Subjective cognitive decline and cognitive task performance: patient selection via social media and digital assessment validity

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SUBMISSION DETAILS

What is the Methodological Question Being Addressed? COVID-19 imposed restrictions has curtailed the use of standard research and recruitment methods. We investigated the potential of online (web based) testing to determine whether it was possible to reliably identify participants with subjective cognitive decline to participate in future studies.

Introduction Improving recruitment methods, both in terms of recruitment efficiency and assay sensitivity of recruited samples, is important in accelerating drug development for disorders of cognitive decline. In addition, establishing the relationship between reported subjective impairment and actual performance on cognitive tasks would also increase the efficiency of recruitment. Within the context of the COVID-19 pandemic, we conducted an online study (VICOG) to explore the potential of social media to access, remotely, individuals with subjective cognitive decline, and determine the validity of this sample using a short battery of questionnaires and computerized cognitive tests.

Methods Participants, aged between 65 and 85 years of age, were recruited via targeted Facebook advertisements with data collection occurring from March – June 2020 inclusive, with the recruitment process supported by a Facebook marketing specialist. Participants were required to be living in the United Kingdom, to not have a diagnosis of any neurological or psychiatric disorder, and to not be taking medication for any neurological or psychiatric disorder. Participants completed, via the online P1vital® ePRO Clinical system, the Informant Questionnaire on Cognitive Decline (IQCODE) and Perceived Cognitive Deficits Questionnaire (PDQ) as self-reported measures of subjective cognitive decline, together with a (i) word recall and word recognition task, (ii) a digital version of the Digit Symbol Substitution Test (DSST) and (iii) a Facial Expression Recognition Task (FERT).

Results A total of N=74 participants were recruited. Of these, 37 (50%) scored >=52 on the IQCODE, scores considered indicative of at least mild levels of subjective cognitive decline over the prior 10 years. Correct word recall was significantly lower in individuals scoring >=52 on the IQCODE compared to those scoring 48-51 (a range indicative of little subjective change in cognition). PDQ score was significantly negatively correlated with number of words correctly recalled, and significantly positively correlated with number of word recognition false alarms. No significant relationships were observed between subjective cognitive impairment measures and either DSST or FERT performance. Recruitment via Facebook was slower than anticipated and required both greater time and financial input than initially projected.

Conclusion Targeted recruitment via Facebook was successful in recruiting a sample of participants in which subjective cognitive decline was prevalent. Evidence of objective cognitive decline was confirmed in participants with greater self-reported subjective impairment, in the form

of significantly poorer performance in word recall and word recognition tasks. Social media and other online recruitment strategies, paired with selected subjective and objective measures of cognitive impairment, may be valuable to clinical trials both in terms of reach and assay enrichment for clinical trials. Resource requirements, including the need of social media specialists, will be important in making such approaches successful.

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Keywords

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Guidelines I have read and understand the Poster Guidelines

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