

Title: Independent Telephone-based Assessment of Depressive Symptoms in China

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Methodologic question: Is the MADRS reliable when administered via telephone to Mandarin speaking patients with MDD in China?

Introduction (Aims). A pilot study was conducted at three hospitals in China to study the use of telephone-based use of the Structured Interview Guide for the Montgomery-Asberg Depression Rating Scale (SIGMA). The primary objective for this study is to collect preliminary reliability and validity data for the MADRS as administered by telephone in a sample of Mandarin-speaking patients diagnosed with MDD.

Methods. Five subjects were recruited at each site for a total of 15 subjects. Each subject was assessed at three visits by a site-based rater (SBR) who completed an in-person SIGMA interview and an independent rater (IR) who completed the SIGMA interview by telephone. In addition, the site-based rater also completed the CGI at each visit. Reliability was calculated using standard methods (e.g. ICC) and other techniques were used to assess the impact of covariates. We modeled the means across time and the mean difference between raters at each time point using a linear mixed model with main effects for Visit and Rater Type as well as an interaction effect. We also accounted for within subject variability that is present by assessing a subject at three different time points with a random effect. Total scores were analyzed using linear mixed-effects regression, LMER, with the lme4 package in R (Bates, Maechler, Bolker, & Walker, 2013) fit by maximum likelihood t-tests use Satterthwaite approximations to degrees of freedom. To evaluate item-level data, we calculated the mean difference of IR and SBR ratings by item.

Results. The overall reliability between site-based and telephone ratings was high. Reliability at screening visits demonstrated an excellent ICC (0.93) and Weeks 1 and 2 demonstrate good reliability (0.82 and 0.83). Subjects with low symptom severity (average MADRS of 15 or less at the visit) were more likely to have a higher rating by the IR than the SBR. This provides partial support for the hypothesis that there are differences in reliability at different symptom severity levels. The output of the linear mixed model shown the main effect of rater type was not statistically significant ($p=0.40$) at screening in our analysis. Item-level differences within the data were generally low ($\pm <0.5$ points/item), further reflecting the strong levels of reliability overall. It is interesting that several of the items cited in other studies as being potentially problematic via telephone (e.g. inability to feel, pessimistic thoughts, and suicidal thoughts – Items 8-10 (Mundt, 2006)) show the lowest mean differences overall. This may be due to a willingness on the part of patients in this study to more openly discuss and describe these phenomena than has been previously reported.

Conclusion. Our results demonstrate a high level of reliability across visits in both IR and SBR Chinese clinicians.