participant may be associated with a low capacity to handle emotions during new experiences, causing a higher stress response.

P135: Electroencephalography-Based Neuro-emotional Responses during interactive scenario therapy in the person with dementia – case study

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Background: Immersive technologies have the potential to control cognitive and behavioural symptoms in people with dementia. A safe environment can be designed through a specific interactive scenario, according to the preferences and experiences of each user.

Objective: Mapping neuro-emotional responses during the interactive scenario therapy experience in a case study, with dementia, using electroencephalography (EEG).

Methods: A participant, 78 years old and diagnosed with moderate to severe Alzheimer's disease (female; Mini Mental State Examination score of 17 points; frontal assessment battery score of 8 points), underwent EEG analysis (EMOTIV EPOC X) using a protocol with interactive scenarios tailored to the participant's needs and preferences, the scenarios were designed from reminiscence strategies. The protocol included a stimulus that alternated between motor and cognitive activities (3 minutes), and breath-centered relaxation (1 minute). The scenarios used in this study were: setting up a living room; composing a cake recipe; shopping in the market to make a cake; looking for objects in the park; organizing a birthday party. These variables are provided, on a scale of 0 to 100, after processing by the algorithms of the EmotivPRO v3.0 software.

Results: The values found in the EEG analysis will be described without stimulus and with stimulus respectively. Thus, engagement (68.57 to 71.86); arousal (57.86 to 49.86), focus (61.57 to 57.00), interest (54.86 to 49.57), relaxation (33.86 to 30.86), and stress (53.71 to 43.00). The EEG data showed an increase in engagement when the patient was stimulated (68.57 to 71.86). Relaxation also increased (30.86 to 33.86) when the stimulus was removed. The stress level, as analysed by the EEG, was also higher in the period without stimulus and reduced in the period with the stimulus (53.71 to 43).

Conclusion: During a stimulus period in interactive therapy, there was an increase in engagement, which was related to an increasing focus during the stimulus. Lower values were observed compared to the period without stimulus, indicating a period of recovery after a period of concentration/arousal. Therefore, therapy with an interactive and familiar scenario, using a circuit of stimulus-breathing exercises, promotes a positive and adequate neuro-emotional response in a person with dementia.

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