

RCPCH/RCPE Joint Symposium

Mental health needs of children and young people – improving outcomes in children with behavioural and psychological needs

A joint symposium held on 29 September 2011 at the Royal College of Physicians of Edinburgh

SLEEP DISORDERS IN CHILDREN

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Understanding the physiology, development and normal sleep processes is important in managing sleep disorders.

Sleep disorders can be loosely classified into insomnia, hypersomnia, sleep wake cycle disorders and parasomnias. The most common sleep disorders faced by general paediatricians is the child who does not fall asleep or keeps waking, often on a background of a neurodevelopmental disorder.

There are a number of publications suggesting an increased prevalence of two sleep disorders, Delayed Sleep Phase syndrome and Restless Leg Syndrome in children with Attention Deficit Hyperactivity Disorder (ADHD), some proposing an aetiological link, the impairment of pre-frontal cortex from constant hypoaroused state, causing the poor attention and phenomenology of ADHD. It is more likely that there is comorbid occurrence of these sleep disorders in some children with ADHD.

Delayed Sleep phase syndrome is characterised by sleep onset insomnia, the children often taking two hours or more to fall asleep in spite of good sleep hygiene. An actigraphy study or sleep diary is important to confirm diagnosis. Treatment is with appropriately timed melatonin, or morning light therapy, sometimes combined with chronotherapy.

There is often a positive family history in children who have sleep disturbance from early onset Restless Leg syndrome, the children complaining of leg pains in the evenings, relieved by movement and have disturbed sleep with increase in periodic leg movements in sleep. Low brain iron level may exacerbate symptoms and maintaining serum ferritin level above 50 microg/L should be the first therapeutic intervention.

Disturbed sleep takes its toll on children and carers, and improving the child's sleep will treat the whole family.

AUTISM SPECTRUM DISORDERS: EVIDENCE FOR OUTCOMES

Professor Anne O'Hare, Consultant Paediatrician, Community Child Health, Edinburgh, UK

Evidence for outcomes in the treatment of autism can be discussed in terms of the advances that have been made in understanding the 'natural' history of autism, the recent progress made in identifying important outcomes and how these developments have informed the conduct of randomised controlled trials.

Individual characteristics affecting children with Autism Spectrum Disorder (ASD) such as IQ, language levels, history of regression and high rates of comorbid neuropsychiatric and medical difficulties affect the natural history. Important toddler early symptoms of ASD and how these change over time indicate areas for treatment and emphasise the importance of early intervention focusing on developing attention and responsivity to language and fostering intentional communication in young children affected with ASD.

Substantial progress has been made in identifying meaningful 'outcomes' that is to say those that might improve quality of life, push deviant developmental trajectories back into alignment, measure the core empathy deficits or affect the biomedical underpinnings.

Scottish Intercollegiate Guidelines Network (SIGN) guidelines (2007) presented the evidence for non-pharmacological interventions including parent mediated, communication and behavioural/psychological as well as pharmacological interventions and those with biomedical and nutritional components. Post-SIGN, there have been an impressive range of meta-analyses and systematic reviews and randomized controlled trials, looking at early intensive behavioural interventions and all these other areas identified by SIGN. These have suggested which children are likely to benefit from which type of intervention and highlighted the success that can follow targeting particular symptoms which we now know are very important in the mechanisms of autism.

Post-SIGN there have been significant pharmacological developments with melatonin in particular. Some of the biomedical/nutritional interventions have not been taken through to well-evidenced randomised controlled trials but the underlying science however has been evaluated. There have been dramatic advances in building up a functional map of the mechanisms of ASD and for some individual causes, these molecular genetic technologies have teased out mechanisms by which brain development is adversely affected and thus suggested avenues of treatment such as AFQ056 in Fragile X syndrome patients.

Conclusions can therefore be drawn that the natural history of autism spectrum disorders is now better understood, the outcomes are better defined and measurable, a range of behavioural and psychoeducational interventions offer improved prognosis for some children and parent mediated programmes improve parent-child reciprocity.

