

Heart rate variability as a potential measure for quality of life in elderly patients with wide spread alcohol related impairments: A pilot study

BACKGROUND

- Quality of life (QoL) ratings are critical in long term care settings to inform on the quality of care, whereas its evaluation in patients characterized by impaired cognitive functions can be challenging
- QoL ratings lack concordance between patient-ratings and expert-ratings
- Important levels of anosognosia in alcohol related brain damaged individuals have been demonstrated
- Adequate QoL can be related to the flexible adjustment of emotional regulation strategies (environmental demands)
- Vagally mediated heart rate variability (vmHRV) represents a sensitive biomarker of the overall capacity to regulate emotional responses and hence mental well-being
- VmHRV is a potential marker for QoL in intellectually impaired vulnerable populations

AIMS

- Explore the relationships between vmHRV, self-ratings and expert-ratings on a number of QoL dimensions in a sample of elderly alcohol related brain damaged individuals characterized by anosognosia
- Test the feasibility of the vmHRV measurement paradigm in the present clinical sample

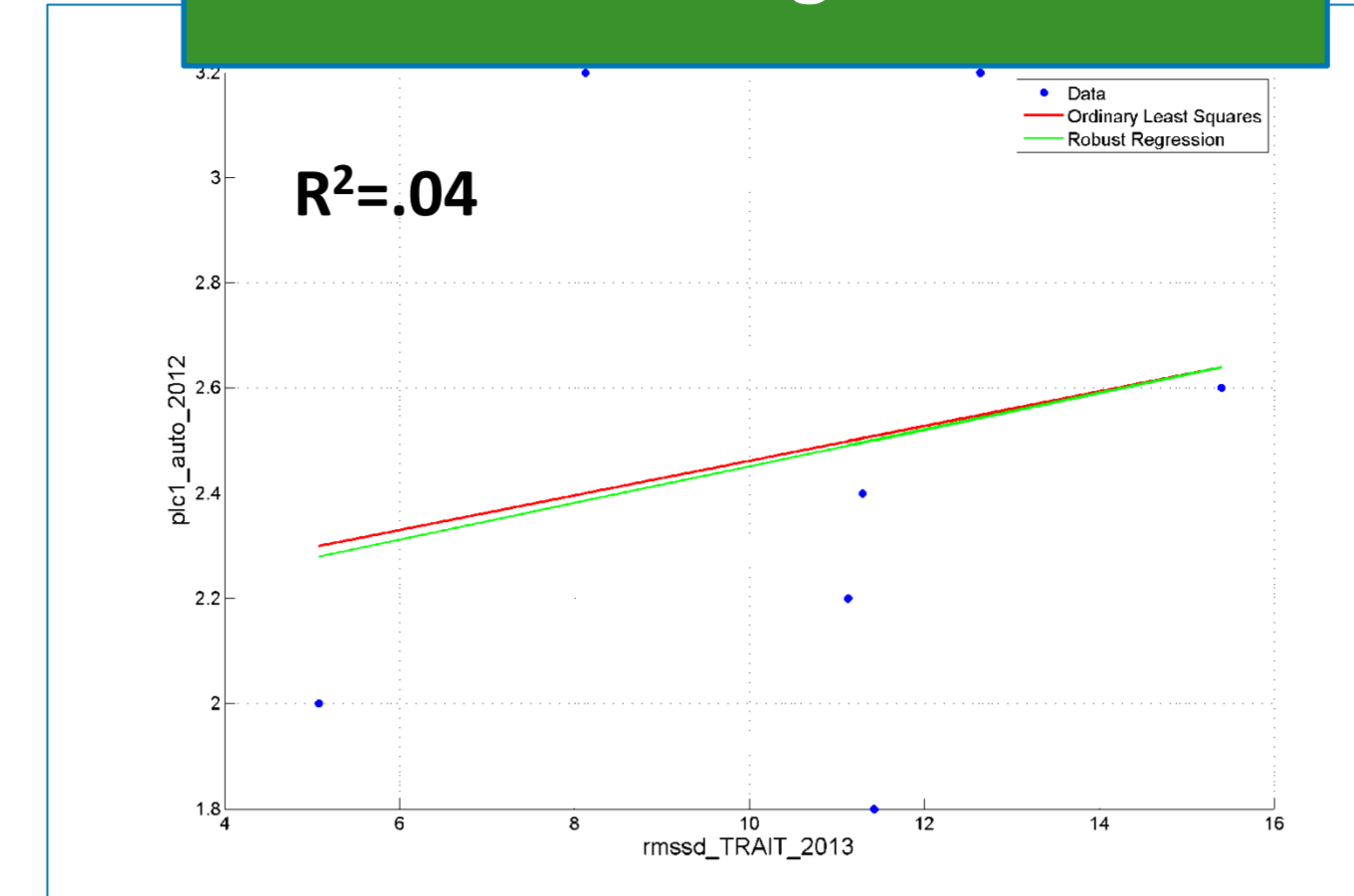
METHODS

- $N=15$ (♀=3), age $M = 57.2$ ($SD=7.2$, range=45.7-64.7 years), suffering from widespread alcohol related brain damages (e.g., Korsakoff syndrome).
- Functional dependencies require 24h care and support
- Minimum of 2 standardized cardiac vagal heart rate measurements per person at rest during individually performed relaxation sessions. Calculation of vmHRV according to recommendations of the Task Force (1996)
- Self-ratings and Expert-ratings of the patient's QoL on 6 different dimensions (PLC; Laubach et al., 2001)
- Experts are acquainted healthcare professionals
- Reduction of outlier effects using robustness check

