The role of REM and neuroticism in the napping effect on emotional facial perception

Introduction

- Neuroticism has long been recognized as a strong risk factor for depression.
- While altered emotional perceptions of facial stimuli in people with higher levels of neuroticism have been proposed as one of the mechanisms, it remains unclear whether neuroticism alters only positive or negative facial stimuli or both.
- Recent experimental studies showed that napping stabilizes or lowers the emotional reactivity to negative emotional facial stimuli.
- Specifically, rapid eye movement (REM) sleep has been found to be associated with such a beneficial effect of sleep on emotional processing.
- However, it remains unclear whether daytime napping can alter the sleep-dependent emotional processing in individuals of different neuroticism levels, and whether REM moderates the napping effect of altering emotional facial perception.

Objectives

1. To investigate the role of neuroticism in altering positive and negative emotional facial perception.
2. To investigate the napping effect on emotional facial processing in individuals of different levels of neuroticism.
3. To investigate the role of REM in the interaction between neuroticism and napping on emotional facial processing.

Methods

**Participants**

52 healthy university students

**MEASURES**

- Eysenck Personality Questionnaire-Short Form (EPQ)
- Emotion Recognition Task (ERT)
- Directed Emotional Faces (KDEF)

**Participants**

Participants performed PANAS and ERT before and after a 90-minute daytime nap or rest.

**Design**

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Discussion

- Our findings revealed that individuals with high neuroticism displayed different emotional perception than those low in neuroticism. We found that high neuroticism group displayed lower perceived emotional intensity on angry faces than low neuroticism group. The finding might be explained by the argument that highly neurotic people are habituated to negative stimuli.
- The study demonstrated a significant interaction between neuroticism and the napping effect on sleep-dependent emotional facial processing. Individuals with high neuroticism particularly benefit from napping, which enhances the perceived emotional intensity of strong happy faces.
- Future sleep studies are suggested to consider the effect of individual differences (i.e., personality traits).

Limitations

- REM data were generated by computer scoring software. A set of more accurate sleep recording data awaits a certified scoring technician.
- It is unclear how long the napping effect lasts. Longitudinal studies are suggested.

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