

## Supplementary file

### Appendix 1: summary of the measures used to assess construct validity of the MEMSI

The FACIT-F assesses the impact of fatigue on daily activities and function[1]. The instrument is scored on a 5-point scale with total scores ranging from 0-52 and has been validated for use in COPD[2].

The HADS is a global measure of psychological distress that assesses Anxiety (7 items) and Depression (7 items). Scores range from 0-21 with values >7 indicating the presence of anxiety or depression [2]. The HADS has been validated for use in patients with COPD[4].

The SGRQ-C measures the impact that COPD has on overall health, daily life and perceived well-being[5]. The scale produces a total score calculated from three component scores: Symptoms; Activity and Impacts on a scale from 0-100.

The mMRC Dyspnea Scale is a widely used instrument containing five statements related to activity limitations associated with breathlessness. Scores range from 0-4 with higher scores indicating greater impairment[6].

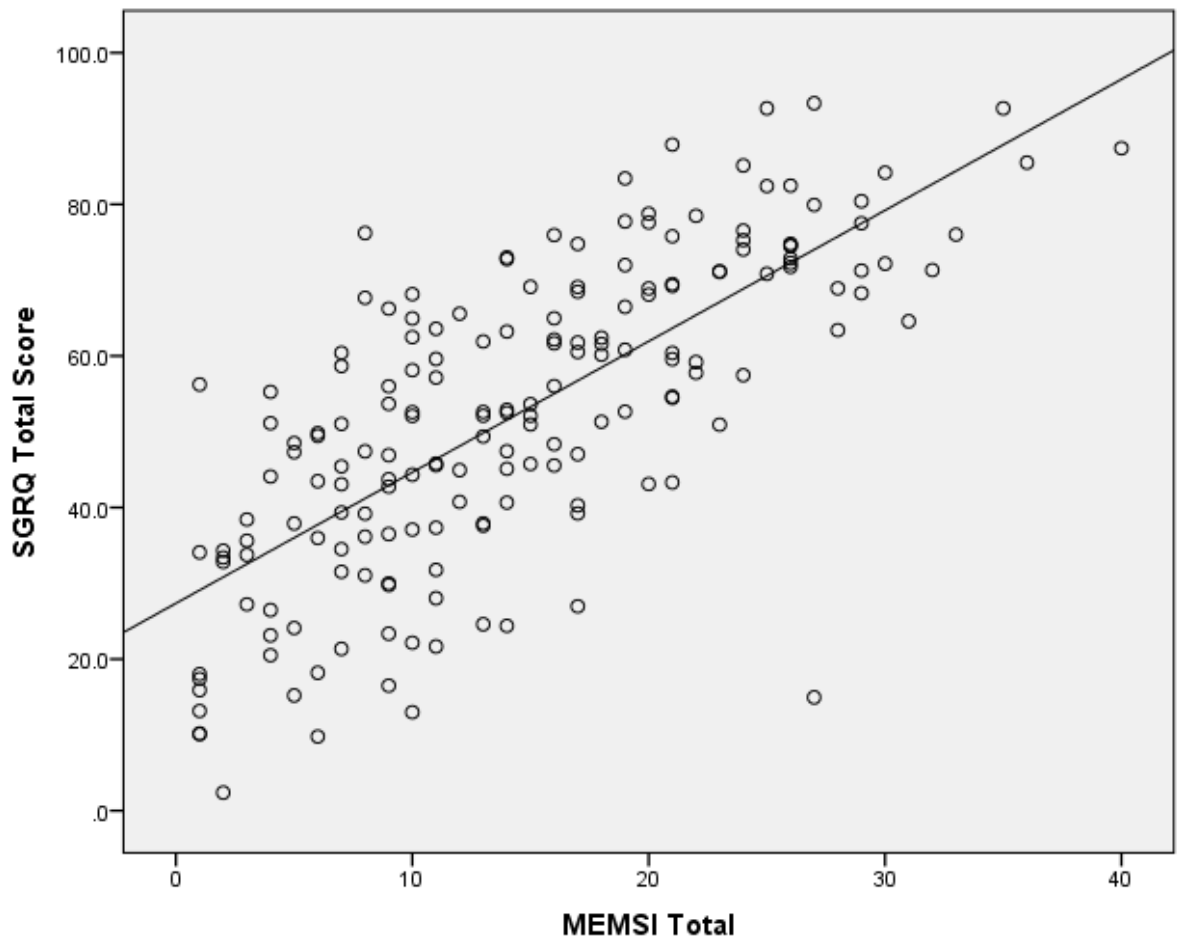
