

The Internet-Based Conversational Engagement Trial (I-CONNECT) (www.I-CONNECT.ORG)

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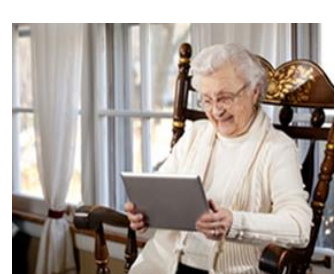


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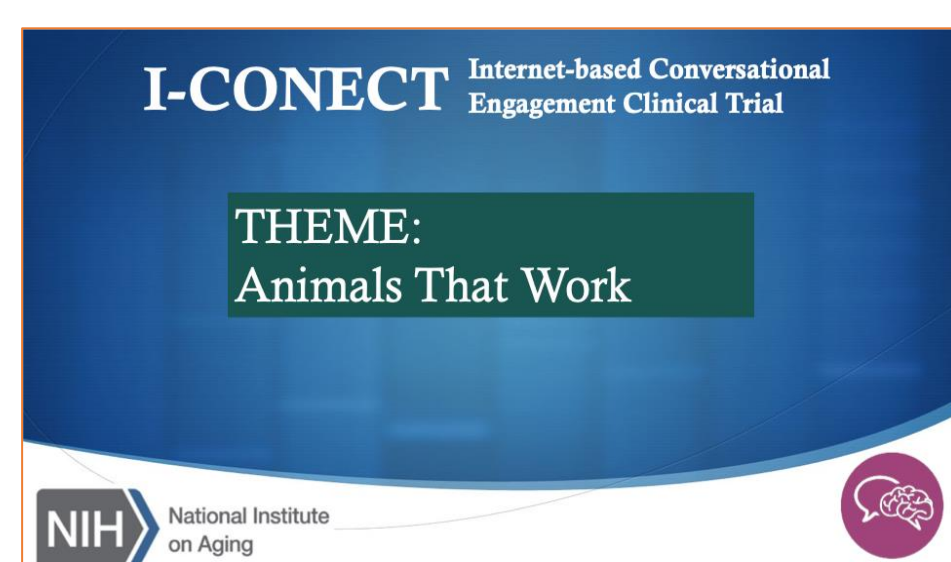
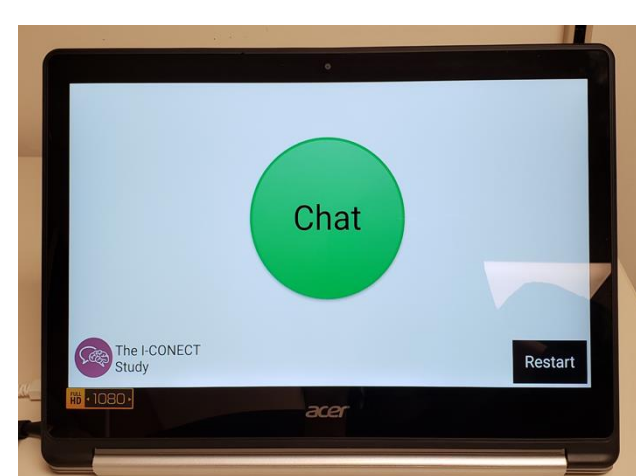
INTRODUCTION

- ❖ **Social isolation** increases dementia risk, but the mechanisms are unclear
- ❖ **Social interactions**—specifically conversational exchanges (a core component of human interactions)—may stimulate brain networks and enhance cognitive function.
- ❖ The Internet-Based Conversational Engagement Clinical Trial, (I-CONNECT, www.I-CONNECT.org, NCT02871921) delivered online semi-structured conversation sessions to socially isolated older subjects.
- ❖ A total of 186 participants were randomized 1:1 to experimental and control groups. (Mean age 80 years; 100 MCI, 86 NC (Normal Cognition))

This poster provides an overview of the project and selected key findings.