RESULTS

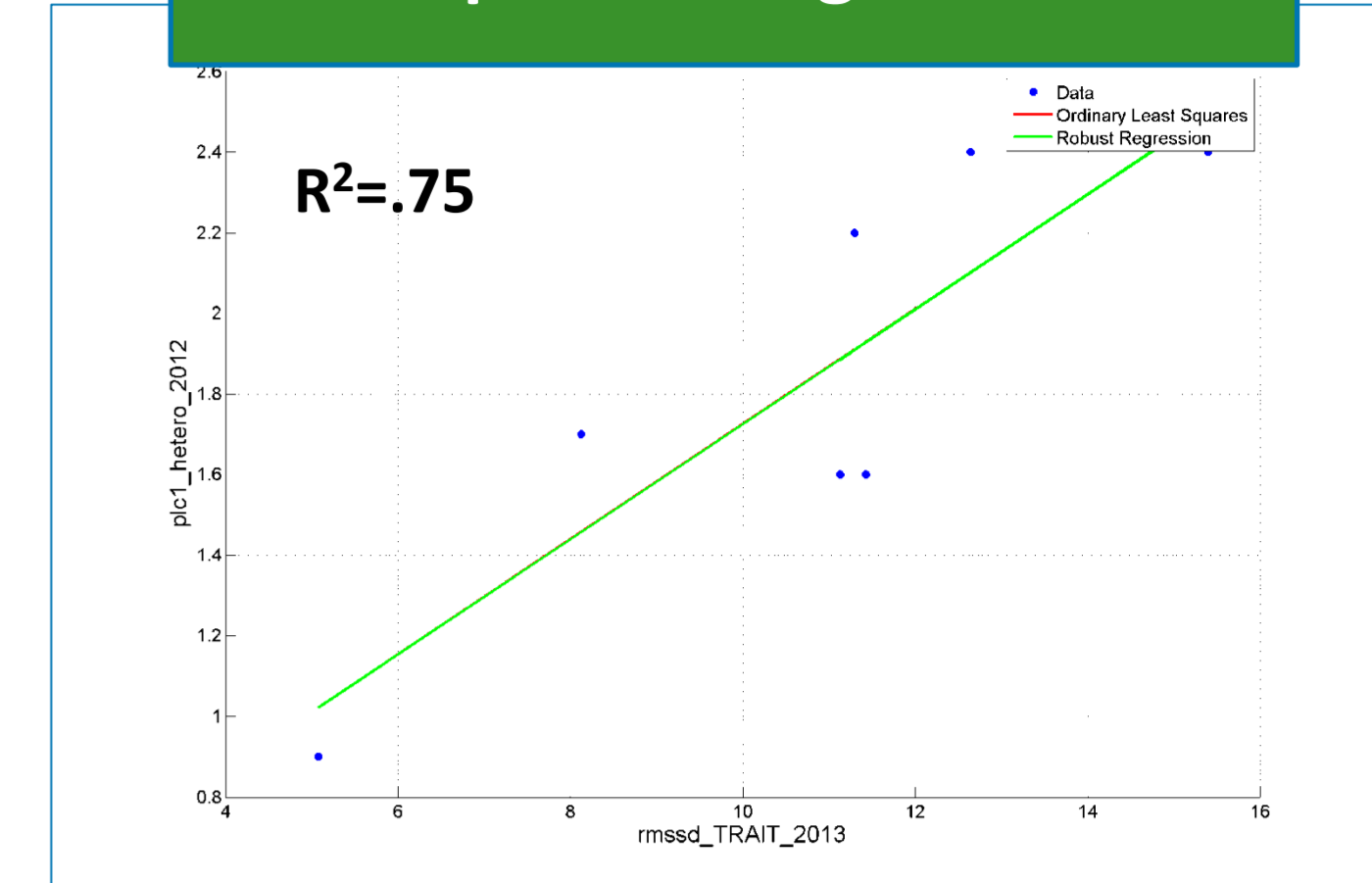
- No relationships observed between QoL self-ratings taken from the patients and their vagally mediated heart rate variability, except for QoL scale 4 (negative mood)
- This suggests that self-rated QoL in the present patient sample is mostly unrelated to the patient's ability to regulate and to flexibly adjust his/her emotions
- Important relationships are observed between the patient's QoL rated by acquainted healthcare professionals and the patient's cardiac parasympathetic activity
- The observed relationships are robust, with non-significant β differences (1 exception = QoL scale 5)