#### References

- 1 Yellen SB, Cella DF, Webster K. Measuring fatigue and other anemia-related symptoms with the Functional Assessment of Cancer Therapy (FACT) measurement system. *J Pain Symptom Manage* 1997;13:63-74.
- 2 Al-shair K, Muellerova H, Yorke J, et al. ECLIPSE investigators. Examining fatigue in COPD: development, validity and reliability of a modified version of FACIT-F scale. *Health Qual Life Outcomes*. 2012;23:100
- 3 Zigmond, AS; Snaith, RP. The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica* 1983;67: 361-70
- 4 Puhan MA, Frey M, Büchi S, et al. The minimal important difference of the hospital anxiety and depression scale in patients with chronic obstructive pulmonary disease *Health and Quality of Life Outcomes* 2008;6:46

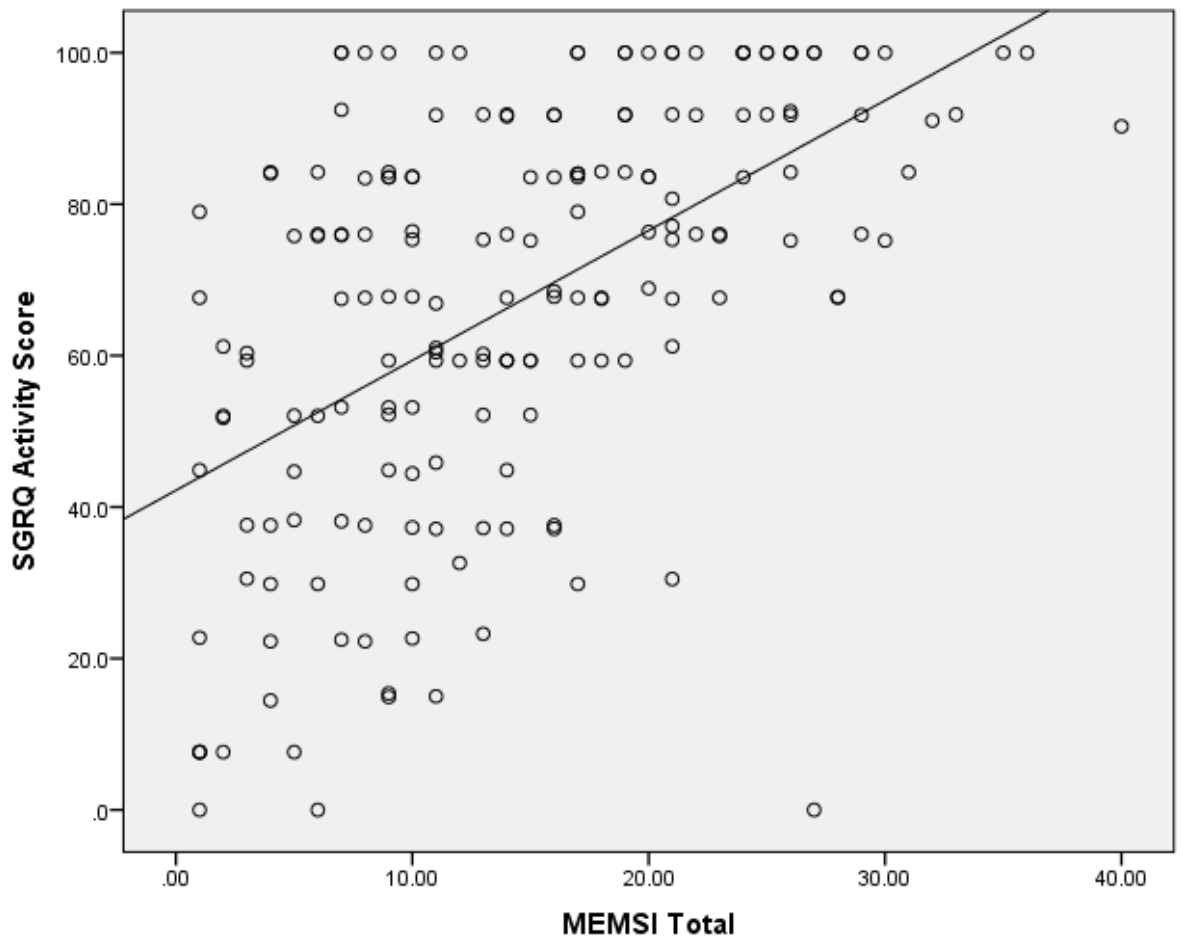
- 5 Meguro M, Barley EA, Spencer S, Jones PW. Development and Validation of an Improved. COPD-Specific Version of the St. George Respiratory Questionnaire. *Chest* 2007;132:456-63.
- 6 Doherty DE, Belfer MH, Brunton SA, et al. Chronic Obstructive Pulmonary Disease: Consensus Recommendations for Early Diagnosis and Treatment. *Journal of Family Practice*, November, 2006