User friendly device to avoid cognitive stimulation from using internet/device



Daily conversation themes and picture prompts



The link to the topline results on cognition, emotion, and fMRI



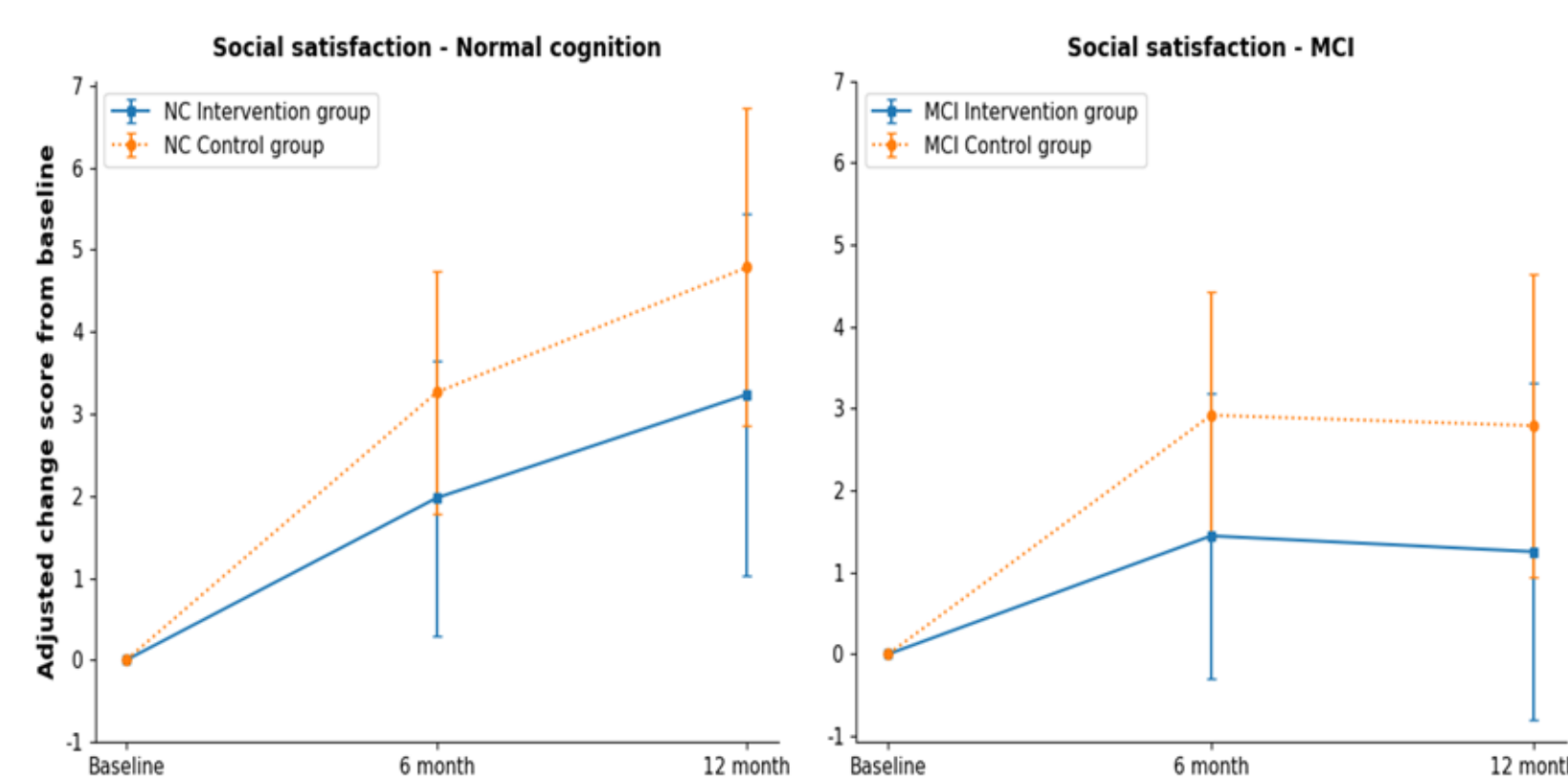
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INTERVENTION

- ❖ Recruited socially isolated subjects (defined by Lubben Social Network score and frequency of meaningful conversation per week), aged 75 and older, MCI or normal cognition (NC) (see reference (1)).
- ❖ **Experimental (intervention) group:** Participants engaged in **30 minutes of semi-structured conversation with trained interviewers** (conversational staff) 4 times per week for 6 months (high dose) and twice per week for an additional 6 months (maintenance dose). They also received a **weekly 10-minute phone check-in** to report changes in health, social engagement outside of the intervention and mood.
- ❖ **Control group:** Participants received only the **weekly 10-minute phone check-in**.
- ❖ Provided semi-structured conversations with trained staff to standardize interactions, requiring participants to understand interviewers and organize their thoughts. **Each day focused on a specific conversation theme, but once started, the conversation could flow naturally.**