QoL Self-Ratings & vmHRV

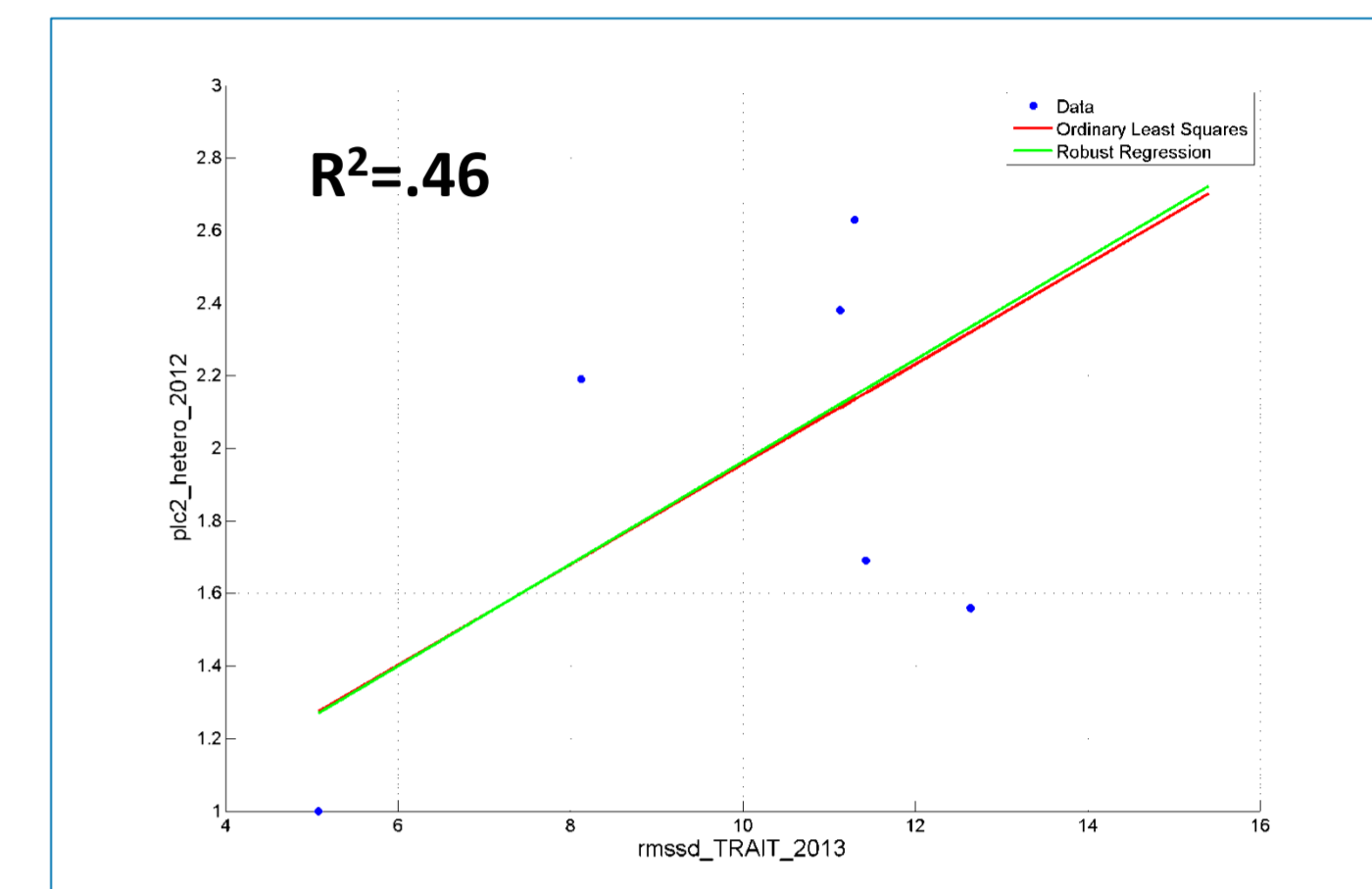
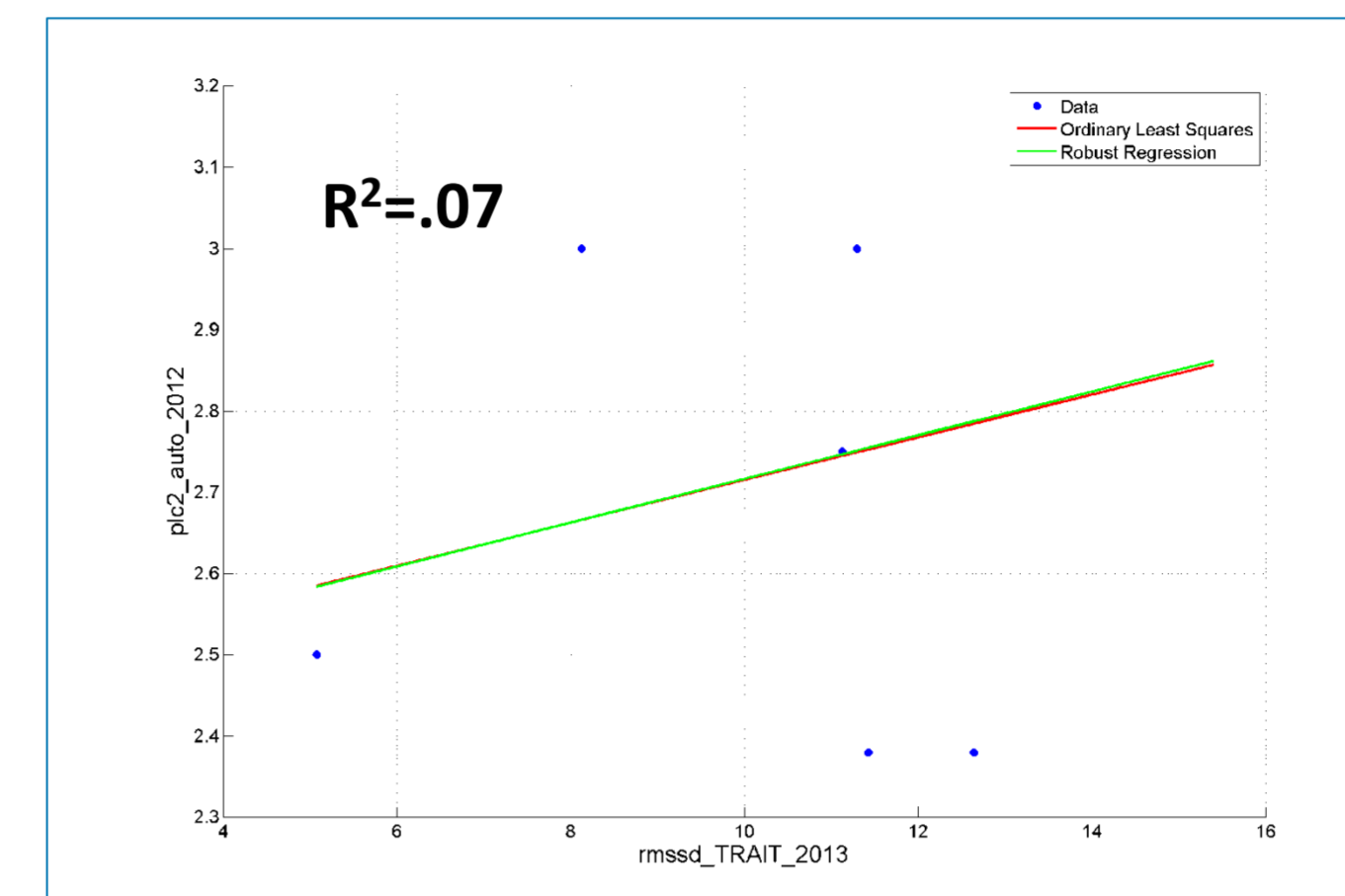


