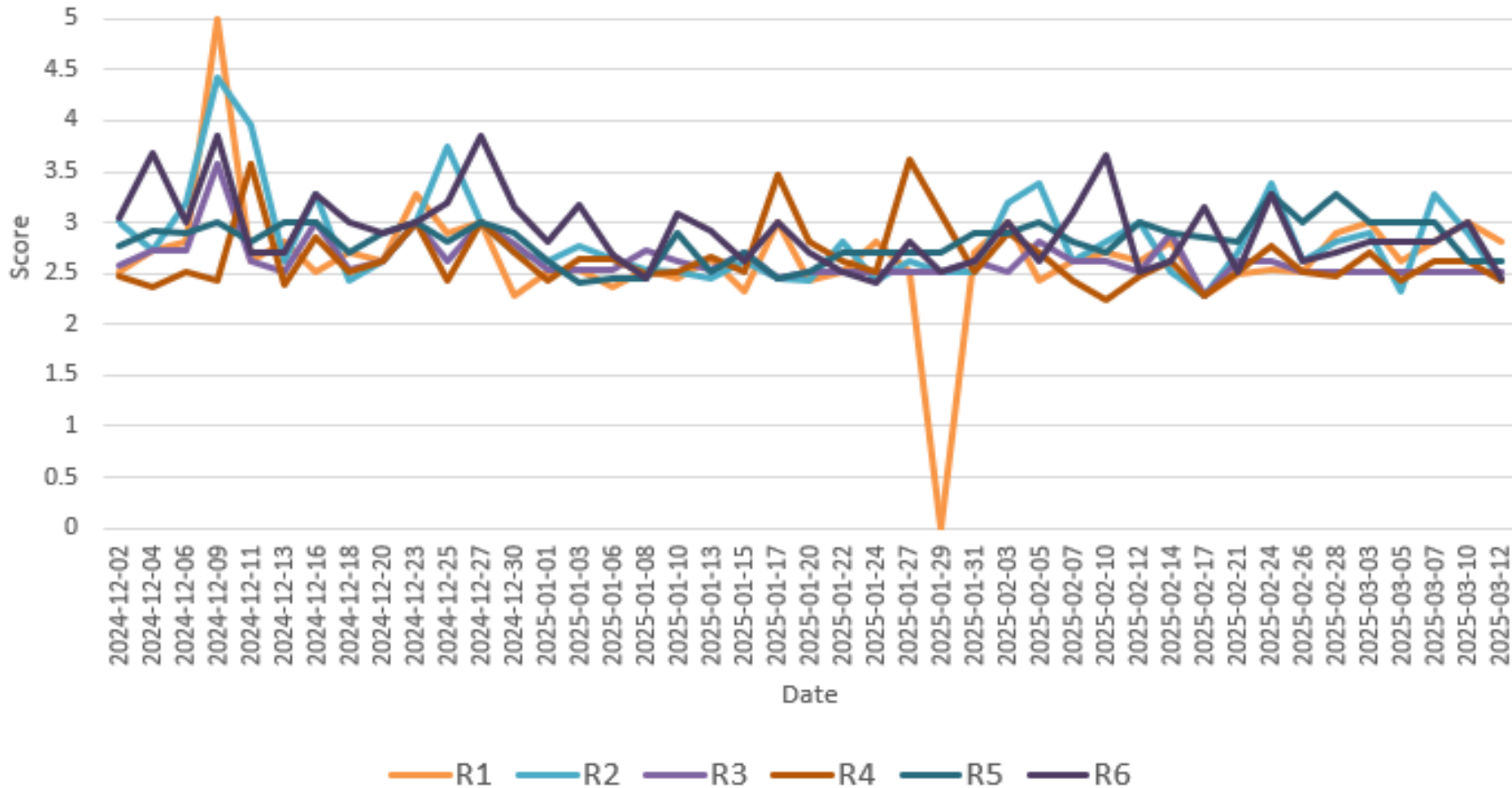


Diagram 1. Comparison of daily dementia related behaviors levels of individual case

