

Exploring how people with Parkinson's watch dance with and without facial expressions

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Introduction

- Dance is increasingly used to promote physical activity and well-being in people with Parkinson's.
- Neural activity during observation and motor execution are similar in nature (Caspers et al., 2010; Rizzolatti & Sinigaglia, 2010).
- Therefore, watching dance could help to improve physical movement and social interaction in people with Parkinson's (Bek et al., 2020a; Palermo et al., 2020). However, little is known about watching dance in Parkinson's.
- ❖ **AIM 1: To understand how people with Parkinson's observe expressive dance.**
- Parkinson's can also affect emotion processing and recognition (Rajmohan, & Mohandas, 2007; Assogna et al., 2008).
- Faces attract more attention in comparison to other body parts in perception (Breedon & Hanrahan, 2017) and convey emotions in dance.
- ❖ **AIM 2: To explore the effects of facial expression during the observation of dance.**

Experimental Design

Participants

- 13 people with mild to moderate Parkinson's
- 9 Healthy Controls
- Ages were between 50 and 80 years (Average 65)

Materials and Methods

- 8 short (25-30 seconds) Indian dance clips, With (expressive) and 8 without (non-expressive) facial expressions.
- Each was shown twice (32 trials).
- An eye tracker was used to record eye movements as participants watched the clips.
- After each dance clip participants rated how much they felt: enjoyment, energy, relaxation, excitement, and "feeling" of the movement.



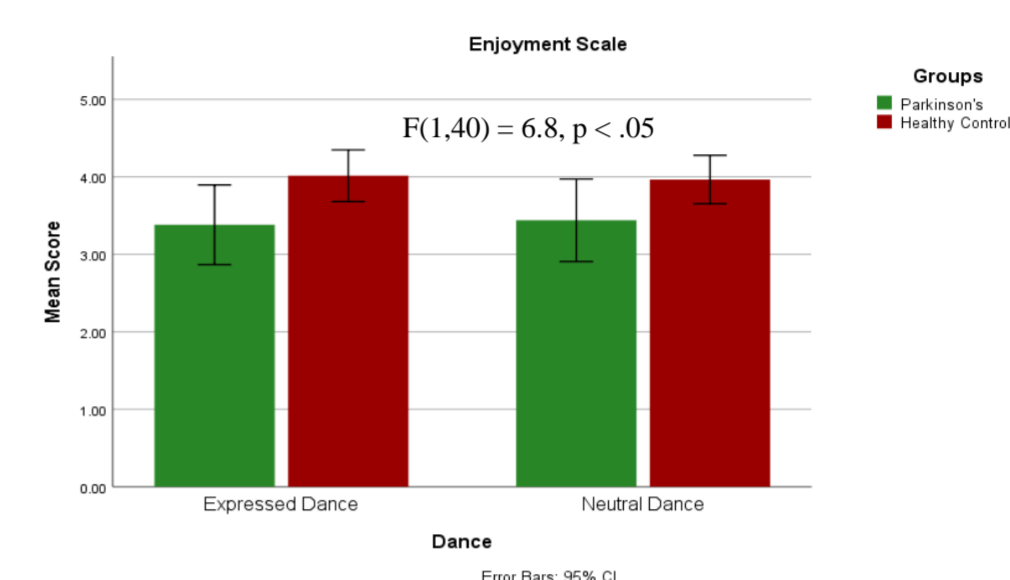
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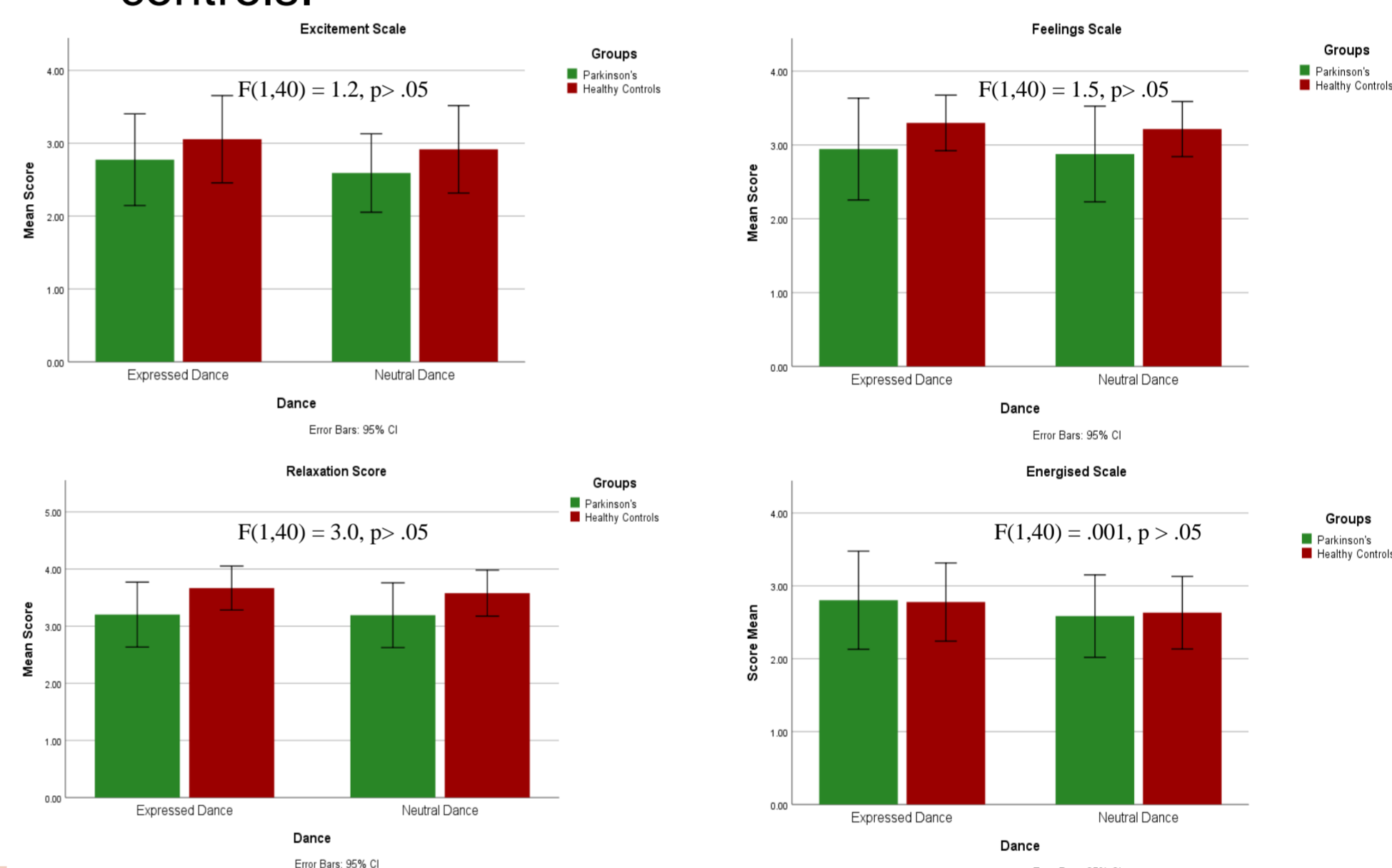
Results