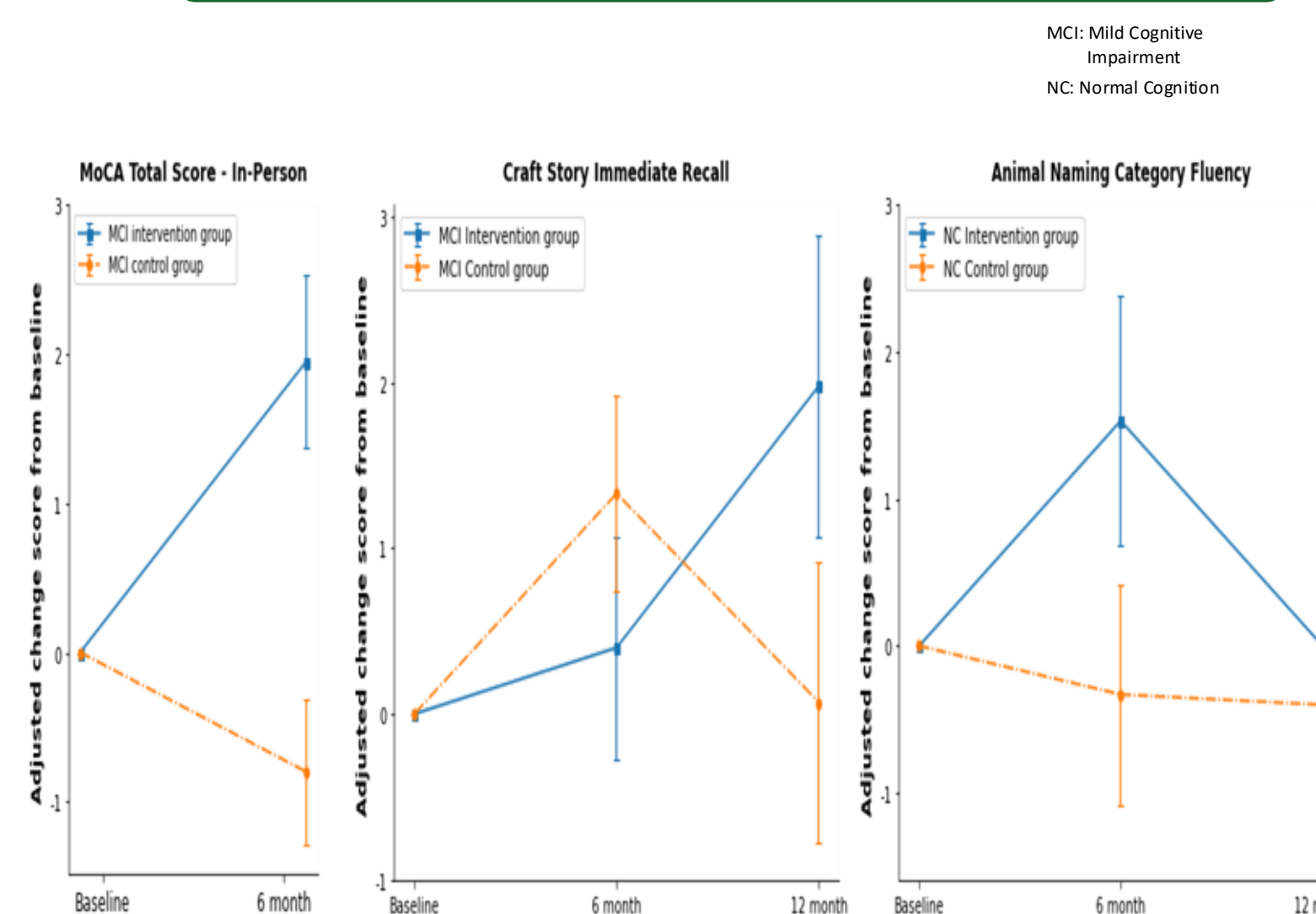
KEY FINDINGS

Emotional outcomes



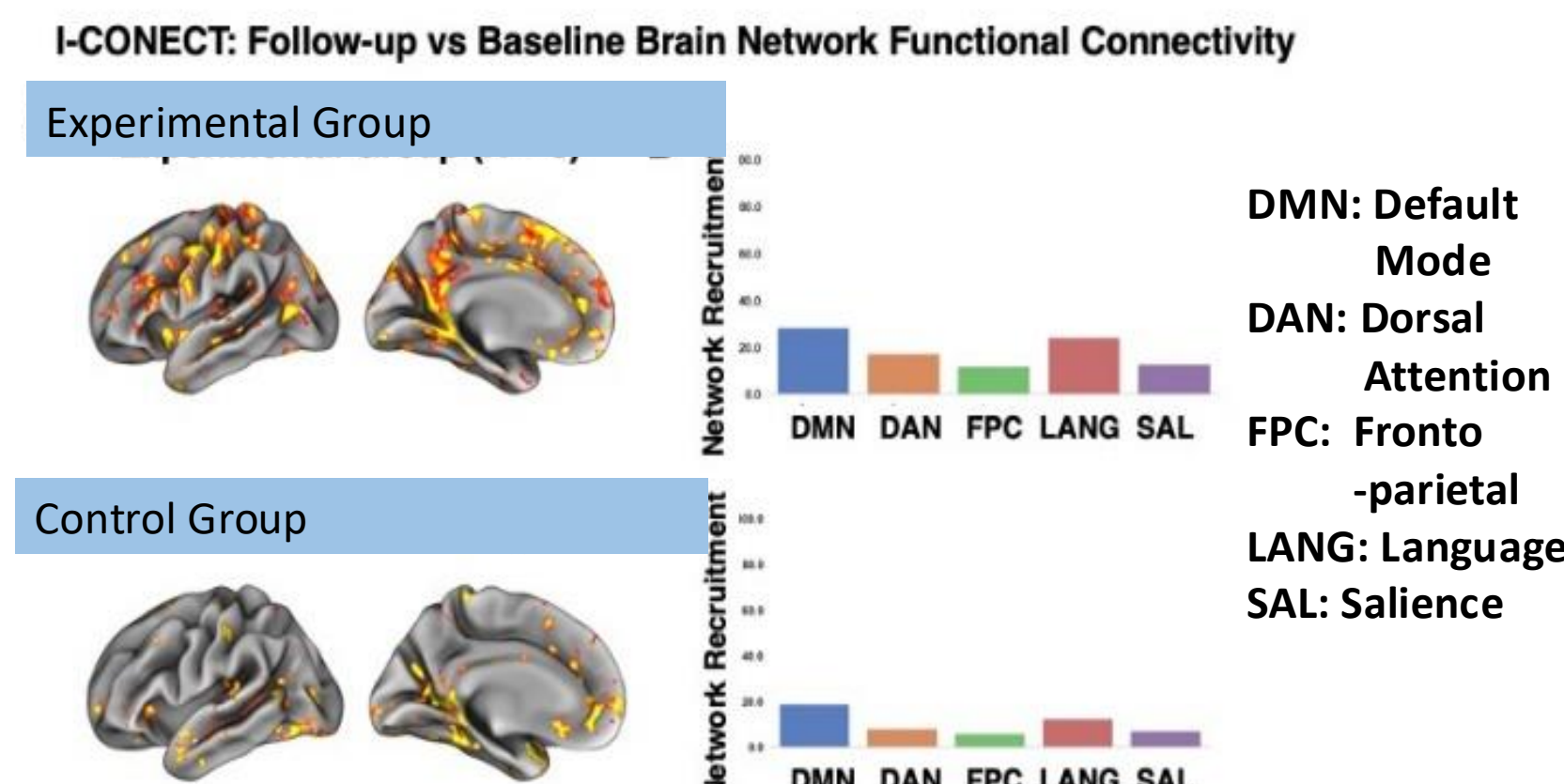
The social satisfaction factor score, assessed using the NIH Toolbox emotional battery and including loneliness, improved in both the control and experimental groups. This suggests that weekly 10-minute phone calls may effectively enhance emotional well-being. (Figure above, Reference #1)