**Appendix: 2 Supplementary file showing 1: correlations between the MEMSI and the SGRQ-C Total Score and Subscales; HADS Anxiety and Depression and FACIT-F Total Score. 2: Association between MEMSI score and GOLD Grade.**

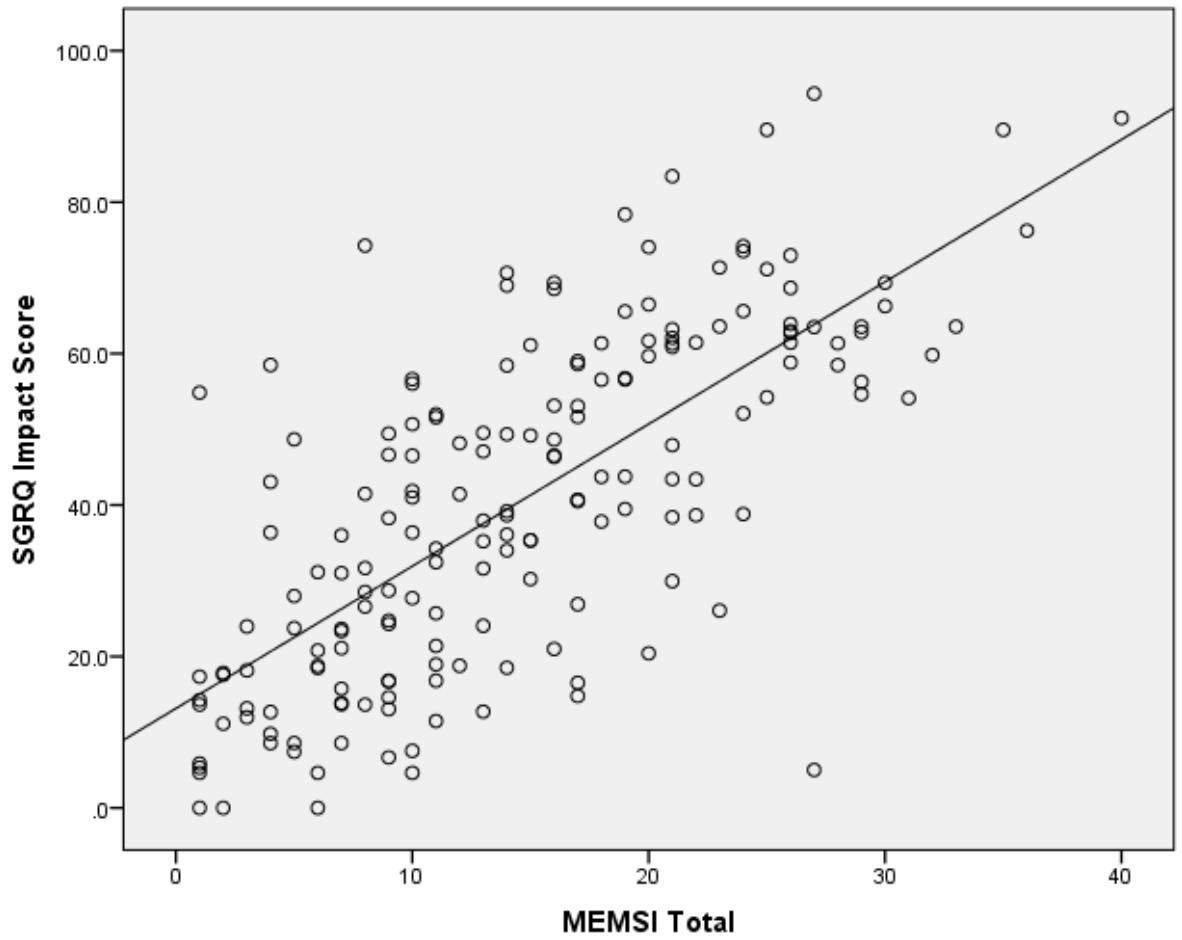
1. Correlation between MEMSI total score and SGRQ-C total score (Pearson's  $r=0.73$ )



