

# Informant Concern about Participant Cognition is Associated with MMSE Scores in Participants with High but not Low Formal Education

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## BACKGROUND / METHODS

**Background:** Research on Alzheimer disease and related disorders (ADRD) generally requires the participation of a study partner to provide collateral information about the participant's cognition and level of function in activities of daily living (ADLs), even if the participant is presumed to be cognitively normal (CN). However, finding an appropriate study partner may be more difficult for participants from disadvantaged socioeconomic backgrounds, due to financial, cultural or logistical barriers. The need for study partner therefore creates another barrier to recruiting a diverse population for ADRD research<sup>1</sup>.

USC's ADRC places a priority on recruiting Latinx participants for our clinical core and affiliated studies, many of whom are immigrants from Mexico and Latin America with limited formal education. In our center's experience in working with these participants, completing the study partner portion of the evaluation is challenging for logistical reasons, such as unpredictable work shifts or unreliable phone numbers. However, we have also noted anecdotally that the informants's assessment of the participant's cognition seems to be less consistently related to objective measures such as neuropsychological evaluation. For the present study, we used education as a proxy for socioeconomic status to determine if there was a difference between groups in the reliability of the information with regards to the participant's cognition and behavioral symptoms.

**Methods:** We used baseline data from USC ADRC participants. We divided the participants by education as follows: low (less than 9 years), medium (9-11 years), high (12 years or greater). For the purpose of this analysis, we only included the low and high groups because at our center participants with less than 9 years are almost universally from the community of interest. Student's t-tests were used to compare participants for whom their was an informant concern about the participant's cognition, stratified by level of education, for participants without dementia (CDR 0 or 0.5).