*Data from DOS = Dementia Observational System by care team

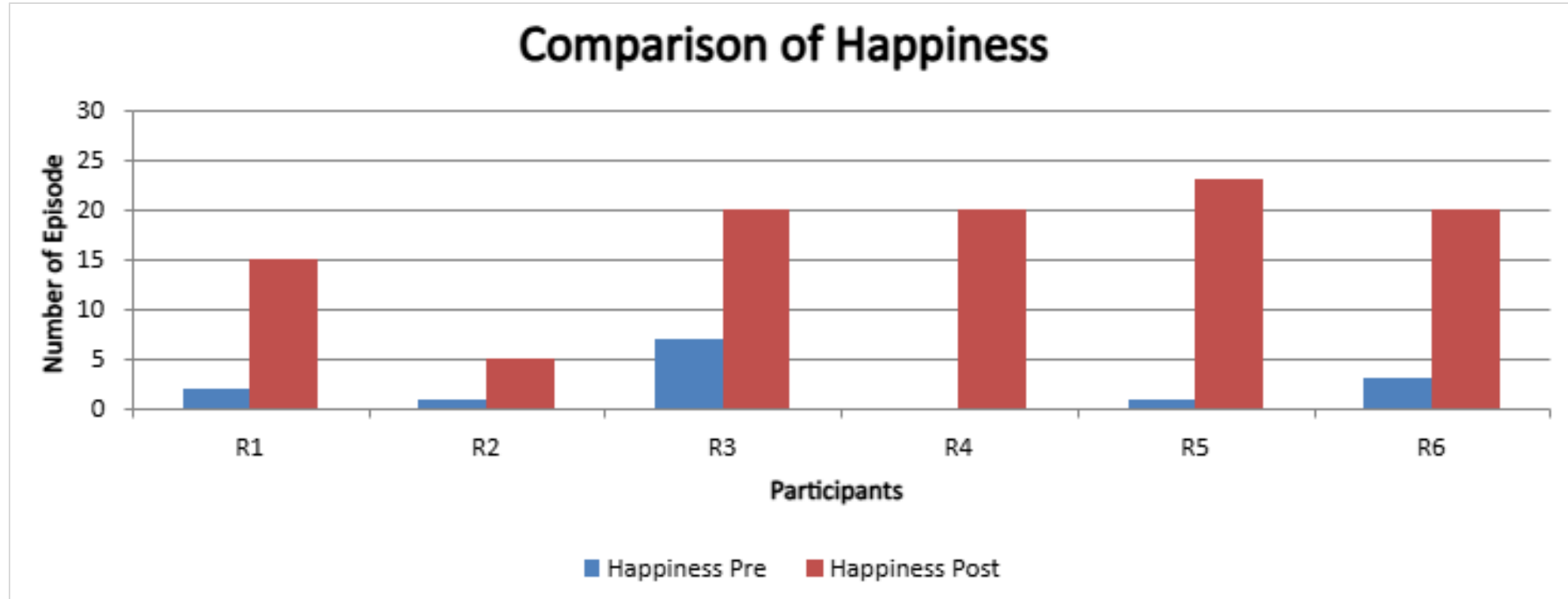
CODE LEVEL DEFINITIONS:

- Level 0 = no data collected ie. on social leave
- Level 1 = Sleeping in bed
- Level 2 = Sleeping in chair
- Level 3 = Awake and calm
- Level 4 = Noisy
- Level 5 = Restlessness
- Level 6 = Exit seeking
- Level 7 = Aggression (verbal)
- Level 8 = Aggression (physical)
- Level 9 = Other, defined by staff including crying, emotional meltdown
- Level 10 = Other, defined by staff including seeking to go home, looking for family

Immersive Therapy Charting Sheet (Emotional States)