Cognitive outcomes



The MCI experimental group showed a higher MoCA score than the control group (Cohen's $d=0.73$) at Month 6, and an increased Immediate Recall score at Month 12. The NC experimental group showed a higher semantic fluency score at Month 6. (Figure above, Reference #1)

Resting-State fMRI outcome



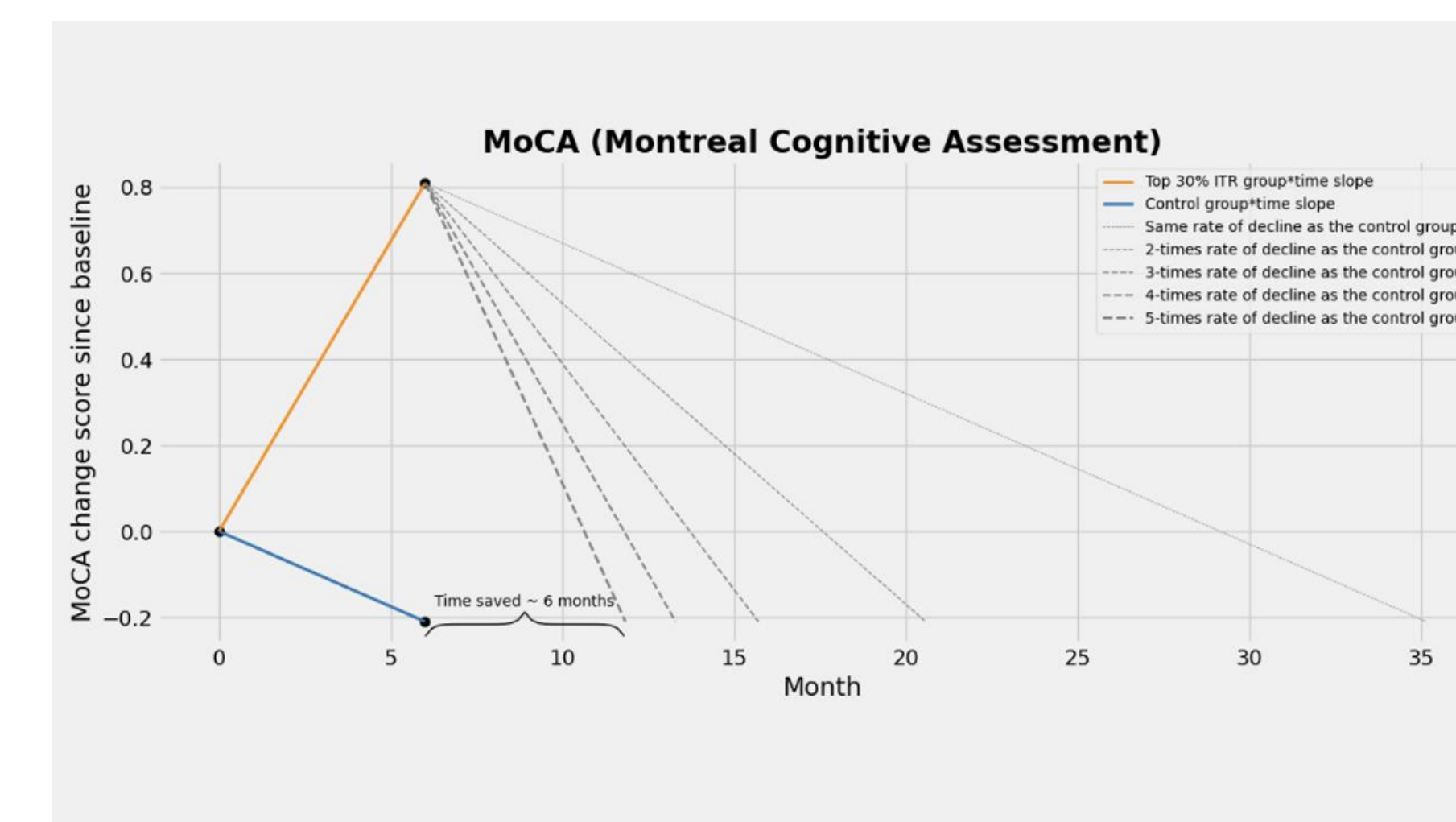
Despite a reduced sample size due to COVID-19, a statistically significant difference in DAN connectivity changes from baseline to Month 6 was observed between the experimental and control groups. (reference #1)