QoL Scale 1
Subjective physical & mental performance

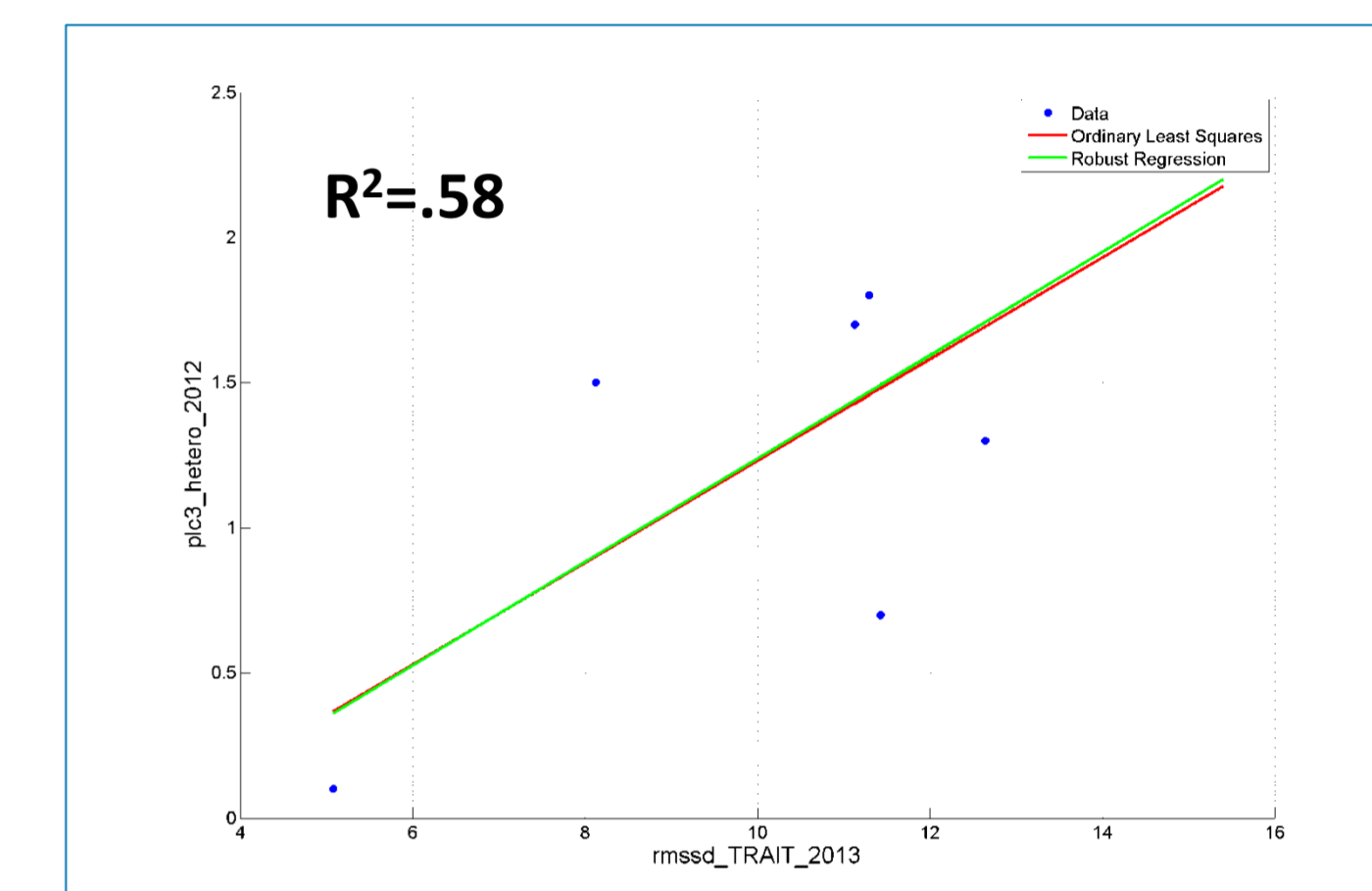
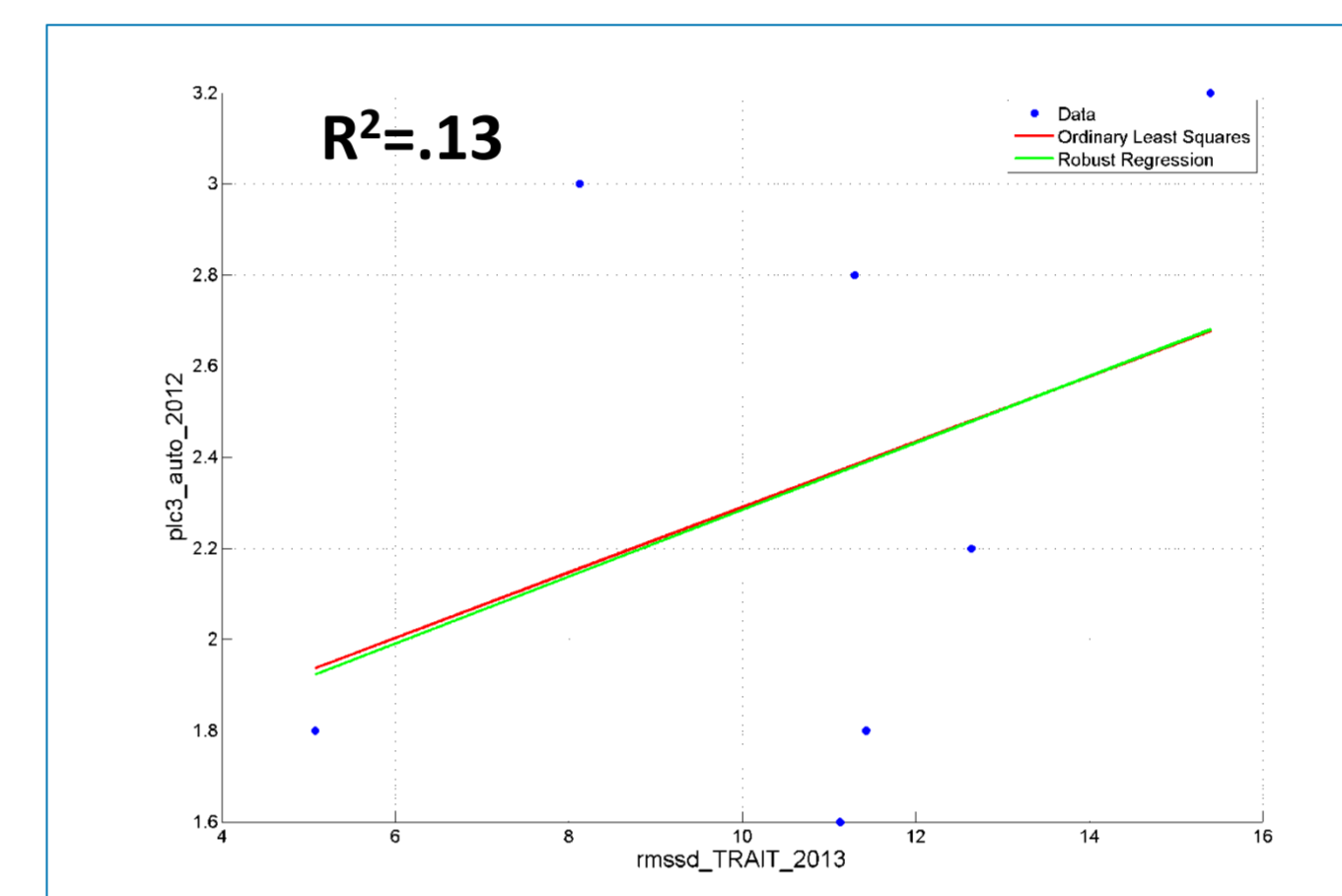
QoL Expert-Ratings & vmHRV