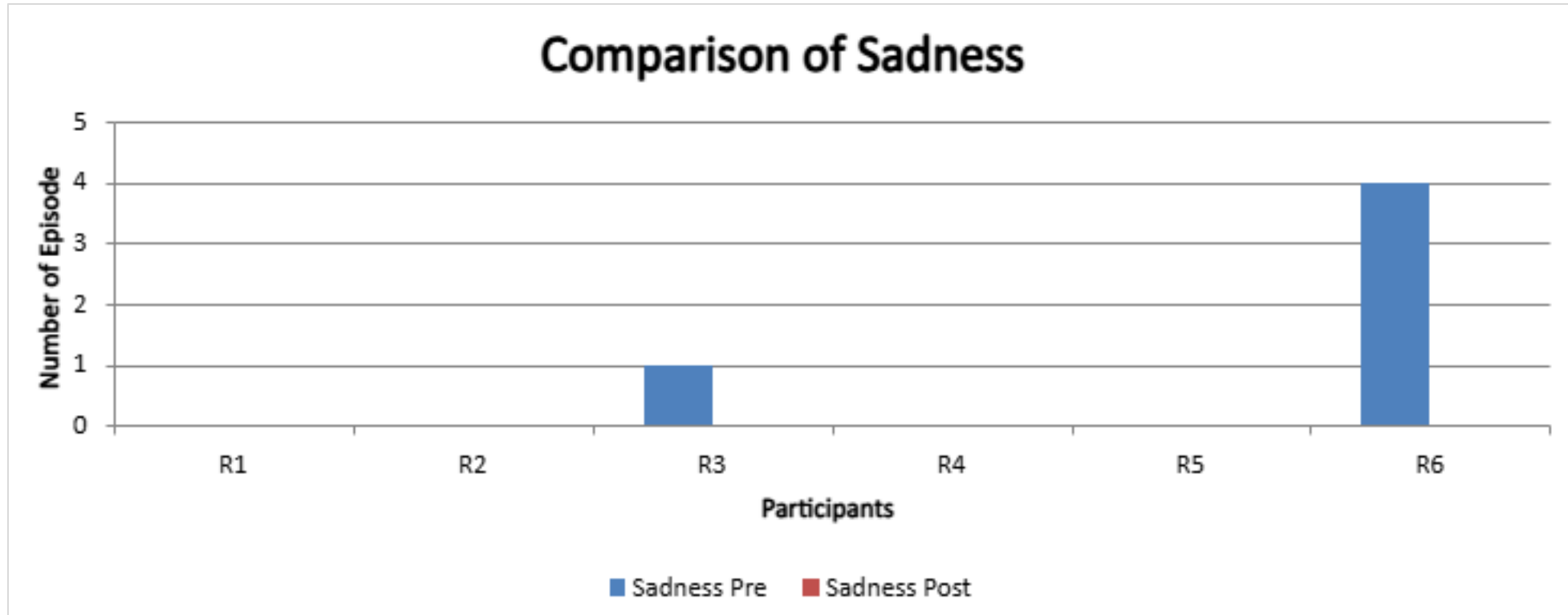
SUCCESS MULTI-LEVEL CARE SOCIETY																		
Immersive Therapy Charting Sheet																		
Name :										Room:								
				Before therapy					After Flexi					Program used				
Staff	Date	Time	Happy	Relaxed	Sad/ Depressed	Anxious	Restlessness	Aggressive	Happy	Relaxed	Sad/ Depressed	Anxious	Restlessness	Aggressive	Game	Sensory image	Video	Music
Comment:																		
Staff	Date	Time	Happy	Relaxed	Sad/ Depressed	Anxious	Restlessness	Aggressive	Happy	Relaxed	Sad/ Depressed	Anxious	Restlessness	Aggressive	Game	Sensory image	Video	Music
Comment:																		
Staff	Date	Time	Happy	Relaxed	Sad/ Depressed	Anxious	Restlessness	Aggressive	Happy	Relaxed	Sad/ Depressed	Anxious	Restlessness	Aggressive	Game	Sensory image	Video	Music
Comment:																		
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Comment:																		

