

⁶ Yeouido St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Department of Psychiatry, Seoul, Republic of Korea

* Corresponding author.

Objective The purpose of the study was to evaluate burden of main caregivers in children with epilepsy and to identify factors associated with caregiver burden.

Method Main caregivers of pediatric patients with epilepsy were enrolled four general hospitals in several cities of Korea. One hundred and twenty-four caregivers of patients were included in this cross-sectional study. Sociodemographic/clinical characteristics of patients and sociodemographic characteristics of caregivers were collected. The caregivers were assessed using the Korean version Zarit burden Interview (ZBI), Center for Epidemiological Studies of Depression Scale (CES-D) and social support/conflict scale. Multiple linear regression methods were used to evaluate factors contributing to burden of caregivers.

Results Of the 124 participants, 98(81.7%) were the mothers. The mean score on the ZBI and CES-D were 23.66 (\pm 19.15) and 13.87 (\pm 12.95) points, respectively. Factors affecting of caregiver burden were the number of antiepileptic drugs (AEDs), which patients are taking, and CES-D score by multiple linear regression analysis.

Conclusions Higher number of AEDs prescribed and depression of caregivers are main factors contributing to burden of caregivers in children with epilepsy.

Keywords Caregiver burden; Pediatric epilepsy; Factor

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EW76

Deficit in executive abilities as a risk factor for emerging weakness in grammar understanding in Russian-speaking children

S. Kiselev

Ural Federal University, Clinical Psychology, Ekaterinburg, Russia

Introduction Weakness in grammar understanding is key future of specific language impairment (SLI) in children. There has been a considerable amount of work on the language abilities of children with SLI, but we still know relatively little about their other cognitive abilities – in particular their non-linguistic cognitive strengths and weaknesses.

Aims The aim of this research was to examine the hypothesis that Russian-speaking children at the age of 4 with deficit in executive abilities have a risk for emerging weakness in grammar understanding at the age of 6.

Methods One hundred and twenty-five children at the age of 4 were assessed with the NEPSY to reveal children with different level of executive abilities. We have revealed 21 children with deficit in executive abilities. The control group included 21 children with typical level of executive abilities. The children from experimental and control group were matched for IQ and gender. In the framework of longitudinal research, children at the age of 6 from both groups were assessed by Grammar Understanding Test from Luria's neuropsychological assessment technique.

Results Two-way ANOVAs with repeated measures revealed significant differences between groups for scores in the Grammar Understanding Test. Children from experimental group had weakness in grammar understanding.

Conclusions We have revealed that children at the age of 4 with weakness in executive abilities have a risk for emerging weakness in grammar understanding at the age of 6. In view of the obtained results, it can be assumed that executive abilities have influence on the development of grammar understanding in preschool children.

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EW77

Neurocognitive deficits underlying attention-deficit/hyperactivity disorder (ADHD): A clustering/subgrouping analysis

P. Leung*, F. Chan

The Chinese University of Hong Kong, Psychology, Shatin, Hong Kong, China

* Corresponding author.

Introduction Neurocognitive deficits are assumed to be underlying the behavioral symptoms of ADHD. Research over the years has identified a host of these neurocognitive deficits, but no single one deficit appears to be dominant or pervasive in all ADHD children. This raises the query whether there can be further subgrouping of ADHD children at the neurocognitive level.

Objectives and aims This study aims at disentangling the heterogeneous neurocognitive deficits underlying ADHD. To achieve this, we explore if there are separable neurocognitive subgroups in ADHD children.

Methods One hundred and sixty-four Chinese ADHD boys and 163 typically developing controls, aged 6 to 12, were recruited in Hong Kong. A neurocognitive battery of executive function (EF) measures was administered. Cluster analysis was first conducted to identify subgroups of ADHD children based on their neurocognitive functioning. MANOVA was then employed to further explore the differences between subgroups.

Results Two ADHD subgroups were identified. One subgroup showed multiple EF deficits, including disinhibition, impaired interference control, distorted temporal information processing, slow processing speed, and delay aversion. The other subgroup, on the contrary, had intact EF but increased response variability. Both subgroups had comparable ADHD phenotypic severity and comorbidity pattern. However, ADHD children in the EF deficits subgroup were more responsive to medication (i.e., methylphenidate).

Conclusion Results support the neurocognitive heterogeneity of ADHD. EF deficits and response variability are two separable neurocognitive profiles underlying and subgrouping ADHD children of comparable severity. This subgrouping has implication for medication response and offers candidate endophenotypes for neuroimaging and genetic study.

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EW79

Role of music and non-musical techniques in self-guided emotional regulation

R. Mohan*, N. Anand

Surrey and Borders Partnership NHS Foundation Trust, Child and Adolescent Psychiatry, Guildford, United Kingdom

* Corresponding author.

Introduction Studies on relationships between music, visual imagery or therapeutic techniques, like mindfulness and emotions have been undertaken with varying success in predominantly adult populations. Their role in the child and adolescent population remains unclear.

Aims and objectives We undertook a systematic literature review to assess current evidence in the use of music, guided imagery with/without therapeutic techniques for emotional processing in adults, children and adolescents.

Methods We identified 87 relevant papers (JSTOR, OVID Medline, Cochrane, PubMed, Science Direct, Taylor & Francis and Wiley). We excluded non-English papers and qualitative analyses. Nine studies used quantitative techniques (Neuroimaging) for assessing emotional change using musical and non-musical stimuli ($n=77$). Of these, four studies used fMRI and two used PET scans.