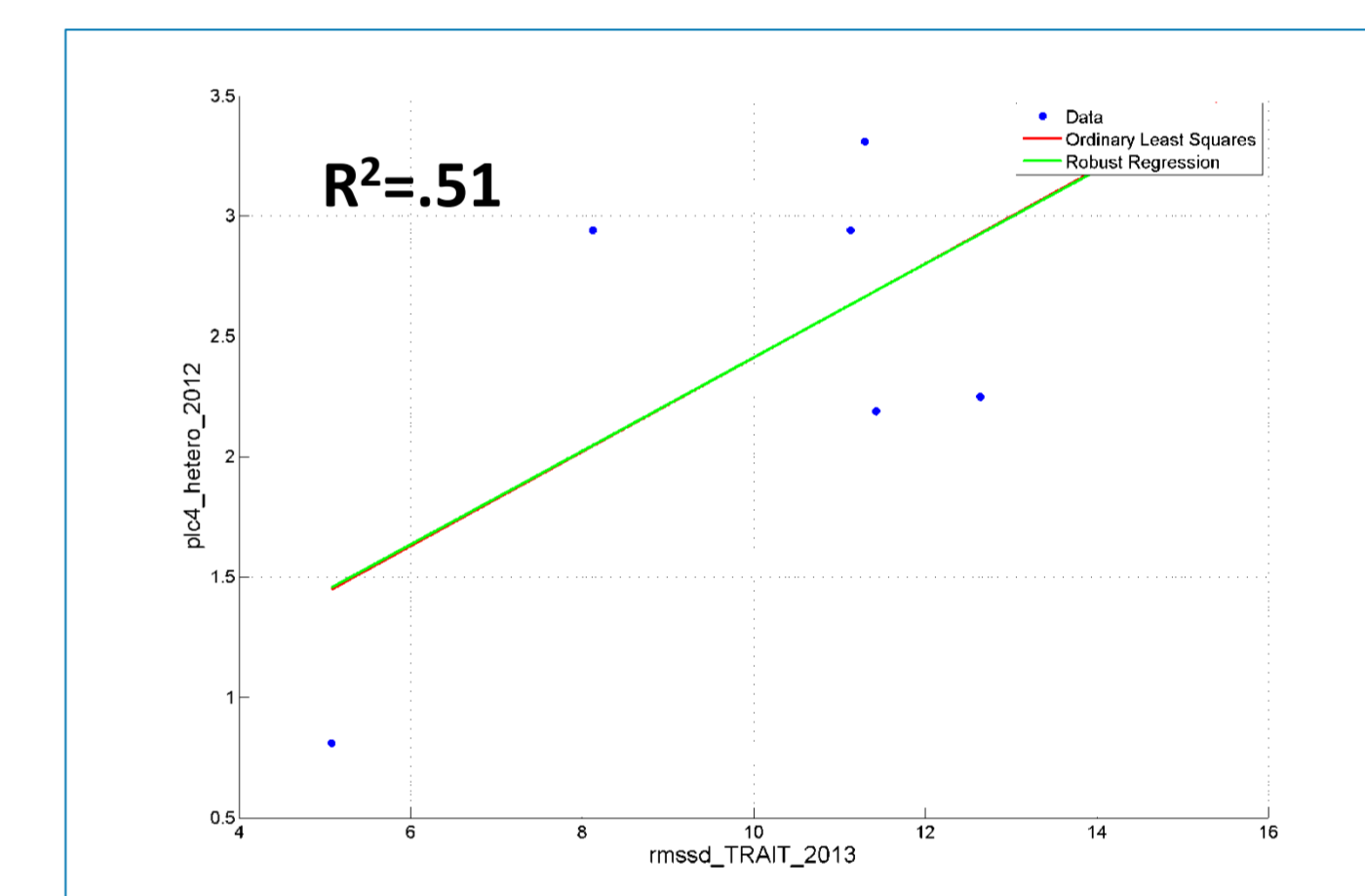
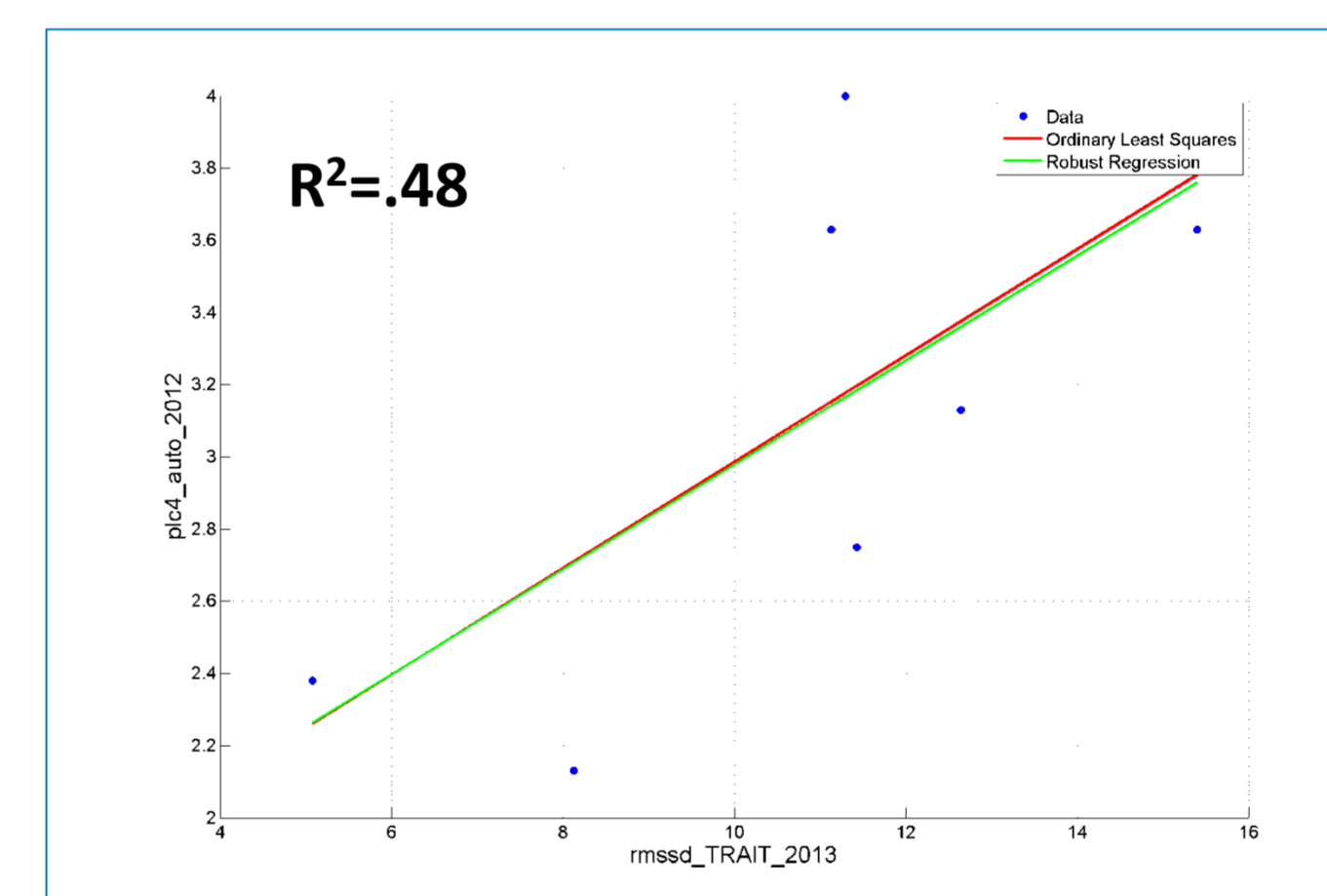
QoL Scale 2
Ability to have pleasure & to relax