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- Yu K, et al., I-CONNECT intervention effects on weekly time spent outside of home and social contacts among socially isolated older adults. *Front Public Health*. 2024 Dec 16;12:1429331. doi: 10.3389/fpubh.2024.1429331. PMC11683118
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The time saved in cognitive decline

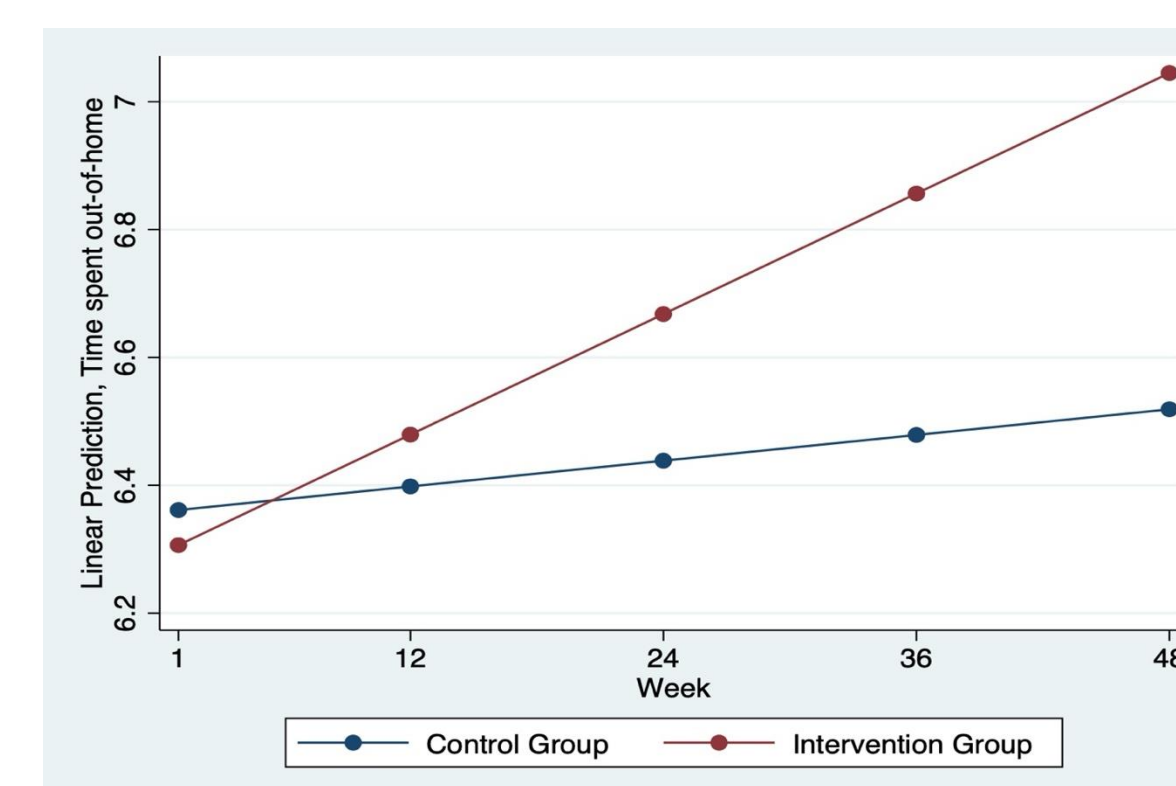


For the MoCA, participants in the top 30th percentile of response, based on Individual Treatment Response (ITR) analyses, demonstrated a delay in cognitive decline of at least six months, assuming their natural rate of cognitive decline post-intervention would be five times faster than that of the control group. (Reference #2)

Impact on Daily Activities

Research Question: Can the intervention make participants more socially active?

