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Report on Anxious Mood Recognition Based on Electroencephalogram Pattern Recognition

1. Summary

1.1 Motivation

Early detection of anxious mood is crucial for preventing its escalation into more severe anxiety disorders and improving overall mental health. Traditional methods for anxiety detection often fall short in capturing the generalised and persistent nature of anxious mood.

1.2 Contribution

This report presents a novel method for detecting anxious mood using electroencephalogram (EEG) signals. The proposed method achieved 86.67% accuracy in differentiating between anxious and non-anxious states, showcasing its potential for clinical applications.

1.3 Methodology

125 participants were recruited and divided into anxious and non-anxious groups based on their GAD and BAI scores. Their EEG data was recorded during both resting and

task-related activities. The data was then analyzed to extract relevant features, which were subsequently used to train a classifier to distinguish between anxious and non-anxious states.

1.4 Conclusion

The proposed EEG-based pattern recognition method demonstrated high accuracy and subject-independent validation, highlighting its effectiveness in detecting anxious mood. This approach holds significant promise for early diagnosis and intervention, improved treatment planning, and enhanced mental health care.

2. Limitations

2.1 Sample Size

The study involved a relatively small sample size of 125 participants. Future research with larger populations is necessary to further validate the findings.

2.2 Specificity to Certain Anxiety Disorders

The study focused on detecting general anxious mood. Further research is needed to investigate the effectiveness of this approach in identifying specific anxiety disorders.

3. Synthesis

This research presents a significant advancement in the field of anxiety detection. The proposed EEG-based method offers a non-invasive and objective tool for early identification of anxious mood, paving the way for improved diagnosis, treatment, and

overall mental health management. Future research should focus on addressing the limitations mentioned above and explore the potential applications of this technology in clinical settings.