Results fMRI demonstrates a significant relation between amygdalar activation and emotional response to visual imagery ($P < 0.05$, $n=45$). Early information using PET scanning shows a significant association between activation of different parts of brain with varied visual imagery (one study, $n=5$) and varied music (one study, $n=10$). There is similarity in the activation of specific cortical areas using musical and non-musical stimuli. Two separate studies of patients with damaged amygdala due to disease ($n=6$) showed significant impairment of emotional processing and response.

Conclusions There is early encouraging data providing evidence of possible relationships between music and visual imagery in emotional processing. Further studies are needed to examine these in detail, especially in children/adolescents. Music with visual imagery may be a useful adjunct in the self-guided processing of milder emotional disorders with components of anxiety, depression, adjustment and emotional dysregulation.

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EW80

Time-course of treatment-emergent adverse events in a long-term safety study of lisdexamfetamine dimesylate in children and adolescents with ADHD

I. Hernández Otero^{1,*}, T. Banaschewski², P. Nagy³, C.A. Soutullo⁴, A. Zuddas⁵, B. Caballero⁶, B. Geibel⁷, B. Yan⁸, D.R. Coghill⁹

¹ University Hospital Virgen de la Victoria–Maritime Hospital, Unit of Child and Adolescent Mental Health USMIJ, Torremolinos, Spain

² Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Department of Child and Adolescent Psychiatry and Psychotherapy, Mannheim, Germany

³ Vadaskert Child and Adolescent Psychiatry Hospital and Outpatient Clinic, Child and Adolescent Psychiatry, Budapest, Hungary

⁴ University of Navarra Clinic, Child and Adolescent Psychiatry Unit, Department of Psychiatry and Medical Psychology, Pamplona, Spain

⁵ University of Cagliari, Department of Biomedical Sciences, Section of Neuroscience and Clinical Pharmacology, Cagliari, Italy

⁶ Shire, Neuroscience, Zug, Switzerland

⁷ Shire, Neuroscience, Wayne, USA

⁸ Shire, Biostatistics, Wayne, USA

⁹ University of Dundee, Division of Neuroscience, Dundee, United Kingdom

* Corresponding author.

Introduction The long-term safety and efficacy of lisdexamfetamine dimesylate (LDX) in children and adolescents with attention deficit/hyperactivity disorder (ADHD) was evaluated in a European 2-year, open-label study (SPD489-404).

Objective To evaluate the time-course of treatment-emergent adverse events (TEAEs) in SPD489-404.

Methods Participants aged 6–17 years received open-label LDX (30, 50 or 70 mg/day) for 104 weeks (4 weeks dose-optimization; 100 weeks dose-maintenance).

Results All enrolled participants ($n=314$) were included in the safety population and 191 (60.8%) completed the study. TEAEs occurred in 282 (89.8%) participants; most were mild or moderate. TEAEs considered by the investigators as related to LDX were reported by 232 (73.9%) participants with the following reported for $\geq 10\%$ of participants: decreased appetite (49.4%),

weight decreased (18.2%), insomnia (13.1%). TEAEs leading to discontinuation and serious TEAEs occurred in 39 (12.4%) and 28 (8.9%) participants, respectively. The median (range) time to first onset and duration, respectively, of TEAEs identified by the sponsor as being of special interest were: insomnia (insomnia, initial insomnia, middle insomnia, terminal insomnia), 17.0 (1–729) and 42.8 (1–739) days; weight decreased, 29.0 (1–677) and 225.0 (26–724) days; decreased appetite, 13.5 (1–653) and 169.0 (1–749) days; headache, 22.0 (1–718) and 2.0 (1–729) days. Reports of insomnia, weight decreased, decreased appetite and headache were highest in the first 4–12 weeks.

Conclusions TEAEs associated with long-term LDX treatment were characteristic of stimulant medications, with the greatest incidence observed during the first 4–12 weeks.

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EW81

Integrative approach to the construction of psychosocial rehabilitation of mental and behaviour disorders in children moved out of “Anti-Terrorist Operation” zone

B. Mykhaylov^{1,*}, M. Vodka², T. Aliieva¹, I. Vashkita¹

¹ Kharkov Medical Academy of Postgraduate Education, Kharkov, Psychotherapy, Kharkov, Ukraine

² The International Charity Fund “Alexander Feldman Fund”, Director, Kharkov, Ukraine

* Corresponding author.

Introduction The problem of children’s mental health in Ukraine – it is one of the most pressing problems in the country’s health. This is due to the increasing number of extreme situations (military operations in the territory of Ukraine) for the last time that calls for the training of specialists capable of carrying out psychosocial rehabilitation to victims of “anti-terrorist operation”(ATO).

Objectives The mental and behaviour disorders in children affected of ATO. We studied 261 families: 107 adults and 154 children. The aim of the project was to optimize the provision of psycho-social support for children and adolescents with problems of the psychic sphere by developing a system of psychological adjustment and social education at the Centre for psychosocial rehabilitation of children, as well as the creation of the necessary conditions that expand the comfort and a safe space for the child to enhance positive impacts and mitigate negative impacts of the social environment.

Methods The leading role was played by a combination of two areas of work, namely the psychocorrection (trainings, art-, individual-, family-, hyppo-therapy) and social work.

Results In 85.4% of the children showed stabilization of mental and emotional state, reducing aggression, increasing motivation to social activity. In 56.3% of families – reducing conflict relations.

Conclusions The non-standard way of psycho-correction allowed organizing a fruitful and creative leisure, which resulted in the reduction of aggression and anxiety, increased motivation for the successful development of new activities and problem-solving skills and conflict situations with peers and family members.

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