## RESULTS

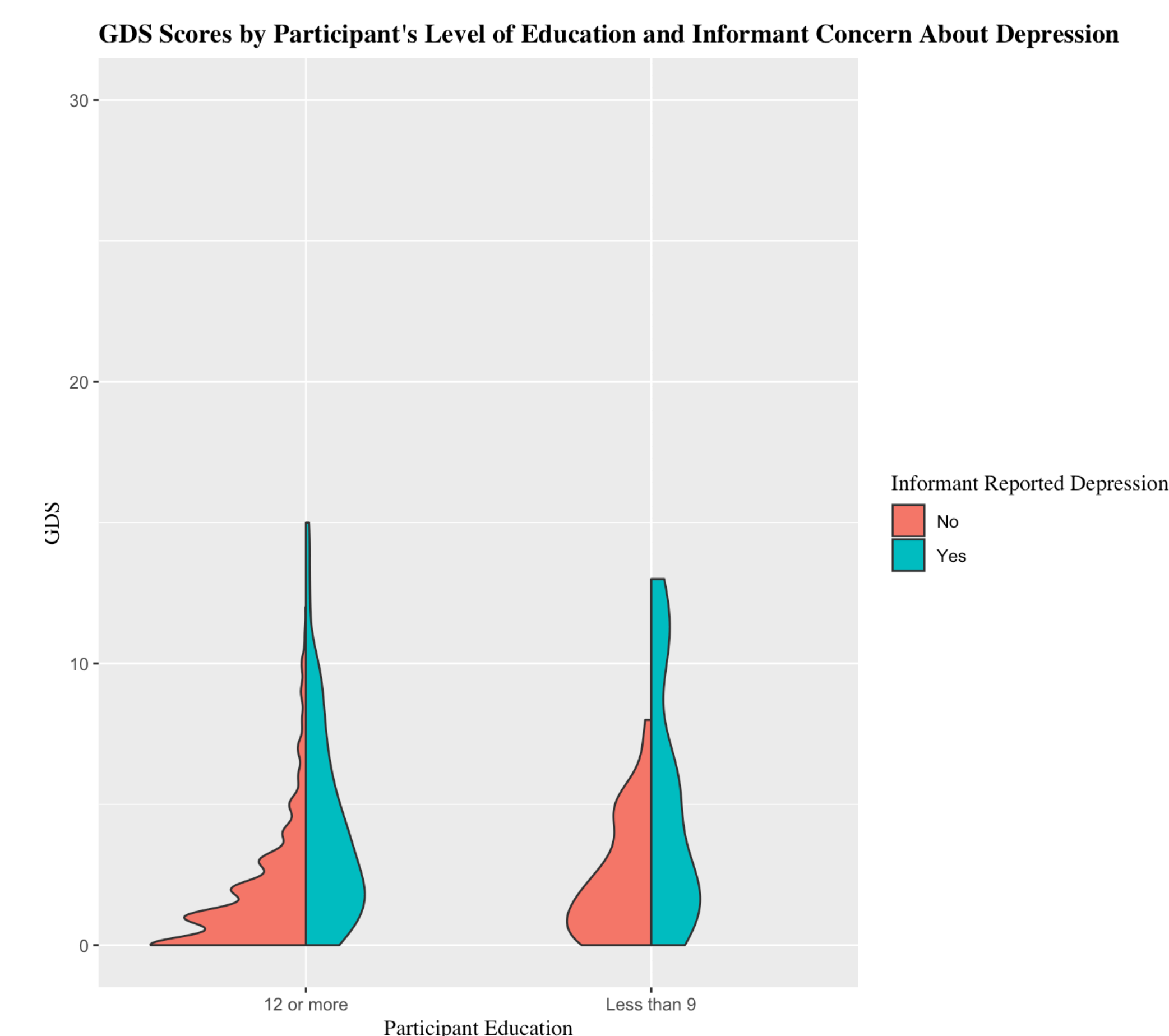
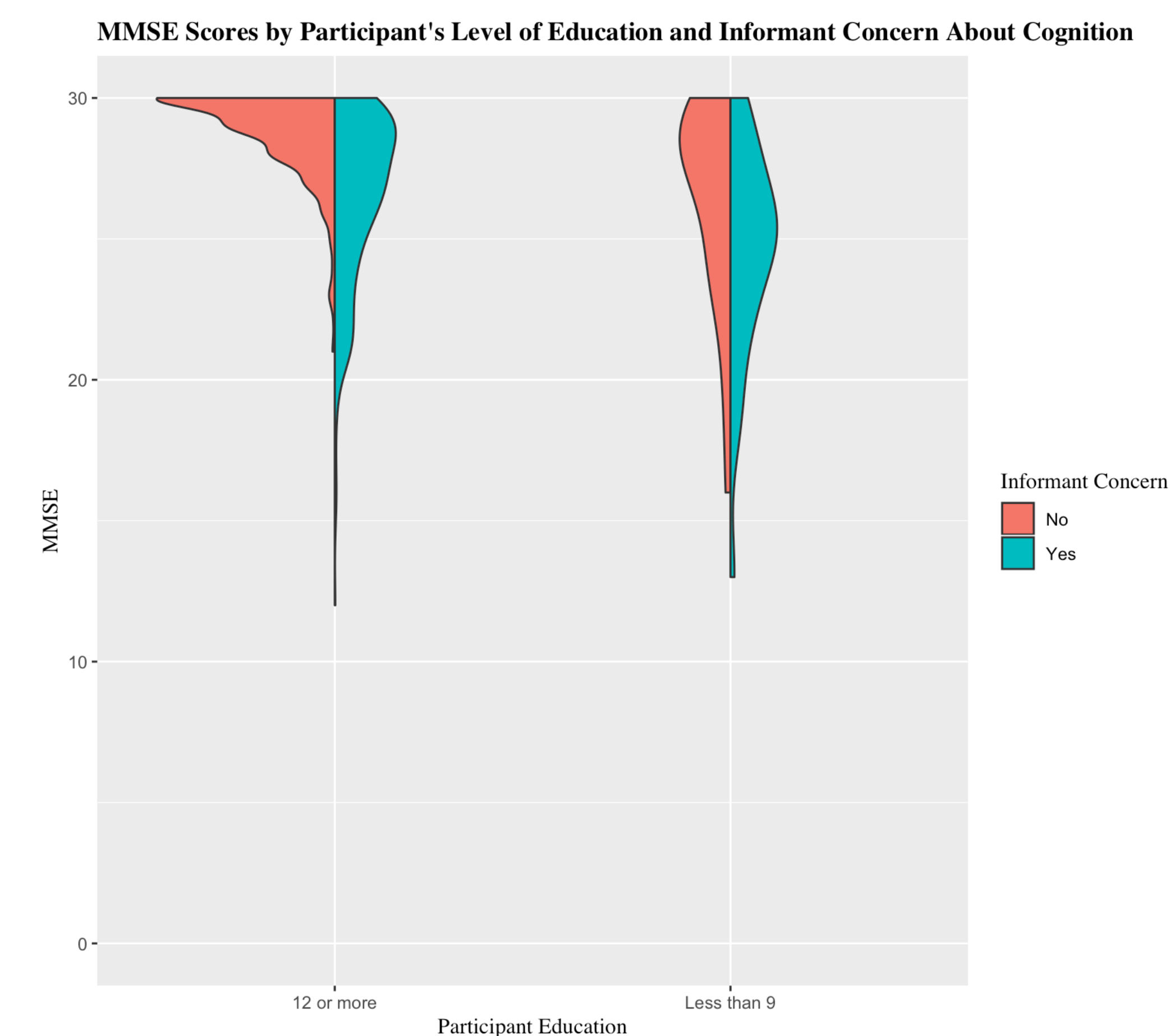
### Participant Characteristics

