Symposium | AI&IT：[Symposium 66] Digital Frontiers in Psychiatry: Innovative Approaches from Asia

📅 2025年9月27日(土) 14:10 ~ 15:40 🏛 Session Room 2 (Main Hall B)

[Symposium 66] Digital Frontiers in Psychiatry: Innovative Approaches from Asia

Moderator: Taishiro Kishimoto (Keio University School of Medicine)

[SY-66-01] Development of software as a medical device for depression screening

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Background: Few biomarkers can be used clinically to diagnose and assess the severity of depression. However, a decrease in activity and sleep efficiency is often observed in depressed patients. In addition, autonomic nerve symptoms, such as changes in heart rate variability, can be used to distinguish depressed patients from healthy people; these parameters can be used to improve diagnostic accuracy.
Method: Patients with depressive symptoms and healthy subjects are asked to wear a wristband-type wearable device for 7 days and data on triaxial acceleration, pulse rate, skin temperature, and ultraviolet light are collected. On the seventh day of wearing, clinical assessments are conducted using Structured Clinical Interview for DSM-5 (SCID-5), Hamilton Depression Rating Scale (HAMD), and other scales. Using wearable device data associated with clinical symptoms as supervisory data, a machine learning model capable of identifying the presence or absence of depressive episodes and predicting the HAMD scores is developed.
Results: As of November 2024, over 800 data sets were collected from approximately 250 subjects.
Conclusion: Data from the pilot study of this study (86 subjects) showed a screening accuracy of 76% for depression identification. While there is room for improvement, the results indicate that screening and severity assessment of depression can be performed at a certain level using wearable devices.