Emotional State Findings



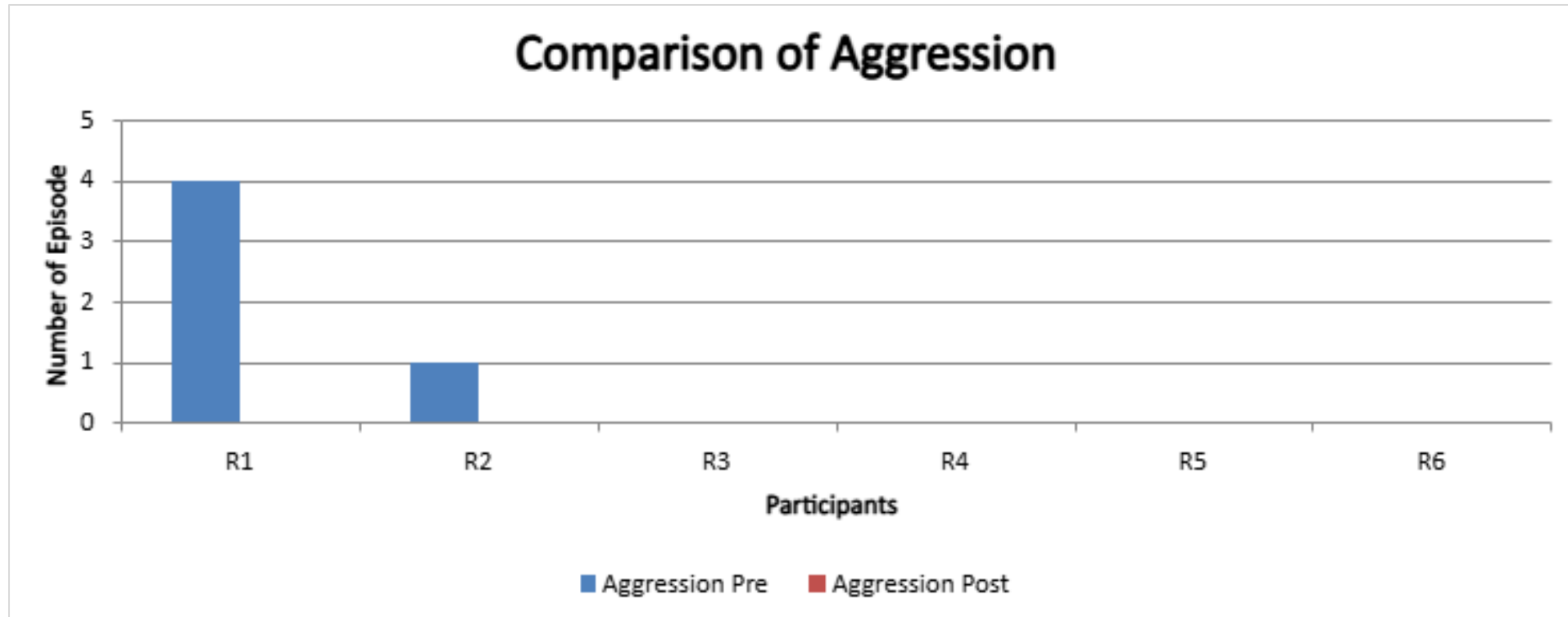
100% (6/6) participants were happier and perceived moreover positive emotions after receiving immersive therapy