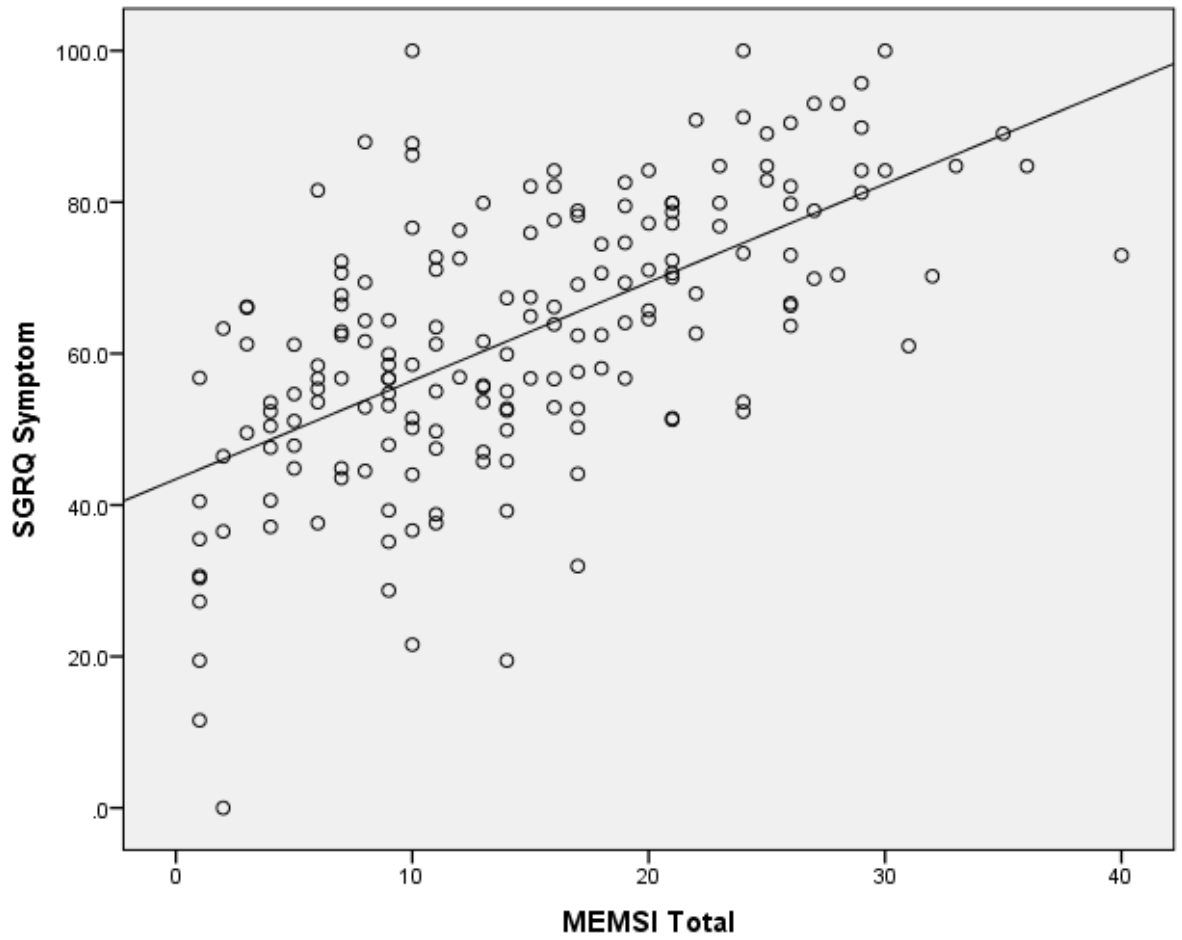
2. Correlation between MEMSI total score and SGRQ-C Activity Score  
(Pearson's  $r=0.54$ )