Ratings

- People with Parkinson's reported significantly ($p < 0.05$) less enjoyment compared to healthy controls in both dance conditions (expressive and non-expressive).

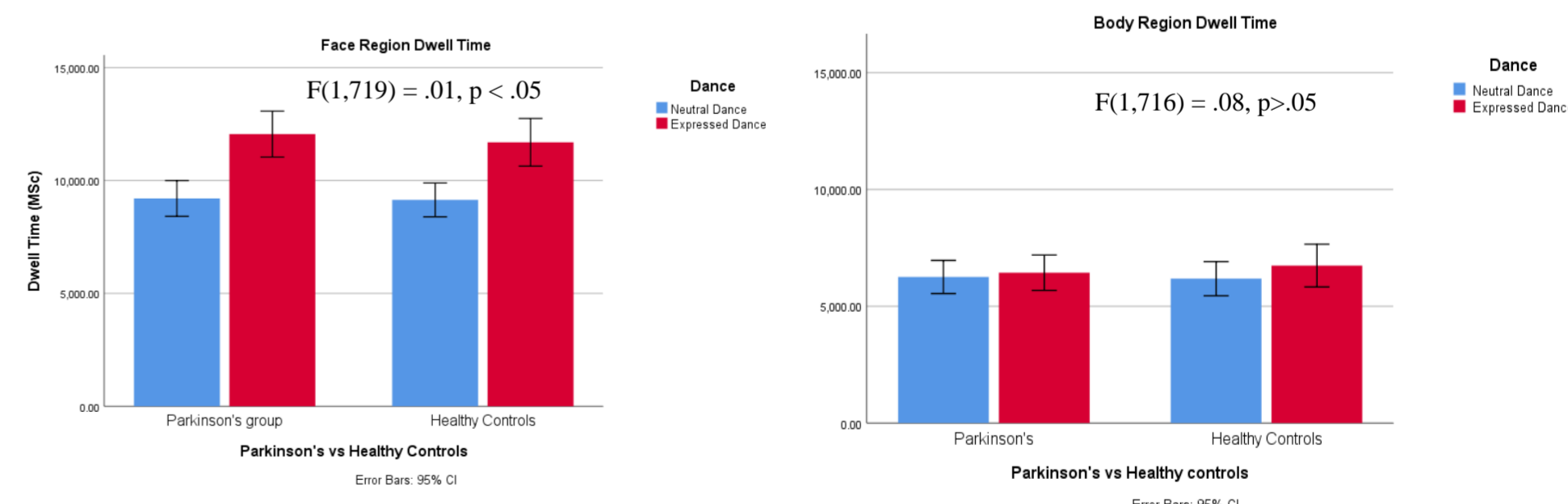


- There was a non-significant ($p > 0.05$) trend for lower ratings of excitement, relaxation and embodiment than controls.



Eye Data

- Both people with Parkinson's and controls looked significantly more at the face during Expressive dance compared to Neutral dance ($p < 0.05$).
- There was no significant difference ($p > 0.05$) between groups or dance conditions for time spent on the body region.



Conclusions

- This is preliminary evidence that people with Parkinson's watch dance and are drawn to facial expressions similarly to healthy controls. However, people with Parkinson's may have reduced enjoyment of watching dance.
- The findings suggest that observation of dance in Parkinson's should be explored further and could be used as an adjunct to physical dance training.