Emotional State Findings



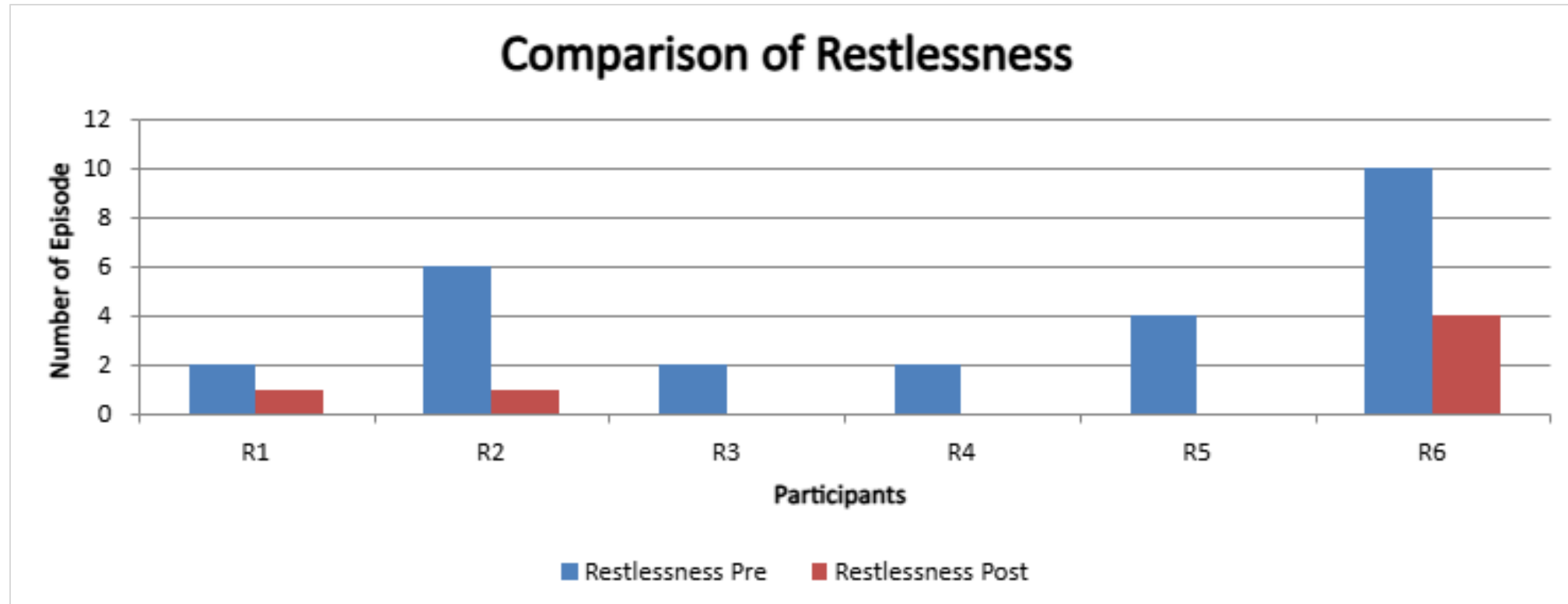
33% (2/6) participants displayed signs of sadness prior to therapy session and was no longer present post therapy