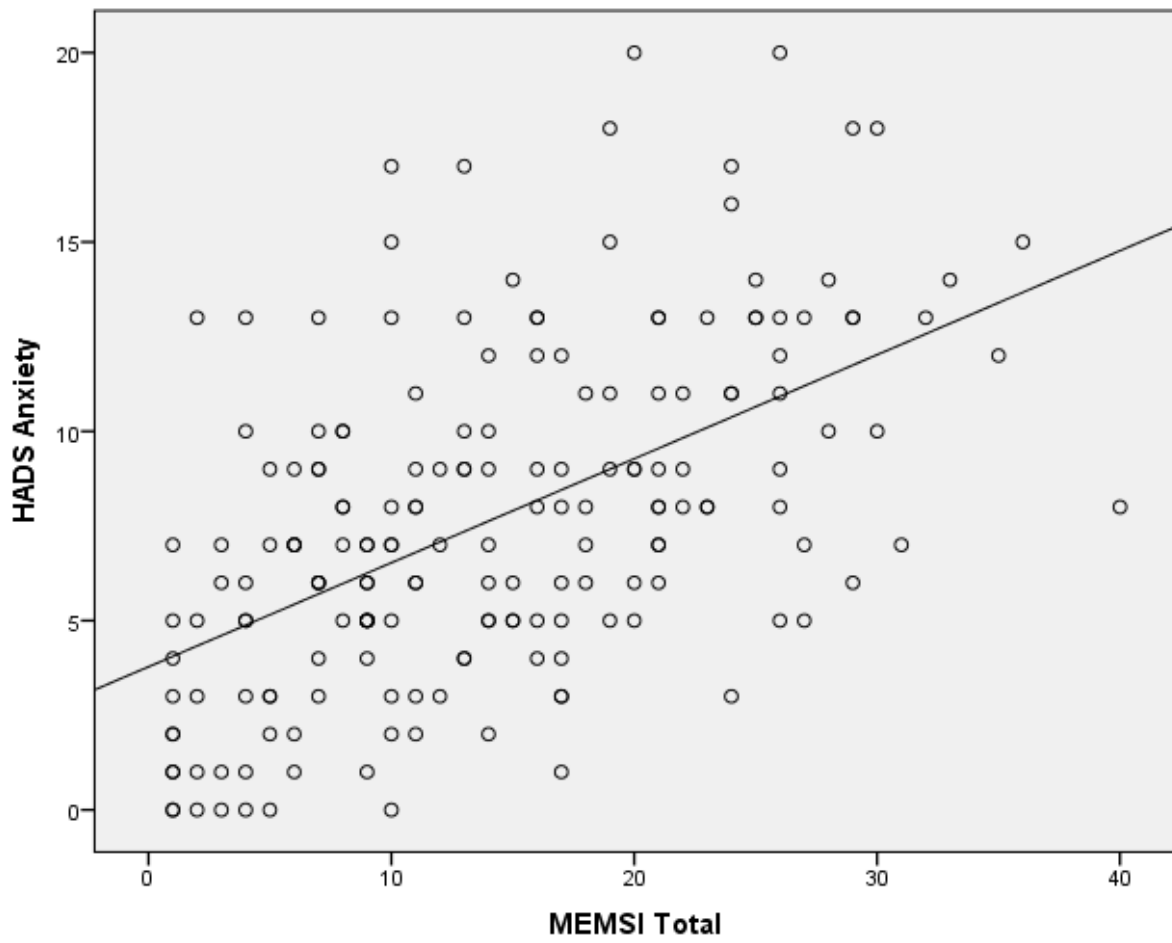
3. Correlation between MEMSI total score and SGRQ-C Impact Score  
(Pearson's  $r=0.72$ )



