subjects were classified as having MetS if they had ≥3 of the following: waist circumference ≥40 inches for men or ≥35 inches for women, triglyceride ≥150 mg/dL, HDL-C for men ≤40 mg/dL; women ≤50 mg/dL, pre-hypertension, or fasting glucose ≥110 mg/dL. We used multiple logistic regression in STATA 14 survey module to examine the relation between MetS components and CVD adjusting for age, gender, race/ethnicity, education, smoking, alcohol, albuminuria, glomerular filtration rate, C-reactive protein, uric acid and white blood count. To assess the racial/ethnic variation, we examined the same model in each race/ethnic group. RESULTS/ANTICIPATED RESULTS: Of the 3212 subjects, 78% were Whites, 10% were Blacks, and 15% had CVD. MetS components, CVD, and uric acid varied significantly by race/ethnicity ($p < 0.05$). In the multivariate model, HDL-C level [odds ratio (OR) = 1.5; 95% confidence interval (CI) = 1.1–2.0], triglyceride level (OR = 2.0; CI = 1.4–2.9), and elevated uric acid (OR = 1.4; CI = 1.1–1.9) were independently related to CVD ($p < 0.05$). While CVD was independently related to HDL-C, triglyceride, and elevated uric acid in Whites ($p < 0.05$), it was associated with pre-hypertension and triglyceride in Blacks ($p < 0.05$) and no predictors in Hispanics ($p > 0.05$). DISCUSSION/SIGNIFICANCE OF IMPACT: Elevated uric acid, HDL-C, and triglyceride levels are significant independent predictors of CVD among population with MetS. These predictors varied by race/ethnicity. Health care providers should be vigilant in the management of MetS components and control of uric acid level in each racial/ethnic group to prevent the CVD risk among the population with MetS.

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Scrambler therapy: Potential new treatment for central neuropathic pain?

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OBJECTIVES/SPECIFIC AIMS: Central neuropathic pain is a severely disabling consequence of conditions that cause tissue damage in the central nervous system (CNS) such as multiple sclerosis (MS) and neuromyelitis optica (NMO). It impacts mood, mobility and quality of life, but is often refractory to common treatments. Scrambler Therapy is an emerging non-invasive pain modifying technique that utilizes transcutaneous electrical stimulation of nociceptive fibers with the intent of re-organizing maladaptive signaling pathways. It has been examined for treatment of peripheral neuropathy with favorable safety and efficacy outcomes, but its use in central neuropathic pain has not been reported. We aim to explore acceptability and safety of Scrambler Therapy through a Phase II sham-controlled trial in NMO, and describe its use to date in central neuropathic pain. METHODS/STUDY POPULATION: Two patients with longstanding central neuropathic pain who failed multiple drug trials were treated as proof-of-concept, supporting the recent launch of a Phase II randomized controlled trial in NMO where patients receive 10 daily Scrambler treatments versus sham. Safety and acceptability from those recruited to date will be reported. Acceptability is measured by adherence and responses to patient surveys. RESULTS/ANTICIPATED RESULTS: We plan to recruit 22 patients, randomized 1:1 into experimental and sham arms. We will present acceptability and safety data for Scrambler use in patients with NMO who have been recruited by the time of this conference, as well as effectiveness data from two cases that have been completed outside of the trial. One case involved a 65-year-old woman with a 4-year history of central neuropathic pain following a C3-C5 TM. Her numerical rating scale (NRS) pain score was reduced to 0/10 from a baseline score of 5/10. The second case involved a 52-year-old woman with a 13-year history of pain following a medullary cavernoma bleed. Her baseline NRS pain score was 9/10, which was reduced to 0.5/10 post-treatment. No adverse events were reported. Pain relief was sustained at 30 days' post-treatment. DISCUSSION/SIGNIFICANCE OF IMPACT: We are investigating the acceptability and efficacy of Scrambler Therapy for central neuropathic pain treatment in NMO. Proof-of-concept was supported by two patients whose pain scores improved considerably more in response to this treatment than with previous pharmacologic and non-pharmacologic interventions. Results from this trial may support future investigation in other disorders that cause damage in the CNS, including MS and TM.

