

($z=2.079$, $p=.038$) but not Processing Speed ($z=1.785$, $p=.074$) via WMH. Because the effect of ADHD on WMH was negative (i.e., fewer WMH in ADHD) despite worse cognition than controls, we tested the a posteriori hypothesis that WMH burden may be relatively more deleterious for ADHD than controls. We found considerably stronger negative correlations between total WMH volumes and Processing Speed ($r=-.423$, $p=.009$) and Executive Functioning ($r=-.528$, $p<.001$) in the ADHD group than in controls ($r=-.231$, $p=.175$ and $r=-.162$, $p=.346$, respectively), even though total whole-brain proportion of WMH ($M=0.15\%$, $SD=0.27$; Mann-Whitney $U=430.0$, $p=.002$) and frontal-lobe proportion of WMH volumes ($M=0.33\%$, $SD=0.51$; Mann-Whitney $U=464.0$, $p=.007$) were lower in ADHD than in controls ($M=0.29\%$, $SD=0.42$ and $M=0.66\%$, $SD=0.88$, respectively).

Conclusions: WMH burden contributes significantly to the relationship between ADHD and cognition, but ADHD remains an independent contributor to worse processing speed and executive functioning in older adults. Vascular burden may have relatively more deleterious effects on cognition in ADHD, potentially due to decades of accumulated allostatic load, whereas healthy controls can accumulate greater amounts of WMH before cognition is impacted.

Categories: ADHD/Attentional Functions

Keyword 1: aging disorders

Keyword 2: cognitive functioning

Keyword 3: executive functions

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30 Examining the Bilingual Advantage in Executive Functioning in ADHD: A Retrospective Study

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Objective: Several studies have found a bilingualism advantage on executive functioning tasks like cognitive flexibility, inhibitory control,

switching, and working memory in typically developing populations. (Grote et al., 2015, Foy & Mann, 2014). However, some studies have found deficits in inhibitory control and switching for bilingual individuals with Attention Deficit/Hyperactivity Disorder (ADHD) compared to monolingual individuals and control groups (Bialystok et al., 2017, Mor et al., 2015). They suggest that this disadvantage is due to the burden of managing two language systems which perpetuates the executive dysfunction seen in ADHD. The current study aims to examine if there is a bilingualism advantage in other aspects of executive function, including inhibitory control, planning, problem solving, switching, and working memory among children and adults diagnosed with ADHD.

Participants and Methods: The medical records of 170 patients evaluated in an outpatient neuropsychology clinic from 2018-2022 were reviewed. Sixty participants diagnosed with ADHD, between the ages of 6 and 46 (61.67% male), comprised the final sample. Forty-one were monolingual and 19 were bilingual or multilingual. Language status was based upon patient or parental report. Outcomes on various direct and indirect measures of executive function were examined.

Results: Linear regression models, adjusting for age and sex, revealed a significant bilingual advantage on the following measures: Wechsler Intelligence Scale for Children- Fifth Edition (WISC-V) and Wechsler Adult Intelligence Scale - Fourth Edition (WAIS-IV) Digit Span Backwards and Digit Span Sequencing, WISC-V Picture Span, and Behavior Rating Inventory of Executive Function, 2nd Edition (BRIEF-2) Parent-Report Emotion Regulation Index (ERI). There were no significant differences in scores between monolinguals and bilinguals on the following measures: Delis-Kaplan Executive Function System (D-KEFS) Color-Word Interference Inhibition versus Combined Naming Contrast Score and Inhibition/Switching versus Inhibition Contrast Score, D-KEFS Trail Making Number-Letter Switching versus Combined Number Sequencing and Letter Sequencing Contrast Score, A Developmental Neuropsychological Assessment, 2nd Edition (NEPSY-2) Naming versus Inhibition Contrast Score and Switching versus Inhibition Contrast Score, Wisconsin Card Sort Task Learning to Learn Index, BRIEF-2 Parent-rated Behavioral Regulation Index (BRI), Cognitive Regulation Index (CRI), and Global Executive Composite (GEC), BRIEF-2 Self-rated BRI, ERI,

CRI, and GEC, or BRIEF Adult Version BRI, Metacognitive Index, and GEC.

Conclusions: Bilingual status is associated with stronger auditory and visual working memory among people with ADHD, but not with stronger inhibitory control, switching, planning, or problem solving skills. At the same time, there were no significant differences between monolingual and bilingual ADHD patients on BRIEF parent- or self-rated behavioral or cognitive dysregulation. Our results suggest that bilingualism may confer an advantage in some aspects of executive function among a population with weak attention and executive function skills more broadly. Furthermore, we did not find any type of disadvantage for those who are bilingual. Future studies should examine whether lower parental ratings of emotion dysregulation among ADHD patients who are bilingual are due to bilingual children's better ability to adapt to different situations or cultural differences in parenting practices.

Categories: ADHD/Attentional Functions

Keyword 1: attention deficit hyperactivity disorder

Keyword 2: bilingualism/multilingualism

Keyword 3: executive functions

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31 Outcomes of an ACT-Based Group Protocol on Neuropsychological Late Effects in Survivors of Childhood Cancer

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Objective: Attention of the research community on childhood cancer has grown exponentially over the last 5 decades (Robinson & Hudson, 2014). With research attention growing rapidly, cure rates have increased just as dramatically, with survivorship well over 80% (Ward, et al., 2014). With survivorship on the rise, research has turned to the examination of late effects in survivors of childhood cancer, especially neuropsychological late effects (Krull, et al., 2018). Late effects, functional impairment, and

the awareness of one's own impairment can create several lasting issues in a survivor's life (Oeffinger, et al., 2010). The objective of this study is to explore the feasibility and functionality of a group intervention for this population.

Participants and Methods: Participants were recruited from a pediatric cancer institute in southern California. To be considered for inclusion, participants must have completed curative treatment for childhood cancer, not be currently undergoing treatment for childhood cancer, be free of any severe and persistent mental illnesses, and have access to a stable internet connection (for Zoom sessions). This study examined the impact of an Acceptance and Commitment Therapy (ACT)-based group intervention protocol on survivors of childhood cancer. Specifically, this study explored a strategy to identify early neuropsychological late effects and a strategy to improve these impacts. The group intervention was conducted via Zoom (www.zoom.us) which provided an opportunity to continue to provide this service in the wake of COVID-19. Data was collected at baseline and at the completion of the group intervention. This data focused on the functional and perceived impacts of neuropsychological sequelae in these participants, as well as the changes as related to the group intervention.

Results: Data did not show any significant changes from baseline to follow-up in this population. The lack of significance was likely due to a severely truncated sample size. Despite the lack of significant findings, data appears to trend negatively. Although these findings do not provide conclusive evidence for this ACT-based group as an intervention for neuropsychological late effects in survivors of childhood cancer, the data suggested some interesting trends which will be explored further in this presentation.

Conclusions: The results of this study help to further explore the importance of attention to neuropsychological symptoms and issues in survivors of childhood cancer, especially within the first few years following the completion of treatment. As survivorship continues to increase, it will be of utmost importance to continue to examine the impact of neuropsychological late effects and how the field of neuropsychology can best serve this population. This study was severely limited by a small sample size, a single clinician providing the protocol, and a truncated timeline. Further research will examine the impact of this study protocol in a larger sample size, which will likely increase the ability to reject