Emotional State Findings



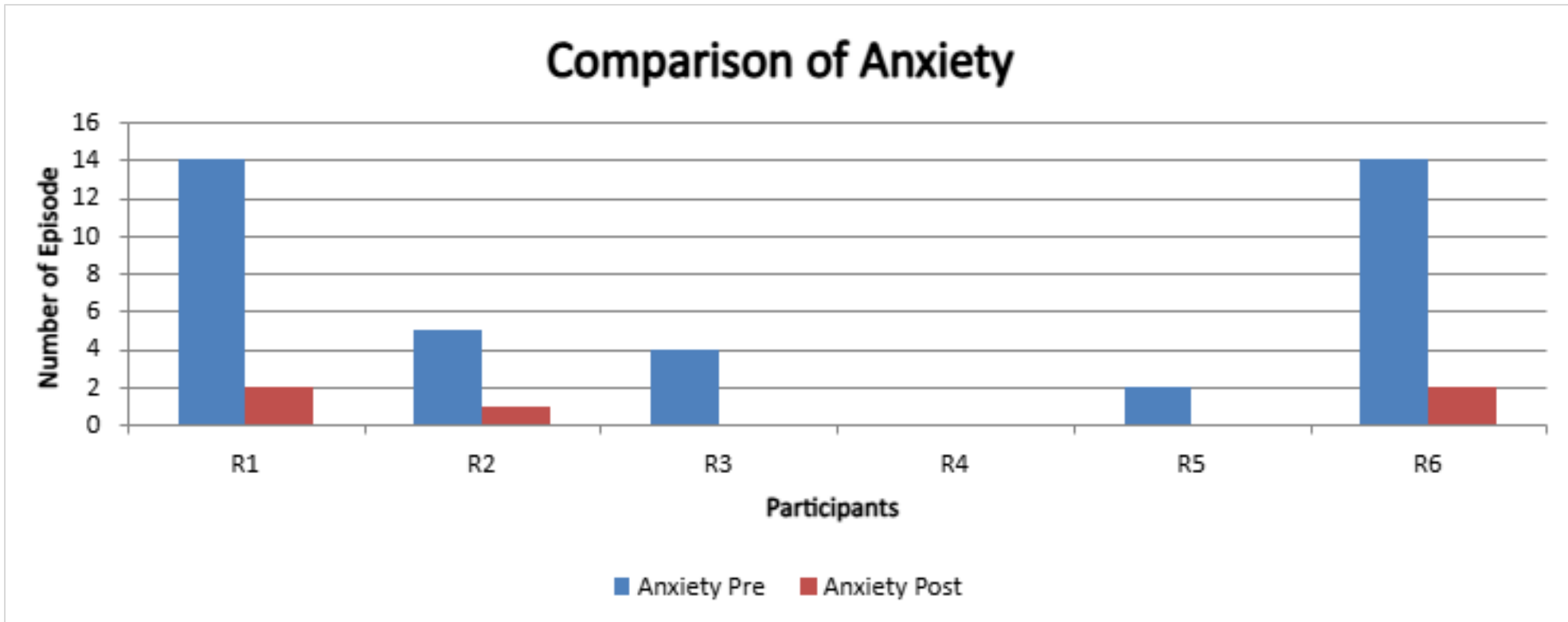
33% (2/6) participants that displayed pre-aggression symptoms exhibited no aggression post therapy session