	High education (n=1379)	Low education (n=165)
	n (%)	n
Male sex	544 (39)	48 (29)
Hispanic	218 (16)	151 (92)
Caucasian	1154 (84)	145 (88)
English speaking	1223 (89)	19 (12)
Education	15.53	4.67
Age	74.8	74.44
	0: 552	0: 28
	0.5: 434	0.5: 46
	1+: 393	1+: 91
SP sex	488 (35)	56 (34)
SP age	57.01	53.82
SP Education	15.59	10.91
Reliable	1323 (96)	163 (99)
Informant concern	814 (59)	125 (76)
Depression on NPIQ	335 (24)	78 (47)
GDS mean	2.5	3.8
MMSE mean	24.25	18.7

For participants with at least a high school education, participants with an informant concern about cognitive changes had lower MMSE score than participants whose informants did not express concern, for participants with CDR 0, CDR 0.5, and both groups combined (p=0.02, 0.009, and <0.001 respectively). For patients with less than 9 years of education, MMSE scores were not lower for participants whose informant expressed concern for cognitive changes than for those who did not (p ns for all groups).

For participants with at least a high school education, participants with informant-reported depression had higher GDS scores than participants without, for participants with CDR 0, CDR 0.5, and both groups combined (p < 0.001 for each). For patients with less than 9 years of education, GDS scores were not higher for participants with informant reported depression for CDR 0 or CDR 0.5, but did reach statistical significance for the two groups combined (p=0.009)

## RESULTS (CONTINUED)



## DISCUSSION

In this study, we used education as a proxy for socioeconomic status and demonstrated that participants without dementia with informant-reported cognitive changes had lower MMSE scores in the high but not low education group. Participants with informant-reported depression had higher GDS scores in the high education group; for the low education group, this difference was not statistically significant for CDR 0 or 0.5 but did approach significance after combining the groups.

Given the need to increase research participation by minorities and people from disadvantaged socioeconomic backgrounds, clarifying the relative utility of informant versus objective assessments in these groups may help identify situations in which cognitively normal people could participate without a study partner. Alternatively, increased attention to the barriers of study partner participation may allow for participation by currently unavailable informants who know the participant better and can provide collateral information that is more consistent with objective testing.

## REFERENCES

1. Largent E, Karlawish J, Grill J. Study partners: essential collaborators in discovering treatments for Alzheimer's disease. *Alzheimer's Research and Therapy*. 10:101. 2018.