injury, but functional activation directly associated with metacognitive processing has yet to be investigated. This event-related functional magnetic resonance imaging (fMRI) study aimed to document differences in functional activation between adults with TBI and neurotypical peers when completing metacognitive confidence judgments.
Participants and Methods: 16 adults with moderate to severe TBI and 10 healthy adults (HCs) completed a metacognitive task while in the fMRI scanner. All participants were exposed to target slides with polygons arranged in various positions, then asked to identify the target slide from a group including 3 other distractor slides. Following each response, participants provided a metacognitive retrospective confidence judgment (RCJ) by rating their confidence that the answer they provided was correct. *Meta d'*, a signal-detection based metric of metacognitive accuracy, was calculated. FSL FEAT was used for processing and analysis of the imaging data. Contrasts were created to model activation that was greater when RCJs were made compared to target recognition, mixed effects modeling was then used to investigate group differences. Cluster based thresholding set to $z>2.3$, $p<0.01$ was used for multiple comparisons correction.
Results: Healthy controls performed significantly better on the target identification task ($p<0.01$), and were faster at making RCJs ($p=0.03$). Individuals with TBI had greater *meta d'* scores ($p=0.03$). Significant activation beyond what was present during target recognition (RCJ>recognition) was found in left supramarginal gyrus, left posterior cingulate, and left cerebellum when individuals with TBI made RCJs, while HCs showed significant activation in the left precuneus, and bilateral superior temporal gyri. Individuals with TBI demonstrated more activation in the lateral occipital cortex bilaterally and the left cerebellum than HCs when completing RCJs. HCs presented with more activation in the left supramarginal gyrus than the TBI group when making RCJs.
Conclusions: The areas of activation present in both the TBI and HC groups are consistent with previous imaging findings from studies of healthy samples. Interestingly, two structures previously implicated in self-directed cognition and consciousness, the posterior cingulate and precuneus, were differentially activated by the groups. The lack of a common network between the two groups suggests that survivors may rely on separate neural substrates to facilitate metacognition after injury. The TBI group was found to recruit more functional areas when completing the RCJs. These findings, paired with the behavioral data indicating metacognitive performance differences, suggests that neural recruitment may occur after injury to allow for survivors to engage in making metacognitive judgments. Future qualitative investigations of the metacognitive judgments are needed to determine the compensatory nature of this post-injury recruitment.

Categories: Acquired Brain Injury (TBI/Cerebrovascular Injury & Disease - Adult)
Keyword 1: metacognition
Keyword 2: neuroimaging: functional
Keyword 3: traumatic brain injury
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15 Examining Unmet Needs in a Brain Injury Sample, Consisting of Various Races/Ethnicities, Referred to Resource Facilitation

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Objective: To investigate differences of the perceived unmet needs in a post-acute brain injury sample when referred to Resource Facilitation (RF) among various race/ethnic groups.
Participants and Methods: The methodology utilizied within this study consisted of a retrospective chart review, which was sourced from a clinical database serving chronic outpatients in the Midwest region. The main outcome measure was the Service of Unmet Needs & Service Use (SUNSU). The sample consisted of N = 455 subjects, which included a small sample size of Hispanics (N=7). Therefore, African American and Hispanic groups were combined for a total minority sample (N=84). Clinical disorders included within the study was an ABI from either stroke, anoxic injury, ruptured

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aneurysm, or tumor resection surgery. Eligibility criteria included participants' admission into a RF program, a vocational goal, and a diagnosis of a moderate to severe TBI or other ABI. Lastly, key sociodemographic features included age, race, ethnicity, education, and sex.
Results: Significant differences were found between ethnic groups (white non-Hispanics and minority group) in terms of years of education (p=<.01). White non-Hispanics had higher education (M=13.39, SD=2.23), reported significantly more rural addresses (40.2%, p=<.01), and had private insurance coverage more frequently than the minority group (33.7%, p=<.01). The full model was statistically significant, R2=.077 = F(4,450) = 9.387, p<.0001; adjusted R2 = .069. The addition of ethnicity led to a statistically significant increase in R2 of .019, F(1,450) =9.025, p<.0005.
Conclusions: Ethnicity was found to be a predictive factor for greater unmet needs even after controlling for insurance, employment status, and urbanicity. It is currently unknown RF's success rate in providing culturally competent services to different racial/ethnic groups, which consider factors such as primary language spoken, immigration status, and additional ethnocultural factors that could deter accurate reporting of unmet needs by minoritized groups. Future studies should investigate barriers in referring and meeting eligibility for this program and analyze post-treatment data to determine if the impact of racial, geographic, and insurance disparities is mitigated with RF treatment.

Categories: Acquired Brain Injury (TBI/Cerebrovascular Injury & Disease - Adult)
Keyword 1: brain injury
Keyword 2: traumatic brain injury
Keyword 3: diversity
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16 Set-Shifting as a Predictor of Adaptive Functioning in Individuals with Acquired Brain Injury

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Objective: Cognitive flexibility, typically measured using neuropsychological tasks of set-shifting, has been associated with mental and physical health, social relationships, resilience, and overall quality of life (Diamond, 2013; Chen et al., 2014; Davis et al., 2010; de Abreu et al., 2014; Genet et al., 2011). Previous research has found conflicting results regarding the relationship between set-shifting and various measures of functional outcomes in individuals with traumatic brain injury (Allanson et al., 2017). The present study examined the relationship between cognitive flexibility and adaptive functioning in individuals with acquired brain injuries (ABI).
Participants and Methods: Participants in this research are adults (n = 116) with severe, chronic ABI who completed a neuropsychological evaluation through Bancroft Neurorehab between 2012-2022. Participants ranged in age from 20.4 - 67.8 years (M = 45.8). Individuals included in data analysis completed Trails A and B, Wide Range Achievement Test, Fourth Edition (WRAT-4) Word Reading, and Texas Functional Living Scale (TFLS). Set-shifting ability was measured using Trails B and adaptive functioning was measured using the TFLS. Word reading ability, measured using the WRAT-4, was included as a covariate to account for the impact of word reading difficulties on Trails B performance.
Results: A simple linear regression was conducted to examine if Trails B T-score (M = 24.7) and WRAT-4 Word Reading Standard Score (M = 87.8) predicted TFLS Total T-score (M = 35.8). The overall regression model was statistically significant (R2 = .351, F(2, 113) = 32.0, p < .001). It was found that lower performances on Trails B ($\boldsymbol{\beta}$ = .272, p <.001) and WRAT-4 Word Reading ($\boldsymbol{\beta}$ = .189, p <.001) both significantly predicted a lower TFLS Total T-score.
Conclusions: Set-shifting and word reading ability significantly predicted the overall adaptive functioning score on the TFLS which adds to a body of literature that suggests that the ability to think and behave flexibly affects functional aspects of everyday living. These findings are consistent with previous literature regarding the association between cognitive flexibility and adaptive functioning in the general population, and these results add to the growing body of research on cognitive flexibility in individuals with brain injury. Clinicians may use an individual's set-shifting performance to estimate and further assess potential difficulties in

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