Emotional State Findings



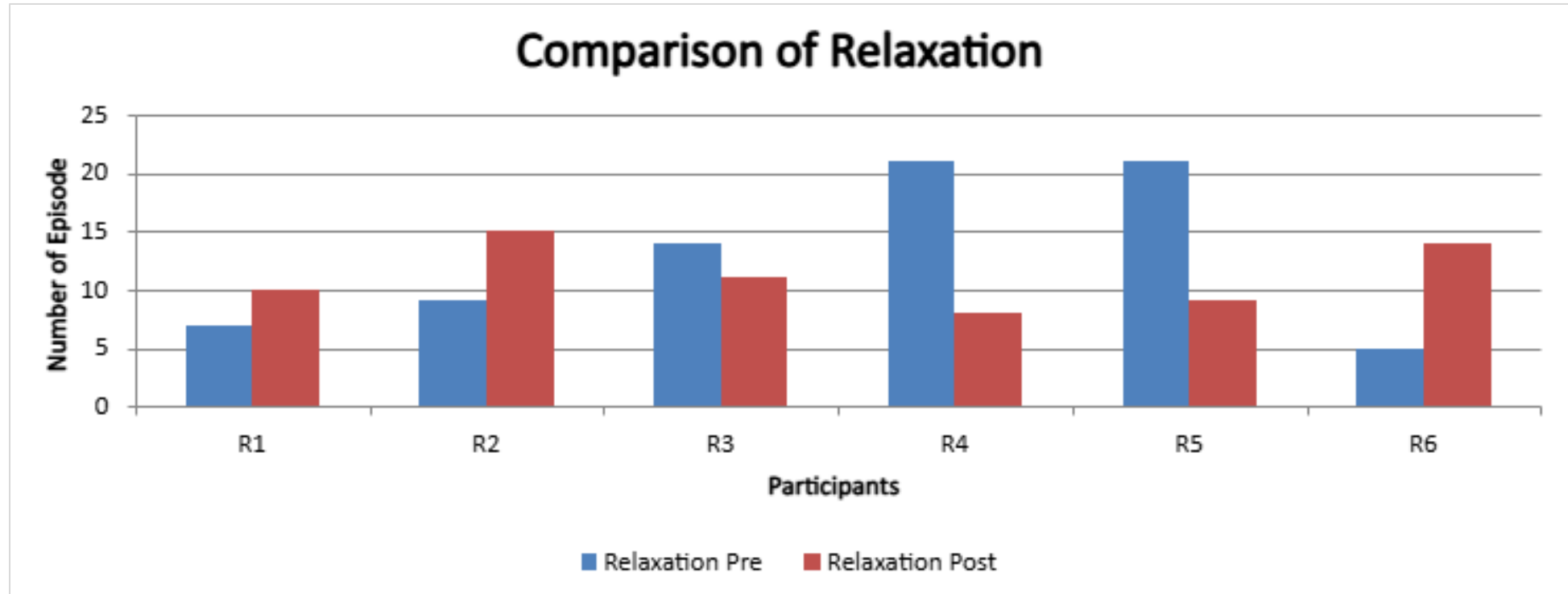
100% (6/6) participants exhibited restlessness prior to therapy session, and all showed improved levels post therapy session

Emotional State Findings



83% (5/6) participants had improved levels of anxiety

Emotional State Findings



50% (3/6) participants displayed lowered relaxation levels post therapy indicating that they were possibly over stimulated from the content such as being excited and elated

Participant Example #1:

R1 was always worried about her children and not knowing their whereabouts, thus always exit seeking to go home. She was afraid to leave because she didn't know where to go thus, increasing her anxiety. After immersive therapy with being in an underwater environment where she was able to see her favorite fish and sea animals, she responded that she can wait until the morning to go home. She became relaxed and even told staff she felt happier after the session.

Participant Example #2

R5 has depression and is often unmotivated to join in programs. After watching personalized videos of her son and old neighborhood in HK, she was willing to join in follow up sessions. Her mood became happier and she also joined another participant by watching grocery shopping together and was responsive to the video content and willing to socialize with fellow resident and staff during the session.



Pros	Cons
<ul style="list-style-type: none"> • Non-invasive and non pharmacological 	<ul style="list-style-type: none"> • Over stimulation
<ul style="list-style-type: none"> • Personalization and Adaptive (Culturally appropriate) 	<ul style="list-style-type: none"> • Cost and maintenance
<ul style="list-style-type: none"> • Cognitive, physical and emotional Engagement 	<ul style="list-style-type: none"> • Space allocation
<ul style="list-style-type: none"> • Early detection of behavioral symptoms and prevention strategies 	<ul style="list-style-type: none"> • Long term benefits yet to be established
<ul style="list-style-type: none"> • Established video library 	<ul style="list-style-type: none"> • Learning curve for front line staff
<ul style="list-style-type: none"> • Flexible, easy set up 	



Dim sum with family is just a click away...

Conclusion and Future Recommendations

- Immersive VR therapy has significant potential in managing dementia related behaviors
- Technology takes on a person-centered approach and provides a non-pharmacological and adaptive solution for improving quality of life for seniors, staff and family members
- Further research studies needed to explore broader adoption of immersive tools in aging services as well as funding resources to help LTC optimize integration into everyday therapeutic practices (IDEA – Innovation in Dementia and Aging Lab)

Thank you for your participation!

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