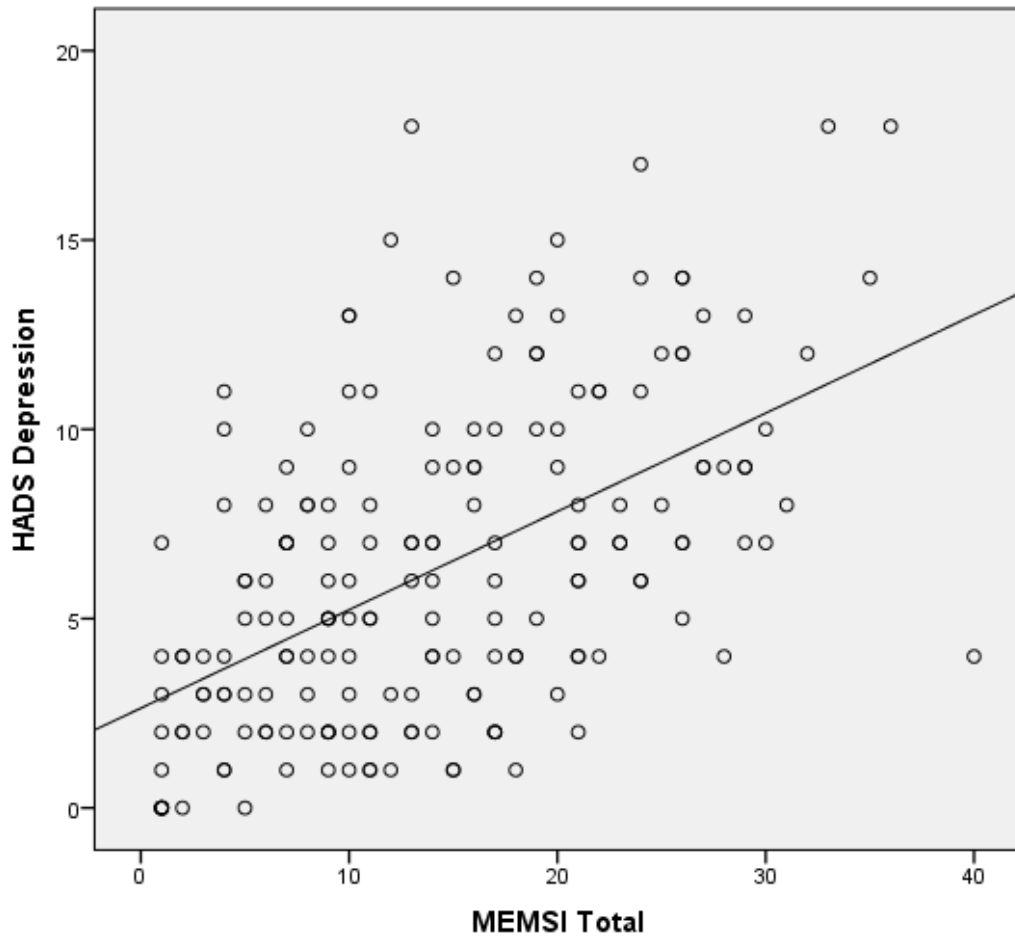
4. Correlation between MEMSI total score and SGRQ-C Symptom Score  
(Pearson's  $r=0.62$ )