We now know that melatonin is a useful pharmacological intervention but 'popular' interventions such as the gluten and casein exclusion diet, have not been underpinned by a convincing basic science. In contrast, molecular medicine has identified specific treatments for some known aetiologies of autism that are presently being explored in clinical trials.

For the future, research continues into developing an evidence base for frequently employed psychoeducational interventions such as Carol Gray's Social Stories. Future trials could include examination of language and therapy interventions, particularly where these have been shown to play a role in language acquisition such as prosody impairments. Biomedical technologies continue to offer potential treatments as we delineate the underlying aetiologies for ASD. The research climate for outcomes in ASD has benefited from collaboration across disciplines and partnership with children and families that led in the last few years to the major advances seen in diagnosis and assessment. Now they can similarly advance our knowledge as to how to achieve the best outcomes for children and families affected by autism spectrum disorders.

ATTENTION DEFICIT HYPERACTIVITY DISORDER IN ADOLESCENTS

Professor Peter Hill, Child and Adolescent Psychiatrist, Great Ormond Street Hospital for Children, London, UK

Developments in neuroimaging and cognitive research over the last decade or so have led to a reappraisal of the adolescent process. Previous models which stressed an interaction between physical maturation and social challenge have been extended and modified. Brain

changes across the pubertal period include both growth and extensive loss by apoptosis of cerebral cortical grey matter while white matter increases. These changes are paralleled by the development of cognitive executive skills and an increased ability to take social perspectives and make social judgements.

At the same time, changes in dopamine receptor activity in mesocortical and mesolimbic circuits are asynchronous, leading to an imbalance between reward and risk-taking as well as a possible lowering of mood and general satisfaction.

Attention deficit hyperactivity (ADHD) is increasingly understood as in part related to delayed cortical maturation which can be seen on neuroanatomical imaging.

In teenagers the picture of ADHD changes with maturation through adolescence as hyperactivity diminishes and impulsive inattention increases. Comorbid conditions become more affective in type and the association with specific developmental disorders lessens.

Associated impairments shift in nature and require attention in history taking. Adherence to prescribed medical treatments becomes a major issue and in clinical practice there is a need to move gradually from a parent-centred approach to one that places the teenager at the centre of management.

There are interesting ethical issues that arise in relation to cognitive enhancement, particularly public examinations.

SUBSTANCE MISUSE IN YOUNG PEOPLE

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Substance misuse is a major public health problem, with substantial levels of morbidity and mortality. Most children in their middle childhood are exposed to various substances including alcohol and tobacco, and a substantial minority, as high as 10%, continue to use drugs into adolescence and adulthood. Many youngsters who misuse drugs have multiple antecedent and coexisting mental health problems, unrecognised learning difficulties, family difficulties, involvement with the criminal justice system and deeply entrenched social problems. Substance misuse takes a high toll in terms of healthcare costs, violent crimes, accidents, suicides, social and interpersonal difficulties, and educational impairment. Substance misuse increases the risk of self-harm and harm to others.

Unfortunately despite the high levels of morbidity and mortality in this population, most young people in the UK do not receive appropriate help. There are many

barriers to assessment and treatment of substance misuse, starting from the very basic issue of defining what constitutes substance misuse in young people. Adult criteria for substance misuse lacks a developmental perspective and alternative criteria for classification have been proposed by researchers and clinicians. There is a paucity of evidence-based interventions in this population, especially in the UK. However, emerging evidence from the US and other countries suggest that systemic, family based interventions are effective and cost effective in reducing both substance misuse and improving psychosocial outcomes across a number of domains including improved family and peer relationships and better academic performance. There is some evidence for the efficacy of individual approaches such as cognitive behavioural therapy (CBT) – both alone and in combination with motivational enhancement. Treatment should be tailored to meet the needs of the individual young person. Professionals working in CAMHS and child health have an unrivalled opportunity to play a significant role in the early identification and treatment of substance misuse, including children of substance-misusing parents and other high-risk groups.

