

scores (Males: $M=1.02$, $SD=0.66$; Females: $M=1.53$, $SD=0.51$); $t(55)=-3.002$, $p=0.004$. Only females showed a significant correlation between rsFC within the withdrawal/negative affect network and negative affect scores of the PID-5 ($r=0.51$, $p<0.05$). Fisher r -to- z test showed significant gender differences ($z=-1.91$; $p=0.03$, 1-tailed) in correlations coefficients representing the relationship between rsFC of the withdrawal/negative affect network and negative affect (PID-5 subscale). **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Preliminary findings suggest that the relationship between neural networks mediating emotion regulation and negative affect is only found in females. These results provide valuable data to inform personalized chemical dependency treatment that targets emotion regulation specific to females.

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Resting Functional Connectivity of Networks Associated with Preoccupation in Alcohol Use Disorder Predicts Time to Relapse

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ABSTRACT IMPACT: Our research has the potential to impact human health by identifying a neural network that can be used to predict time to relapse in individuals with alcohol use disorder. **OBJECTIVES/GOALS:** Preoccupation towards alcohol use (e.g. craving, rumination, and poor executive control) is a maladaptive behavior associated with relapse risk. We investigated whether alterations in resting state networks known to mediate preoccupation could predict time to relapse in alcohol use disorder (AUD). **METHODS/STUDY POPULATION:** 50 participants with alcohol use disorder (AUD) (Age: $M=41.76$, $SD=10.22$, 19 females) were recruited from an addiction treatment program at ~2 weeks of abstinence. fMRI data were preprocessed with the Human Connectome Project pipeline. Strength of resting state functional connectivity (RSFC) within two networks known to mediate the 'Preoccupation go' (PG) and 'Preoccupation stop' (PS) stages of addiction were calculated. T-tests were conducted to compare RSFC between subsequent abstainers and relapsers (after 4 months). Linear regressions were conducted to determine whether RSFC (of PG and PS networks) can predict time to relapse. Craving measures were included in the model. **RESULTS/ANTICIPATED RESULTS:** 19 AUD relapsed during the 4-month follow-up period. There were no RSFC group effects (subsequent abstainers and relapsers) in the PG or PS networks. Number of days to relapse could be predicted by PG RSFC ($F(1,17)=14.90$, $p=0.001$, $r^2=0.47$). Time to relapse increased by 13.19 days for each PG RSFC unit increase. Number of days to relapse could be predicted by PS RSFC ($F(1,17)=9.39$, $p=0.002$, $r^2=0.36$). Time to relapse increased by 12.94 days for each PS RSFC unit increase. After adding a self-report craving measure (i.e. Penn Alcohol Craving Scale) in the prediction model, both PG and PS RSFC still significantly predicted time to relapse. Craving metric did not predict time to relapse. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** RSFC in

preoccupation networks during short-term abstinence predicted time to relapse. These preliminary findings highlight promising targets for AUD neuromodulation interventions aimed to reduce relapse. Future larger scale studies that examine the effects of covariates and mediators are needed.

Commercialization/Entrepreneurship

Digital Health/Social Media

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Adapting a global telehealth model to solve U.S. healthcare needs: age-related hearing loss as a test market

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ABSTRACT IMPACT: We are adapting a global telehealth platform and model of care to the U.S. context in order to solve the problem of undertreatment of age-related hearing loss and, in turn, facilitate healthy aging and social engagement among older adults. **OBJECTIVES/GOALS:** Intelhealth is a nonprofit startup that provides medical care to last-mile populations in India by equipping frontline health workers with an open-source digital assistant and telemedicine platform. Here, we explore how this technology and model of care might be adapted to address health inequities in the context of the U.S. healthcare system. **METHODS/STUDY POPULATION:** We first sought to identify a specific healthcare need that we could address as a case study on applying the Intelhealth model more broadly in the U.S. context. We began with a needs assessment, wherein we conducted primary ethnographic research, expert interviews, and literature review to identify problems in the general areas of health disparities, community health workers, and telemedicine accessibility. We then scored each need on clinical impact, feasibility, business potential, and strategic fit. After a top need was selected, a root cause analysis was performed. Brainstorming and solution concepting will be followed by prototyping, iterative design with primary stakeholder feedback, usability testing, and finally implementation and validation of the solution. **RESULTS/ANTICIPATED RESULTS:** Of 106 needs, the most highly scored was undertreatment of age-related hearing loss (ARHL). The third most common chronic condition in the U.S., ARHL presents a significant barrier to healthy aging and the single largest modifiable risk factor for dementia; yet only 15% of those with ARHL regularly use hearing aids. Thus, a large market segment - nearly 30 million Americans - is underserved by the current hearing care paradigm. Root cause analysis revealed that the primary reasons for hearing aid non-use include stigma around aging, denial of hearing loss, poor awareness of resources, and insufficient education around proper use and maintenance. These barriers, being primarily sociocultural in nature, may be optimally addressed by community health workers, making ARHL an ideal fit for the Intelhealth model. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** We have identified ARHL as an