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29 Quality of Life in Younger and Older Adults with Epilepsy

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Objective: Epilepsy is the third most common neurological disorder among older adults, and as adults are living longer, the incidence of epilepsy is increasing (Kun Lee, 2019). The purpose of this study is to examine 1. differences in quality of life (QOL) between older and younger adults with medically intractable epilepsy and 2. the impact of seizure frequency, seizure duration, depression, sex, and marital status on QOL. Given differences in the prevalence rates of depression between men and women and importance of depression in QOL, we predicted that sex and marital status would moderate the effect of depression on total QOL (TQOL).

Hypothesis I: Compared to younger adults, older adults with epilepsy will report lower TQOL scores and lower scores on subscales measuring energy/fatigue, cognition, and medication effects.

Hypothesis II: Seizure variables and depression will significantly account for TQOL scores in both groups (younger and older) above demographic variables (sex, marital status, and education).

Hypothesis III: Sex will moderate the effect of depression in both groups and marital status will moderate the effect of depression only in the older adults.

Participants and Methods: Participants were 607 adults (> 18 years old) who were prospective candidates for epilepsy surgery and underwent a comprehensive neuropsychological evaluation including QOL assessment using the Quality of Life in Epilepsy Scale-31 (QOLIE-31). Individuals were grouped by older (> 50 years old; N = 122) and younger adults (< 50 years old; N = 485). Hierarchical regression was used to examine the proposed associations.

Results: Hypothesis I: In contrast to our hypothesis, a one-way ANOVA did not reveal significant differences between the older and younger groups on the QOL subscales, TQOL, or depression.

Hypothesis II: For older adults, longer seizure duration was associated with better TQOL; bivariate correlations showed no evidence of statistical suppression. Higher depression scores were associated with worse TQOL. Overall, the model accounted for 39.6% of variance among older adults. For younger adults, only depression was a significant predictor of TQOL wherein higher depression scores were associated with worse TQOL. Overall, the model accounted for 36.1% of the variance among younger adults.

Hypothesis III: There was no moderation between depression and marital status in older or younger adults ($b = -.009$, $p > .05$). There was multicollinearity evidenced by VIF (variance inflation factor) greater than 10, so the associations between depression and sex could not be examined.

Conclusions: Overall, there were no significant differences between QOL in younger versus older adults. Greater depression symptoms were associated with lower TQOL in both groups. Longer seizure duration was a significant predictor of better TQOL in older adults only, perhaps indicating better adjustment to having a seizure disorder with longer duration of epilepsy. Lastly, marital status did not moderate the effects of depression on TQOL and the moderating effects of sex on TQOL could not be assessed due to multicollinearity. Study limitations include dichotomizing the sample into these particular age groups and the heterogeneity of seizure types.

Categories: Epilepsy/Seizures

Keyword 1: epilepsy / seizure disorders

Keyword 2: quality of life

Keyword 3: depression

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31 Item and Associative Visual Memory in Presurgical Temporal Lobe Epilepsy Patients

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Objective: Patients with temporal lobe epilepsy (TLE) commonly show memory deficits on neuropsychological tests. The BVMT-R is a widely used test of visual learning and memory that involves accurately reproducing an array of figures in the correct spatial location. The present study examined performance processes of visual memory in presurgical patients with TLE, including item (i.e., accuracy) and associative memory (i.e., location), which have been shown to be dissociable in studies of visual memory in other neurologic populations.

Participants and Methods: Participants included nine patients with left TLE (67% female; 67% left-handed; mean age = 46.15 years, range = 24-55; mean education = 14.8 years, range = 9-18) and six patients with right TLE (17% female; 33% left-handed; mean age = 57.64 years, range = 22-62; mean education = 15.52 years, range 11-18). Mean duration of epilepsy was 19 years. Participants had an average of two failed anti-seizure medications prior to surgery. TLE groups were compared to 22 healthy controls (36% female; 14% left-handed; mean age = 33.68 years, range = 22-53; mean education = 17.66 years, range = 16-20). All participants completed comprehensive neuropsychological testing at a large Northeastern medical center. The BVMT-R was scored using standard and novel scoring paradigms. All data were retrospectively reviewed from archival datasets.

Results: MANCOVA results indicated a significant multivariate main effect for group membership and standard BVMT-R scoring after controlling for level of education, Wilks' $\Lambda = 0.59$, $F(4, 64) = 4.91$, $p = .002$. The multivariate partial eta squared (η^2) of .58 indicated a strong relationship between group membership and both immediate and delayed recall, with the control group performing better overall. The TLE groups did not perform significantly different from each other. A significant multivariate main effect for group and novel BVMT-R scoring was found (also controlling for education), Wilks' $\Lambda = 0.42$, $F(8, 58) = 3.97$, $p = .001$. Overall, the

control group demonstrated better item learning with no significant difference between TLE groups observed. Both the control ($M = 16.5$, $SD = 2.04$) and left TLE ($M = 12.33$, $SD = 4.03$) showed stronger associative learning compared to the right TLE group ($M = 10.2$, $SD = 4.27$). For item and location delayed recall, controls ($M = 4.82$, $SD = 1.62$) had more accurate recall compared to left TLE ($M = 1.56$, $SD = 2.04$) with a trend toward better performance compared to the right TLE patients ($M = 2.6$, $SD = 1.82$); the TLE groups performed similarly. No difference was observed for associative delayed recall between the three groups.

Conclusions: Patients with right TLE showed worse associative learning compared to left TLE, while performance was generally comparable to their right TLE counterparts on other novel BVMT-R scoring paradigms. Unsurprisingly, patients with TLE performed worse on BVMT-R using standard scoring procedures, though no lateralizing effect was observed. While these findings suggest that associative visual learning weakness may be characteristic of right TLE, findings should be interpreted cautiously the given small sample size and demographic considerations (i.e., uneven gender distribution, lack of data on ethnicity/race).

Categories: Epilepsy/Seizures

Keyword 1: epilepsy / seizure disorders

Keyword 2: neuropsychological assessment

Keyword 3: visuospatial functions

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32 Prediction of Seizure Outcome with Presurgical IAT, MRI, and PET in Patients with Temporal Lobe Epilepsy Undergoing Surgery

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