The presentation will address developmental and systemic perspectives in understanding the impact of substance misuse in young people's lives and how best we can help them to 'get back on track'. Integrative, multi-agency treatments addressing a range of ecologically valid aetiological factors have the potential to engender a culture of therapeutic optimism.

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AM I BOVERED? ADOLESCENTS AND PHYSICAL ILLNESS

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Dr Katy Auckland, Consultant Child and Adolescent Psychiatrist
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Adolescents with physical symptoms are often viewed as challenging or 'difficult' by clinicians. In this presentation, the biopsychosocial model of adolescence will be

explored, along with the changes that young people experience during this important developmental stage. Some of the difficulties reported in dealing with these patients can be normalised within a biopsychosocial framework. Conversely, the experience of chronic illness can cause disruption to achievement of the developmental 'tasks' of adolescence. Ways of improving outcomes for adolescent patients will be addressed, in order to facilitate healthy transitions to adult care.

References

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EARLY SCREENING AND INTERVENTION IN CHILD MENTAL HEALTH: RECENT EVIDENCE FROM GLASGOW

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Markers of vulnerability to many physical and psychological disorders – including language delay and disruptive behaviours are present in early childhood. In response to Scottish Government policy, and following local pilot work, a new universal contact between health visitors and families with children aged 30 months is being implemented in NHS Greater Glasgow and Clyde. This contact, with a uniquely neurodevelopmental focus, uses standardised tools to assess social, emotional and language development. Detailed knowledge of the neurological and psychological profiles of children identified through this surveillance process is required, both for service planning and for power calculations for planned randomised trials. Children identified with language delay, emotional, conduct, attention or peer-relationship problems at the 30 month visit will be offered a detailed neuro-psychiatric evaluation and language assessment. We will present preliminary research findings regarding the utility of this contact as a population screening tool as well as operational learning from the first month of implementation.

IMPROVING OUTCOMES IN CHILDREN WITH BEHAVIOURAL AND PSYCHOLOGICAL ISSUES

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Over the past two or three decades our understanding of neurobiological mechanisms responsible for regulating a range of observed behaviours has increased greatly. For example there is converging evidence, derived from non invasive brain imaging, neurophysiology (Spectral EEG analysis, event related potentials), clinical genetics, and neuropsychology which identifies disordered fronto-striatal function as responsible for the developmentally inappropriate and impairing hyperactivity, impulsivity observed in attention deficit hyperactivity disorder (ADHD). Although there may be important underlying genetic causes identifiable, it is now clear that intrauterine, perinatal and postnatal brain insults together with environmental adversity may contribute to causation in different individuals. There is now wider recognition of potentially important biological contributions to causation and a move away from a purely 'psychosocial' to a 'bio-psychosocial' model of disorder.

Developmental disorders frequently exhibit overlapping clinical features, often described as 'co-morbid' with each other. Important examples include ADHD, Autism Spectrum Disorders, Developmental Coordination Difficulties, Tourette's Syndrome, Internalising Disorders, and problems of sleep, alongside all too often, issues such as challenging behaviour and aggression.

In today's symposium, individual speakers will be providing an update regarding specific contributions to behavioural and psychological disorders such as brain injury, physical illness, intrauterine alcohol exposure and also the potential contribution derived from disordered sleep. Developmental disorders such as ADHD and ASD continue to impact into adolescence and adulthood, with a clear need for multi-disciplinary recognition, support and treatment. This is also addressed in today's presentations. Problems in adolescents and young adults are often complicated by substance misuse and increasing mental health issues, so that at this critical stage appropriate recognition and support by Adult Services is essential.

Comprehensive (frequently multi-disciplinary) initial assessment and management is hugely important (see 'Getting it right for every child' – www.scotland.gov.uk), alongside a commitment to long-term follow-up and support, that in many circumstances requires to continue into adulthood and beyond (see Gillberg C. The ESSENCE in child psychiatry: early symptomatic syndromes eliciting neurodevelopmental clinical examinations. *Res Dev Disabil* 2010; 31:1543-51).