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Subjective, physiological activation and habituation, and response to written trauma narrative exposure

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OBJECTIVES/SPECIFIC AIMS: Emotional processing theory and some observations suggest that activation of subjective and physiological distress during therapeutic exposure and habituation across exposure sessions are key to improvement. This study sought to determine whether initial subjective and physiological activation and between-session habituation would predict PTSD symptom reduction after a series of written trauma narrative exposure sessions. METHODS/STUDY POPULATION: In total, 29 urban-residing African-American participants with PTSD participated in four 30-minute writing sessions. Writing sessions 1 and 2 were 12 hours apart and session 3 and 4 were performed 1 week later, also 12 hours apart. PTSD symptoms were measured at baseline, after session 2, and 1 week after all 4 writing sessions with the Clinician Administered PTSD Scale. During each session, Subjective Units of Distress Scores (SUDS) were assessed 4 times and heart rate was measured continuously. RESULTS/ANTICIPATED RESULTS: Participants exhibited PTSD symptom improvement and habituation of subjective distress, but not physiological arousal, across writing sessions. First session baseline-corrected SUDS maximum and SUDS decrease from the initial to the final writing session were both positively associated with symptom improvement. DISCUSSION/SIGNIFICANCE OF IMPACT: Increased subjective, but not physiological, distress in the first exposure session and diminished subjective distress across sessions may be a helpful marker of emotional processing for clinicians and predictor of symptom improvement after written trauma narrative exposure.

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Susceptibility to social influence is associated with alcohol self-administration and subjective alcohol effects

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OBJECTIVES/SPECIFIC AIMS: Peer groups are one of the strongest determinants of alcohol use and misuse. Furthermore, social influence plays a significant role in alcohol use across the lifespan. One of the factors that most consistently predicts successful treatment outcomes for alcohol use disorders is one's ability to change their social network. However, the concept of social influence as defined by suggestibility or susceptibility to social influence has not yet been studied as it relates to drinking behavior and acute subjective response to alcohol. Our objective was to examine the relationship between suggestibility and alcohol consumption and responses, using an intravenous alcohol self-administration (IV-ASA) paradigm in social drinkers. METHODS/STUDY POPULATION: Healthy, social drinkers (n = 20) completed a human laboratory session in which they underwent the IV-ASA paradigm. This consisted of an initial 25-minute priming phase, where participants were prompted to push a button to receive individually standardized IV alcohol infusions, followed by a 125-minute phase during which they could push the button for additional infusions. IV-ASA measures included the peak and average breath alcohol concentration (BrAC) and number of button presses. Subjective responses were assessed using the Drug Effects Questionnaire (DEQ) and Alcohol Urge Questionnaire (AUQ) collected serially during the session. Participants completed the Multidimensional Iowa Suggestibility Scale (MISS) to assess suggestibility. The Alcohol Effects Questionnaire (AEFQ) was used to assess alcohol expectancies and the Timeline Followback questionnaire measured recent drinking history. RESULTS/ANTICIPATED RESULTS: After controlling for drinking history, greater suggestibility significantly predicted greater average BrAC, greater peak BrAC, and a greater number of button presses ($p = 0.03$, $p = 0.02$, $p = 0.04$, respectively) during the early open bar phase. Suggestibility significantly predicted subjective alcohol effects following the priming phase which included "Feel," "Want," "High," and "Intoxicated" and was trending for "Like" ($p = 0.02$, $p = 0.03$, $p = 0.01$, $p = 0.03$, $p = 0.054$, respectively) as well as AUQ ($p = 0.03$). After controlling for drinking history, suggestibility significantly predicted "Feel," "Like," "High," and "Intoxicated" peak scores during the open bar phase ($p = 0.03$, $p = 0.009$, $p = 0.03$, $p = 0.03$, respectively). There was no association between suggestibility and "Want More" alcohol. Suggestibility was positively associated with three positive expectancies (global positive; $p = 0.04$; social expressiveness; $p = 0.005$, relaxation; $p = 0.03$), and one negative expectancy (cognitive and physical impairment; $p = 0.02$). DISCUSSION/SIGNIFICANCE OF IMPACT: These results indicate that social drinkers that were more suggestible had higher alcohol consumption, greater acute subjective response to alcohol, and more positive alcohol expectancies. As such, susceptibility to social influence may be an important determinant of alcohol consumption, and may provide insight