**Supplemental Methods**

**Exploratory analyses.** We explored whether the pattern of responses on the MADRS varied by cognitive phenotypes using a MANCOVA. This analysis was then repeated controlling for relevant covariates where appropriate.

We further explored the “High Normal” cognitive phenotype, as the four-cluster solution suggested this group may differ in attention/working memory abilities, using Mann Whitney U-tests to determine differences in sociodemographic and clinical factors, functional status, subjective cognitive measures, and cognitive composites. We then conducted a mixed ANCOVA with the cognitive composites as the repeated factor and phenotype as the between-subject factor, with any significant sociodemographic or clinical factors identified in the previous analysis as covariates (after checking for the normality of the residuals). Finally, we explored whether the response pattern on the MADRS differed between these two groups using the above methods (i.e., MANCOVA).

**Supplemental Figure Caption**

*Supplemental Figure 1.* Differences in Montgomery Asberg Depression Rating Scale (MADRS) items between cognitive phenotypes. (a) Three cognitive phenotypes identified in the full depression sample. (b) Two cognitive phenotypes identified in exploratory analysis of “High Normal” phenotype. Both sets of results are presented after covariate adjustment in multivariate analyses.