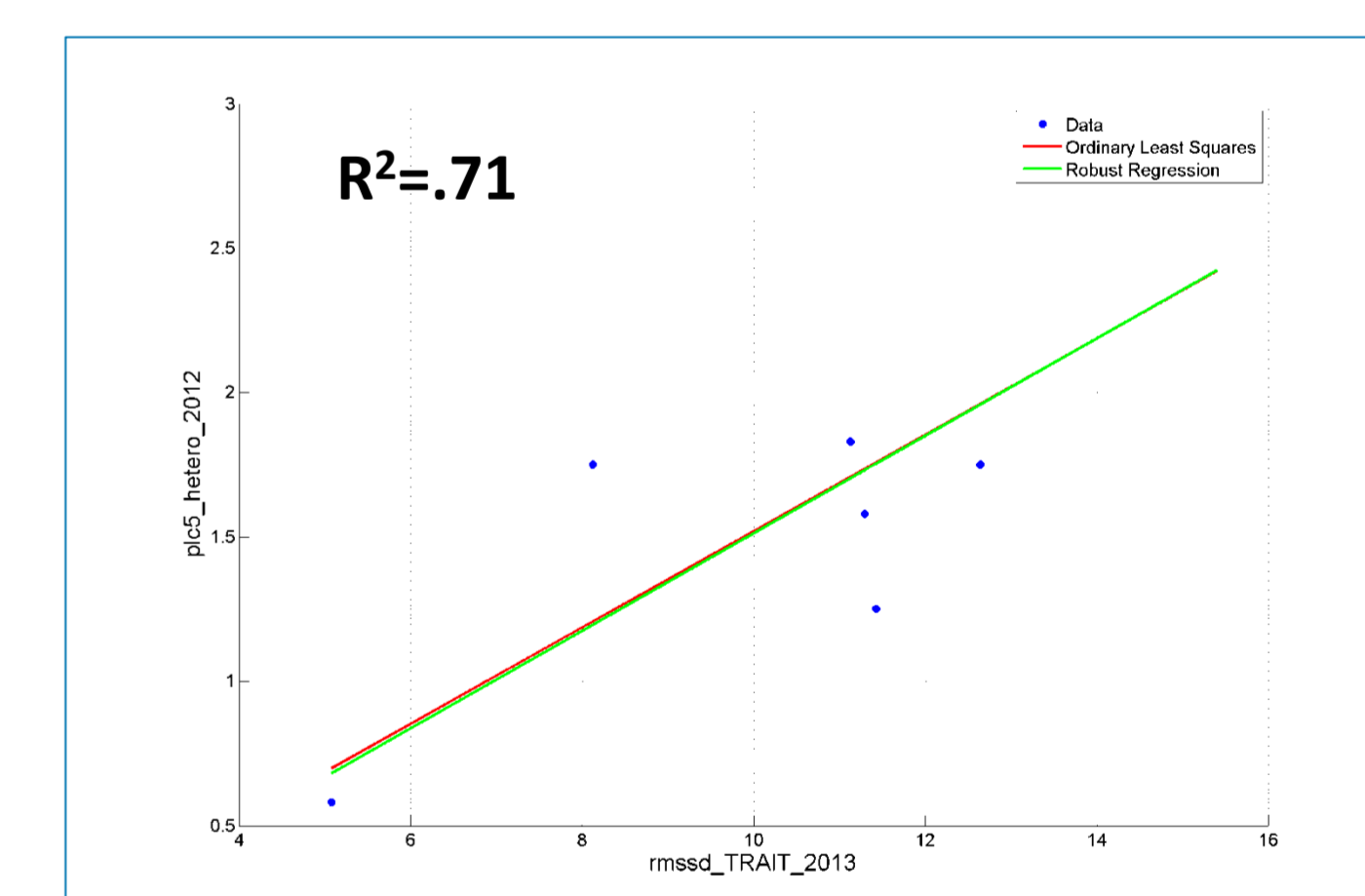
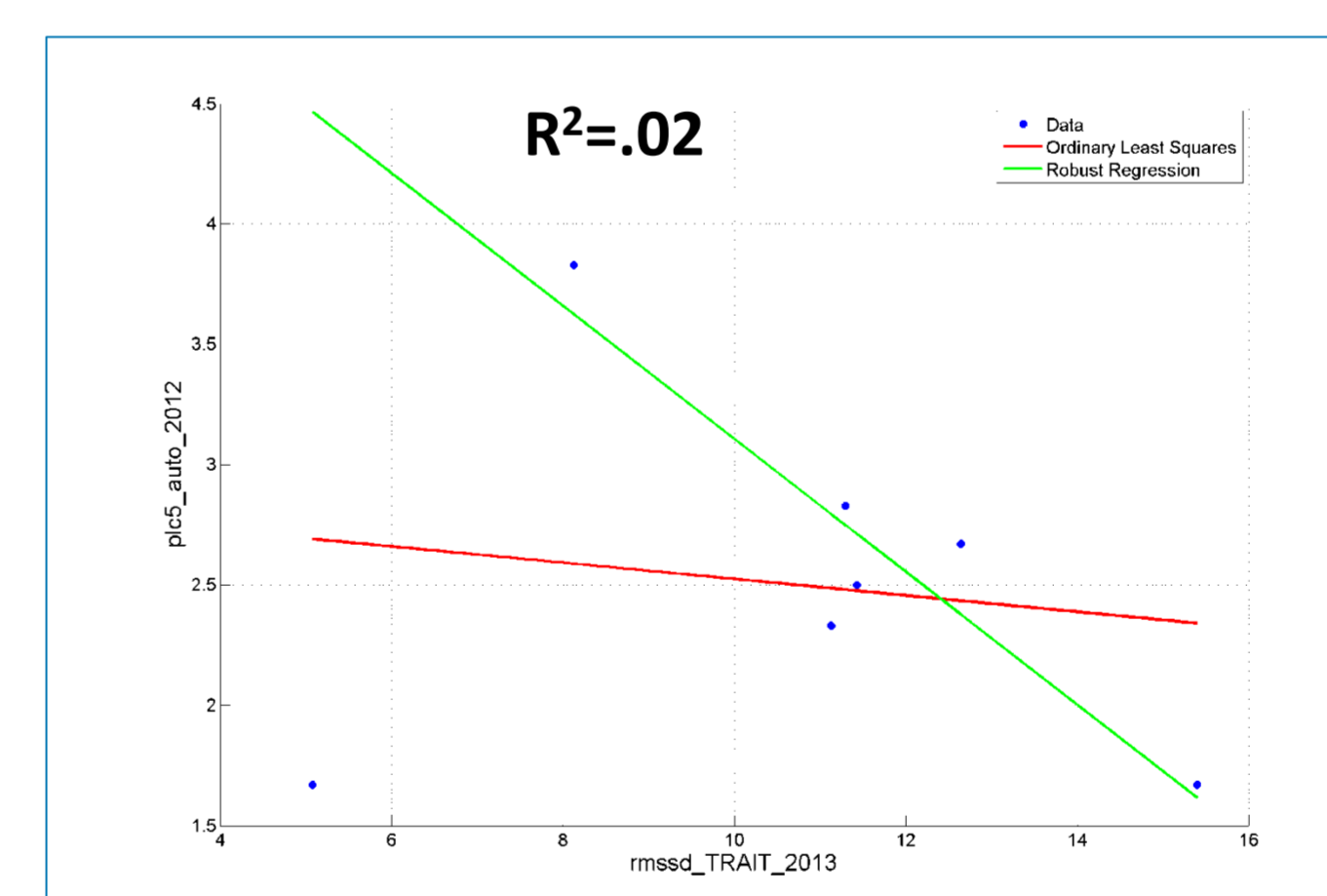
QoL Scale 3
Positive mood



