

**Categories:** Language and Speech Functions/Aphasia

**Keyword 1:** language: second/foreign

**Keyword 2:** bilingualism/multilingualism

**Keyword 3:** naming

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## 69 Verbal Comprehension and PTSD: A Glimpse into Trauma and Resilience

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**Objective:** Many of those who experience the trauma and abuse of sex trafficking also struggle with a variety of physical and mental health issues, a major one of those issues being posttraumatic stress disorder (PTSD). In this study, we explored the relationship between verbal comprehension and a PTSD diagnosis to see if this aspect of intelligence might be stronger for individuals without a diagnosis of PTSD.

**Participants and Methods:** Participants included 22 adolescent girls between the ages of 14 and 18 who had experienced sex trafficking. Participants were referred to Fuller Psychological and Family Services for learning difficulties, where they were given comprehensive clinical neuropsychological evaluations, including a Wechsler Intelligence Scale (WISC or WAIS) and a screening for PTSD. WISC or WAIS Full Scale IQ ranged from 75 to 115 ( $M = 85.1$ ,  $SD = 11.2$ ).

**Results:** Contrary to the hypothesis that those without PTSD would have higher verbal comprehension scores than those with PTSD, the results indicated no difference between the two groups,  $t(23) = -.86$ ,  $p = .40$ . However, verbal comprehension scores across both groups were significantly below the normal range, suggesting a relationship between trauma and verbal comprehension.

**Conclusions:** The diagnosis of PTSD may impact intelligence in ways not anticipated for this population, or perhaps our method of diagnosing PTSD did not adequately nuance the varying responses to trauma. By further exploring the relationships between Verbal

Comprehension Indexes and markers of resilience, we may be able to better understand the characteristics of resilience demonstrated by those who become involved in prostitution.

**Categories:** Language and Speech Functions/Aphasia

**Keyword 1:** post-traumatic stress disorder

**Keyword 2:** verbal abilities

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## 70 The Effect of Executive Functioning on Predicting Health Literacy in a Memory Disorders Clinic

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**Objective:** Health literacy is the degree to which an individual is able to attain, process, and understand information, skills, and services required to make informed decisions. Limited health literacy is a risk factor for problems understanding health information and adhering to medical instructions, underuse of preventive services, increased hospitalizations and associated medical costs, and higher mortality rates. Recognizing individuals with reduced health literacy can be difficult given demographic information such as age or years of education do not reliably reflect an individual's health literacy level. Cross-sectional studies have identified limited health literacy as associated with lower scores on cognitive tests measuring memory, executive function (EF), and processing speed, independent from the influence of demographic variables (e.g., age, race, education). This study assessed the association of objective measures of executive functioning and health literacy when controlling for premorbid estimated intellectual functioning and relevant demographic variables.

**Participants and Methods:** A sample of 44 adult patients (20 Male; 24 Female) referred for neuropsychological evaluation for memory complaints who were administered the Test of Premorbid Functioning (TOPF), and multiple measures of EF including the Trail Making Test – Part B (TMT-B), Stroop Color and Word Test

(SCWT), and Letter (FAS) and Semantic (Animals) Fluency as part of part of a larger standardized battery. Patients were also administered the Short Assessment of Health Literacy-English (SAHL-E). All included patients had <2 performance validity test failures. The sample was 50% non-Hispanic Black, 31.8% non-Hispanic White, 15.9% Hispanic, 2.3% Asian/Pacific Islander, and 54.5% female. Diagnostically, 50.9% of the sample were cognitively normal, 36.4% had mild cognitive impairment, and 15.9% had dementia.

Two multiple regressions were conducted to evaluate (1) the predictive power of EF on the SAHL-E, and (2) the moderating impact of estimated premorbid IQ and demographics via the TOPF on the relationship between EF and SAHL-E.

**Results:** The first regression was not significant ( $p=.168$ ) with FAS as the only independent predictor of SAHL-E performance ( $\beta=.387$ ,  $p<.05$ ). The overall model was significant with the addition of the TOPF ( $p<.001$ ). FAS accounted for 29% ( $\beta=.336$ ,  $p<.05$ ) of the variance in SAHL-E when controlling for TOPF and other measures of EF.

**Conclusions:** These results indicate that novel generativity is a significant predictor of health literacy beyond the influence of estimated premorbid intelligence and demographic factors. Importantly, these findings suggest that broadly speaking EF abilities have minimal impact on health literacy, although reduced verbal generativity to letter cues is associated with reduced health literacy. Identification of at-risk populations such as individuals with limited health literacy is clinically important and can make way for early intervention. Health information targeted at this at-risk population should go beyond vocabulary and more specifically reduce the burden on verbal fluency.

**Categories:** Language and Speech Functions/Aphasia

**Keyword 1:** fluency

**Keyword 2:** language

**Keyword 3:** premorbid functioning

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## 71 Neuropsychological Intervention for Developmental Stuttering using Delayed Auditory Feedback Application

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**Objective:** Brain science demonstrates that people who stutter (PWS) exhibit insufficient activation in the auditory speech area of the left hemisphere (Kikuchi, et al. 2011 ; Garnett, et al. 2018). In this study, we reported the auditory brainstem response of PWS: in PWS with moderate and severe impairment, significantly longer interpeak latencies (IPLs) between waves I and V (IPL [I–V]) of the right ear than those of the left ear were observed. However, in PWS with mild impairment, the IPLs (I–V) of the left ear were significantly longer than those of the right ear (Anzaki et al., 2020). We considered that the differences in the IPLs (I–V) between the right and left ears cause monitoring disturbance in communication, which results in developmental stuttering. It has been reported that stuttering was improved by delayed auditory feedback (DAF) (Stromsta, 1956; Sakai, 2008). Thus, we improved the DAF system and developed an application that can be used by PWS to listen to their own voices with no differences in the IPLs (I–V) between their left and right ears. We verified the effectiveness of this application.

**Participants and Methods:** This study included five male adults with developmental stuttering (ADSs), with a mean age and handedness index of 36 years and 84, respectively. The application was adjusted so that the IPLs (I–V) of the left and right ears were the same. For example, one ADS showed that the IPL (I–V) of their right ear was 0.5 msec longer than that of their left. Subsequently, the application was adjusted so that the IPL (I–V) of his left ear would be delayed by 0.5 msec. We asked the participants to use the application for six months when free talking and reading aloud. Using the Japanese Standardized Test for Stuttering (JSTS) (Ozawa, et al. 2013), we compared their disfluencies with and without the application.

**Results:** As per the JSTS, the stuttering severity in all participants improved. Case 1, who had severe impairment (level 5), showed a moderate improvement (level 4), Cases 2 and 3, who had moderate impairment (level 4), showed a mild