SOCIAL DIFFICULTIES OF LEARNING, ATTENTIONAL AND AUTISTIC DISORDERS: SCREENING AND TREATMENT, 2013 EDITION

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Updates

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Neurobiological Differences, Learning and Teaching

"…Although neurodevelopmental disabilities are congenital, they are rarely identified until relatively late in childhood, if at all, because specialized assessments are difficult to access… and teachers and parents are often poorly informed about them. Moreover, because of the high rates of co-occurrence, it is likely that an unassessed SLD will be treated as the consequence of the assessed SLD. For example, the dyslexia in a child assessed with attention-deficit/hyperactivity disorder could be assumed to result from that condition and therefore be treated pharmaceutically (e.g., with methylphenidate) but without the specialized help that learners with dyslexia need…."

Neurobiological Differences, Learning and Teaching

"…Similarly, for a child assessed with dyslexia who also has dyscalculia, a learning program designed to treat the reading disability alone may be implemented. This may be particularly true when one condition is more spectacular or obvious than the other, or indeed when one SLD is more intensively researched than another…."

Reference

Butterworth, B. and Kovas, Y. (April 19, 2013). Understanding Neurocognitive Developmental Disorders Can Improve Education for All. Science, 340(6130), 300-305. From website: http://www.sciencemag.org/content/340/6130/300.full.

Autism & Aggression

"The current study examined the prevalence and correlates of physical aggression in a sample of 1584 children and adolescents with ASD enrolled in the Autism Treatment Network. The prevalence of aggression was 53%, with highest prevalence among young children. Aggression was significantly associated with a number of clinical features, including self-injury, sleep problems, sensory problems, GI problems, communication and social functioning. In multivariate models, self-injury, sleep problems, and sensory problems were most strongly associated with aggression. The results indicate that aggression is markedly prevalent, and clinical implications and directions for future research are discussed" (p. 455)

Reference

Mazurek, M.O., Kanne, S.M. and Wodka, E.L. (March, 2013). Physical Aggression In Children and Adolescents with Autism Spectrum Disorders. Research in Autism Spectrum Disorders, 7(3), 455-465. From website: http://www.sciencedirect.com/science/article/pii/S1750946712001456.

Autism and Suicide

"Percent of children with autism for whom suicide ideation or attempts was rated as sometimes to very often a problem by mothers (14%) was 28 times greater than that for typical children (0.5%) but less than for depressed children (43%). For children with autism, four demographic variables (age 10 or older, Black or Hispanic, lower SES, and male) were significant risk factors of suicide ideation or attempts. The majority of children (71%) who had all four demographic risk factors had ideation or attempts. Comorbid psychological problems most highly predictive of ideation or attempts were depression, behavior problems, and teased…"

Autism & Suicide

"… Almost half of children with these problems had suicide ideation or attempts. All children with autism should be screened for suicide ideation or attempts because ideation and attempts in autism are significantly higher than the norm and are present across the spectrum. This is especially important for children who have the demographic and comorbid risk factors, many of which can be targeted for intervention to reduce and prevent suicide ideation and attempts" (p. 109).

Reference

Dickerson-Mayes, S. Gorman, A.A., Hillwig-Garcia, J. and Syed, E. (January, 2013). Suicide Ideation and Attempts in Children With Autism. Research in Autism Spectrum Disorders, 7(1), 109-119. From website: http://www.sciencedirect.com/science/article/pii/S1750946712000931.

Sleep in Children Vs Adults

"When sleep followed implicit training on a motor sequence, children showed greater gains in explicit sequence knowledge after sleep than adults. This greater explicit knowledge in children was linked to their higher sleep slow-wave activity and to stronger hippocampal activation at explicit knowledge retrieval. Our data indicate the superiority of children in extracting invariant features from complex environments, possibly as a result of enhanced reprocessing of hippocampal memory representations during slow-wave sleep" (p. 391).

Reference

Wilhelm, I., et al. (March 3, 2013). The Sleeping Child Outplays The Adult's Capacity To Convert Implicit into Explicit Knowledge. Nature neuroscience, 16, 391-393. From website: http://www.nature.com/neuro/journal/v16/n4/abs/nn.3343.html.

AD/HD & Obesity

"…Self-reported ADHD symptoms were associated with adult BMI and change in BMI from adolescence to adulthood, providing further evidence of a link between ADHD symptoms and obesity" (p. 852).