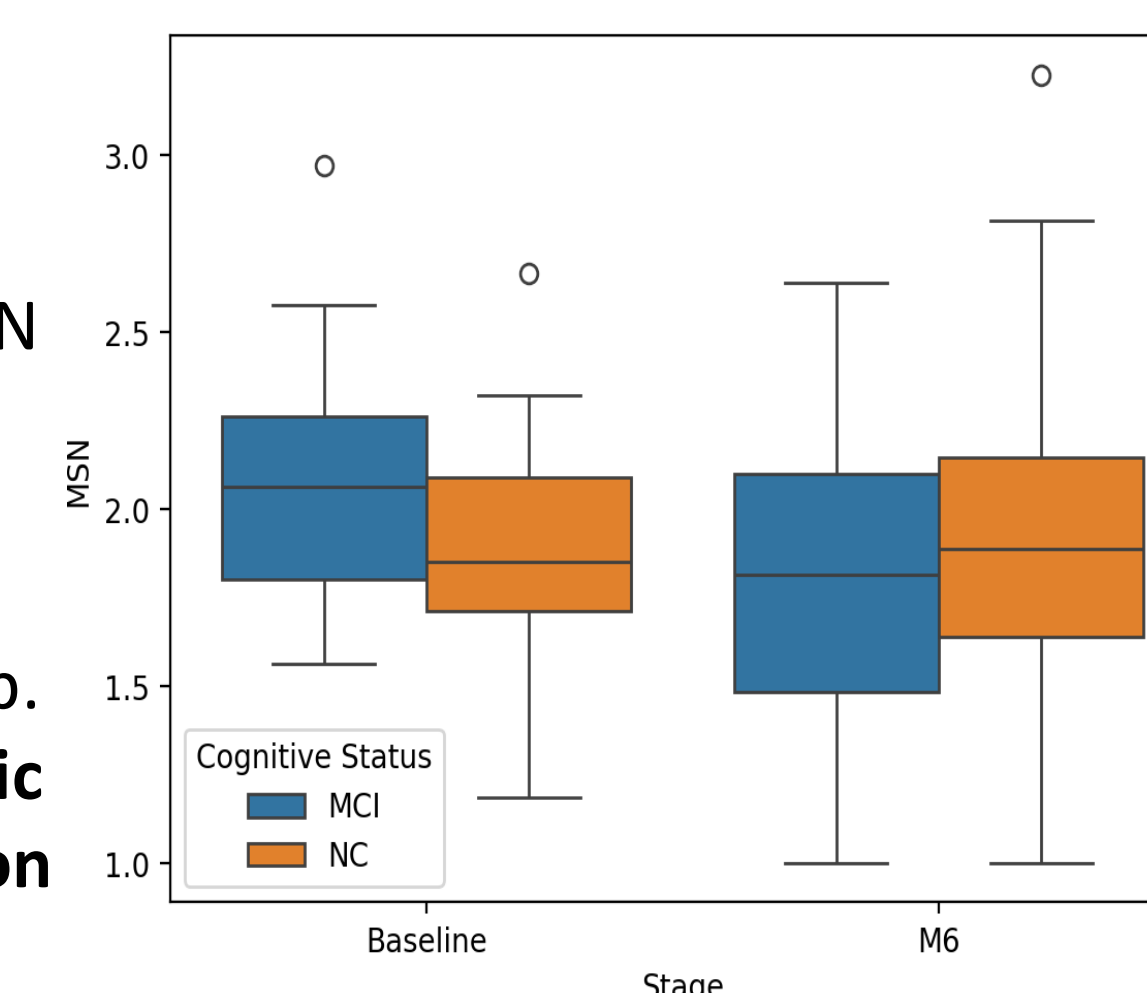
Data: Collected by weekly 10 -minute phone check-in calls



- ❖ Participants with normal cognition in the experimental group had a steeper increase in their time spent out-of-home (Figure left)
- ❖ The experimental group with MCI had an increased likelihood of *contacting friends* over time. (Reference #3)

Impact on Linguistic Characteristics

- ❖ **Semantic noise (SN)**, a natural language processing measure, was used to assess conversational patterns and intervention effects. SN decreased in the MCI group, indicating that their conversational patterns became more similar to those of the normal cognition group. This is the first study to use **linguistic measures as behavioral intervention outcomes**. (Reference #4)



CONCLUSIONS

The impact of social interactions through the I-CONNECT intervention extended beyond cognition. If implemented widely in community and clinical settings, this low-risk intervention has the potential to reduce the population burden of dementia.

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