5. Correlation between MEMSI total score and HADS Anxiety score (Pearson's  $r=0.53$ )

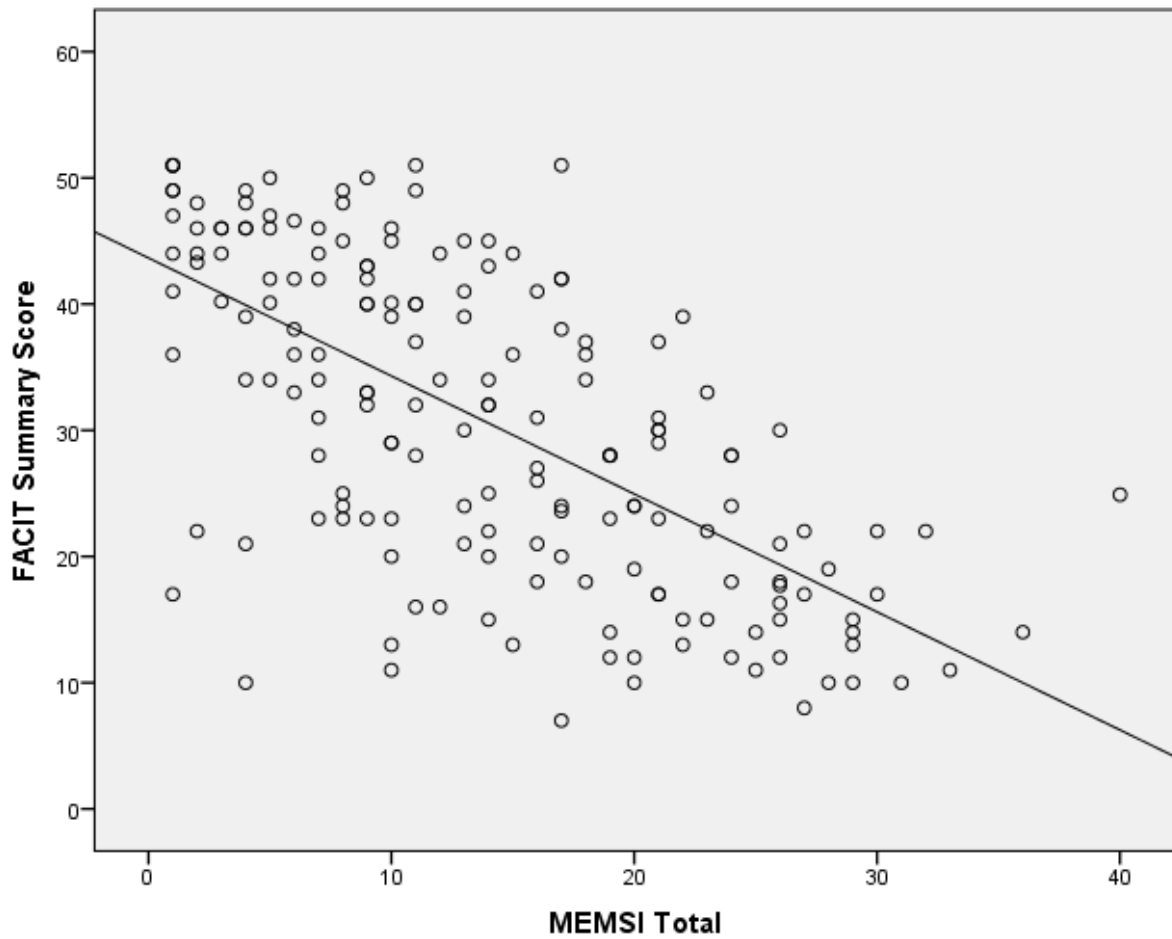


6. Correlation between MEMSI total score and HADS depression (Pearson's  $r=0.54$ )





7. Correlation between MEMSI total score and FACIT-F Total Score (Pearson's  $r=-0.65$ )



## 8. Association between mean MEMSI scores and GOLD grade