AD/HD & Obesity

“Medications for ADHD often suppress appetite and in children decelerated growth velocity has typically been a concern. It may become necessary for clinicians to monitor weight more carefully among their child and adolescent patients with ADHD, especially when they come off medications or in developmental transitions where weight gain is common. Treatment for obesity may also be affected among individuals with ADHD symptoms…”

AD/HD & Obesity

"…Treatment effectiveness may be diminished and relapse may be greater among those with more ADHD symptoms. Given the mounting evidence, effort directed at developing and defining strategies for assessing and treating obese patients with co-occurring ADHD symptoms and for monitoring ADHD patients for unhealthy weight gain appears warranted".

Reference

Fuemmeler, B.F. etal. (June, 2011). Association Between Attention-Deficit/Hyperactivity Disorder (ADHD) Symptoms and Obesity and Hypertension In Early Adulthood: A Population Based Study. International Journal of Obesity, 35(6), 852-862. From website: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3391591/.

Emphatic Brain: Bonobos Vs Chimpanzees

"Here, we present the first ever comparison of chimpanzee and bonobo brains using diffusion tensor imaging, supplemented with a voxel-wise analysis of T1-weighted images to specifically compare neural circuitry implicated in social cognition. We find that bonobos have more gray matter in brain regions involved in perceiving distress in both oneself and others, including the right dorsal amygdala and right anterior insula…"

Emphatic Brain: Bonobos Vs Chimpanzees

"…Bonobos also have a larger pathway linking the amygdala with the ventral anterior cingulate cortex, a pathway implicated in both top–down control of aggressive impulses as well as bottom–up biases against harming others. We suggest that this neural system not only supports increased empathic sensitivity in bonobos, but also behaviors like sex and play that serve to dissipate tension, thereby limiting distress and anxiety to levels conducive with prosocial behavior".

Reference

Rilling, J.K. et al. (April 5, 2011). Differences Between Chimpanzees and Bonobos in Neural Systems Supporting Social Cognition. Social and Cognitive Neuroscience, doi: 10.1093/scan/nsr017. From website: http://scan.oxfordjournals.org/content/early/2011/04/04/scan.nsr017.abstract.

Neurology of Dyslexia Differs in Males & Females

"…In a replication study of men, we obtained the same findings of less GMV in dyslexics in left middle/inferior temporal gyri and right postcentral/supramarginal gyri as reported in the literature. However, comparisons in women with and without dyslexia did not yield left hemisphere differences, and instead, we found less GMV in right precuneus and paracentral lobule/medial frontal gyrus. In boys, we found less GMV in left inferior parietal cortex (supramarginal/angular gyri), again consistent with previous work, while in girls differences were within right central sulcus, spanning adjacent gyri, and left primary visual cortex…"

Neurology of Dyslexia Differs in Males & Females

"… Our investigation into anatomical variants in dyslexia replicates existing studies in males, but at the same time shows that dyslexia in females is not characterized by involvement of left hemisphere language regions but rather early sensory and motor cortices (i.e., motor and premotor cortex, primary visual cortex). Our findings suggest that models on the brain basis of dyslexia, primarily developed through the study of males, may not be appropriate for females and suggest a need for more sex-specific investigations into dyslexia."

Reference

Evans, T.M., Flowers, D.L., Napoliello, E.M. and Eden, G.F. (April, 2013). Sex-specific gray matter volume differences in females with developmental dyslexia. Brain Structure and Function, DOI 10.1007/s00429-013-0552-4. From website: http://link.springer.com/article/10.1007%2Fs00429-013-0552-4#.

Reading Readiness and Blood Lead Levels

"BLLs (Blood Lead Levels, sic.) well below 10 µg/dL were associated with lower reading readiness at kindergarten entry. The high prevalence of elevated BLLs warrants additional investigation in other high-risk US populations. Results suggest benefits from additional collaboration between public health, public education, and community data providers".

McLaine, P. et al. (May 13, 2013). Elevated Blood Lead Levels and Reading Readiness at the Start of Kindergarten. Pedicatrics, doi: 10.1542/peds.2012-2277. From website: http://pediatrics.aappublications.org/content/early/2013/05/08/peds.2012-2277.abstract.