

Correlation of Audiovisual Features
With Clinical Variables and
Neurocognitive Functions in Bipolar
Disorder, Mania

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Statistical Analysis

Speech and Video Analysis

Classification Methods

Feature vectors extracted from audio and video are modelled using Partial Least Squares (PLS) regression and Extreme Learning Machines based classifiers(Kaya et al., 2015; 2017).

Neurocognitive Evaluation

Statistical evaluation is done by using SPSS(Statistical Package for Social Sciences) for Windows 18.0 program. Categorical variables are compared with Chi-square test, qualitative variables are compared with dependent and independent sampling t-test and Mann-Whitney U test. Correlation analysis is done with Pearson and Spearman test. Statistical significance is $*=p<0.05$, $**=p<0.01$, all of tests are two-sided.

Emotion predictions for Pearson correlation analysis and regression of YMRS drop

Regression Model

YMRS score temporal change is calculated as, $t_1=0$ th day, $t_2=3$ rd day, $t_3=7$ th day, $t_4=14$ th day, $t_5=28$ th day, $t_6=90$ th day and $X_1=t_2/t_1$, $X_2=t_3/t_1$, $X_3=t_4/t_1$, $X_4=t_5/t_1$ and $X_5=t_6/t_1$. These proportions are regressed as stepwise linearly to valence, arousal and singular affect scores of first audio recording values.