Graduate School of Science and Technology Master's Thesis Abstract

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Abstract

This study investigates the potential of virtual reality (VR)-based animal-assisted therapy (AAT) to reduce short-term stress. A between-subjects experiment was conducted with 31 participants randomly assigned to one of three conditions: (1) viewing a static natural environment (Scenery Only Group, SOG), (2) observing a non-player character interact with a virtual golden retriever (NPC Interaction Group, NIG), or (3) directly interacting with the virtual dog (User Interaction Group, UIG).

Participants underwent a baseline period, a stress-inducing arithmetic task, and a post-intervention relaxation phase. Emotional states were assessed using the State-Trait Anxiety Inventory (STAI), a single-item "How are you feeling now?" scale, and the Positive and Negative Affect Schedule (PANAS). Additional instruments included the Simulator Sickness Questionnaire (SSQ), Pet Attitude Scale (PAS), Big Five Personality Inventory, and VR usage frequency. Although ECG data were collected via a Shimmer sensor, technical issues precluded physiological analysis.

Statistical analyses revealed no significant group differences in STAI reduction; however, descriptive trends indicated that the UIG group experienced the most substantial decrease in anxiety, followed by NIG and SOG. These results, while not statistically significant, suggest the potential benefits of interactive VR-based AAT for emotional recovery.

This study contributes to growing evidence that immersive, embodied interaction with virtual animals may elicit meaningful affective responses and highlights directions for future research involving physiological validation and adaptive VR therapy systems.