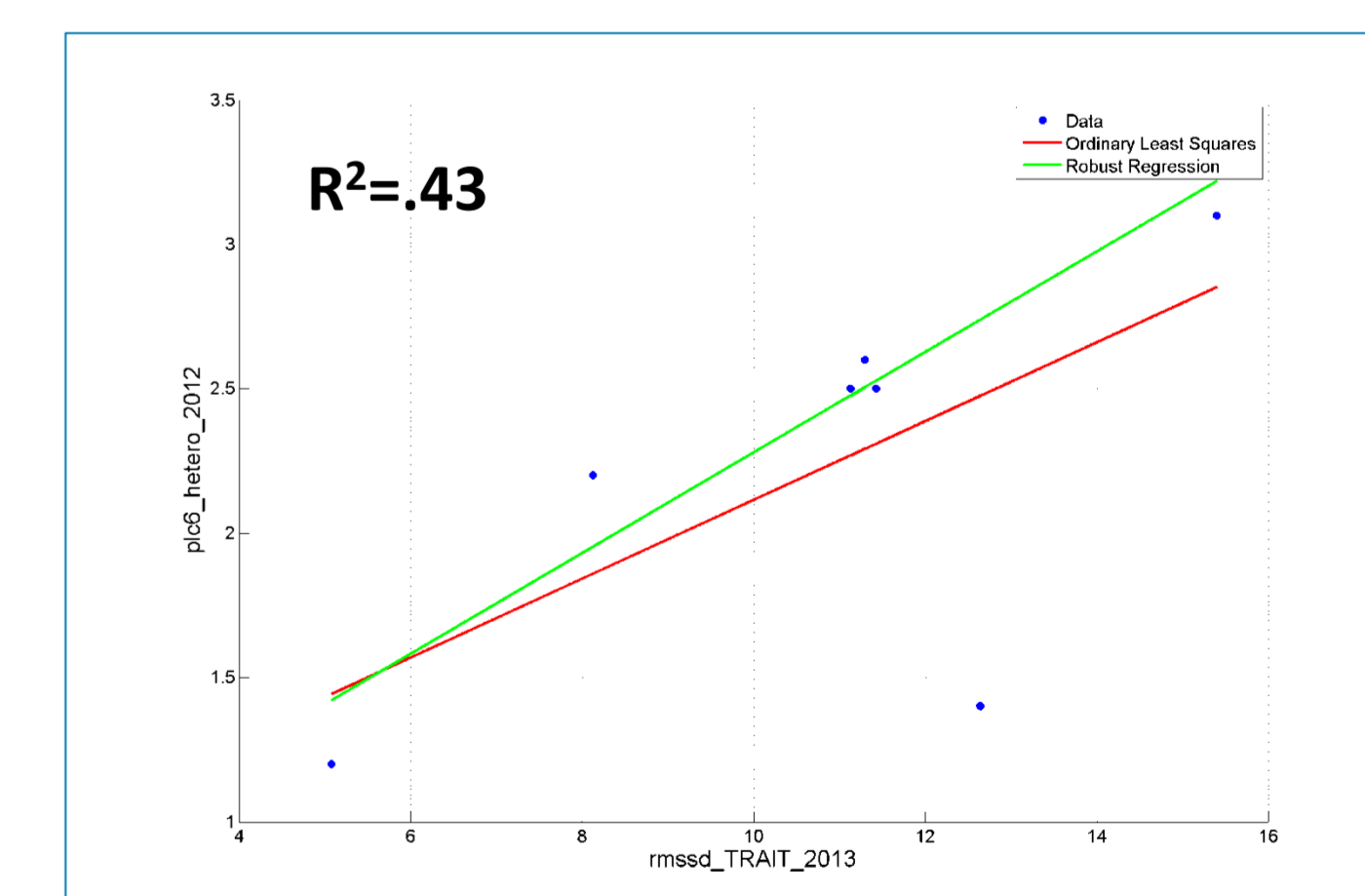
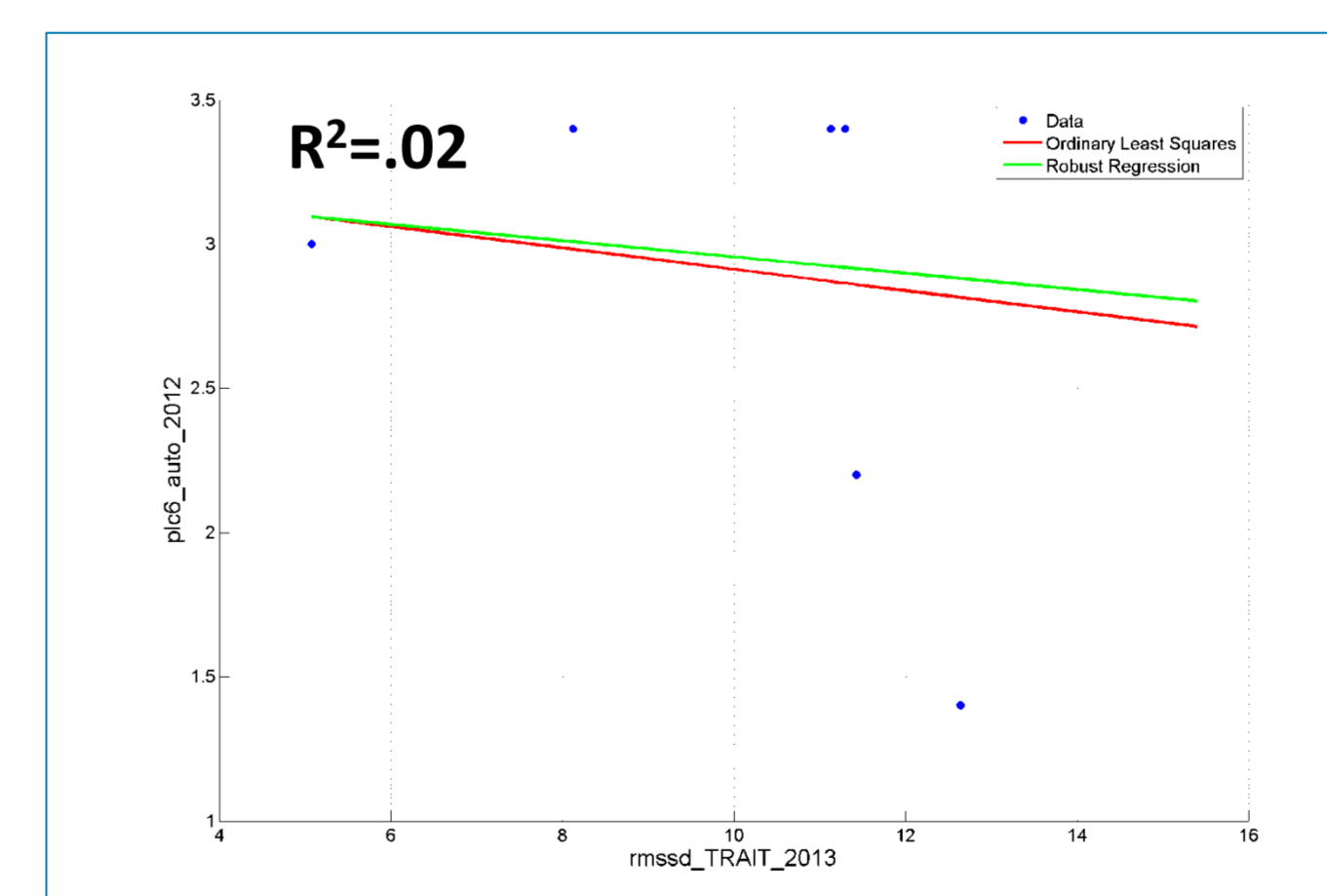
QoL Scale 4
Negative mood



QoL Scale 5
Ability to relate/ approach others



QoL Scale 6
Sense of affiliation



CONCLUSIONS

- Findings suggest that
 - experts are a valuable source for QoL related information in patient populations characterized by important cognitive deficits and anosognosia
 - vmHRV represents a potential biomarker for QoL and emotion regulation capacity in clinical settings
- VmHRV provides additional valuable information on emotional dysregulation and emotional instability due to a lack of prefrontal inhibitory control
- Further studies should establish vmHRV as an objective measurement method to evaluate health and well-being related outcomes in clinical settings, especially in populations characterized by complex and diverse cognitive and affective deficiencies
- Evaluation of therapeutical interventions aiming to increase emotion regulation capacity