



The Association
for Child and Adolescent
Mental Health

THE BRIDGE

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**What do young patients
need when transitioning
from child to adult mental
health services?**

**South Carolina leads the
way in developing a school
mental health system**

Plus

Research
digests from
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Dr Stephanie Lewis

The Bridge Editor

This month there has been a renewed focus on the impact of institutional care on children's development and mental health, following publication of the Lancet Group Commission on this subject.¹

Sadly, millions of children worldwide live in institutions, typically with inadequate care and high risk of maltreatment. While this number appears to have decreased in some countries in recent years, it seems to have increased in other countries over the past three decades, largely due to HIV and other humanitarian crises. Children who grow up in institutional settings often experience delayed physical and cognitive development, and poor mental health. But children who soon leave institutional care to live with foster families may recover, particularly in relation to growth and cognition. These striking observations are consistent with the hypothesis that institutionalisation might cause adverse outcomes. However, it is also important to consider an alternative possibility of confounding by pre-existing risk factors – that is, children at risk of developmental delays (e.g. because of disability) may be more likely to enter institutional care and less likely to leave. A unique study, the Bucharest Early Intervention Project (BEIP), provides the strongest test of a causal relationship between institutional exposure and adverse outcomes, because institutionalised children were randomly assigned to high-quality foster care or to remain in their institution. Thus the benefits of deinstitutionalisation can be investigated without confounding by pre-existing vulnerabilities. This important study provided key evidence enabling the Lancet Group Commission to conclude that institutionalisation is likely to have direct effects on children's development and mental health, and that deinstitutionalisation can lead to significant improvements.² This issue of *The Bridge* includes an article which describes the most recent findings from the BEIP on the effects of institutionalisation and deinstitutionalisation of children on their social communication and psychopathology. Do take a look for more information (www.acamh.org/research-digest/early-deprivation-linked-long-term-social-communication-difficulties/)

On the basis of this compelling evidence, the Lancet Group Commission has advocated for an urgent reduction in institutionalisation and an increase in safe and nurturing family-based care of children. They provided policy recommendations to prioritise the role of families, and integrate global, national, and local initiatives to strengthen families and child protection systems to create sustainable change.³ In his recent ACAMH blog, Professor Edmund Sonuga-Barke, chair of this commission, commented that these recommendations need to “impact the grass roots in order to transform the lives of children, their families and communities. The long road of dissemination-to-implementation starts now”. Let's hope this impressive momentum continues and is translated into positive action.

Please read on to learn more about the latest research in this area, in addition to research on several other important child and adolescent mental health topics.

Further information:

Article in this issue of *The Bridge*, 'Early deprivation is linked to long-term social communication difficulties', www.acamh.org/research-digest/early-deprivation-linked-long-term-social-communication-difficulties/.

Professor Edmund Sonuga-Barke's ACAMH blog, 'Shining a light on the injustice of institutionalization and the damage it causes to children – to promote care reform across the globe', available online: <https://www.acamh.org/blog/shining-a-light-on-the-injustice-of-institutionalization-and-the-damage-it-causes-to-children-to-promote-care-reform-across-the-globe/>



References

- ¹ Boyce N, Godsland J, Sonuga-Barke E. Institutionalisation and deinstitutionalisation of children: the Executive Summary from a Lancet Group Commission. *The Lancet Child & Adolescent Health* 2020; **4**: 562–3.
- ² van IJzendoorn MH, Bakermans-Kranenburg MJ, Duschinsky R, et al. Institutionalisation and deinstitutionalisation of children 1: a systematic and integrative review of evidence regarding effects on development. *The Lancet Psychiatry* 2020; **7**: 703–20.
- ³ Goldman PS, Bakermans-Kranenburg MJ, Bradford B, et al. Institutionalisation and deinstitutionalisation of children 2: policy and practice recommendations for global, national, and local actors. *The Lancet Child & Adolescent Health* 2020; **4**: 606–33.

Contents:



Early deprivation is linked to long-term social communication difficulties



Are school-based interventions for depression and anxiety symptoms effective?



Can population registry data predict which children with ADHD are at risk of later substance use disorders?



Harnessing the potential of digital technology for remote interventions with young people



Implementing mental health support in schools faces many challenges



Is neurocognitive functioning linked to a family history of a suicide attempt?



South Carolina leads the way in developing a school mental health system



What do young patients need when transitioning from child to adult mental health services?



Depressed mood, inattention and worry might influence the risk for other symptoms in youth



Do we remember more when learning before bedtime?



Does DNA methylation link sleep disturbances to mental health problems?



ICD-10 versus ICD-11: the effects of PTSD diagnoses



Dr Jessica K. Edwards

Research highlights in this edition are prepared by Dr Jessica K. Edwards. Jessica is a freelance editor and science writer, and started writing for 'The Bridge' in December 2017.





Early deprivation is linked to long-term social communication difficulties

By Dr. Jessica K Edwards

Maltreatment affects a staggering 1 billion children worldwide.¹ Most of these maltreated children, but particularly those raised in institutions that are characterized by deprivation, experience some form of neglect. These children seem to be at risk of developing social, cognitive and psychiatric difficulties later in life.²

In a longitudinal, randomized controlled trial, Mark Wade and colleagues examined the long-term consequences of institutional rearing on social communication. In this study named the Bucharest Early Intervention Project, children reared in Romanian institutions were randomly assigned to care-as-usual (remaining in institutions) or high-quality foster care in early childhood. A matched group of never institutionalized children was also recruited. Then, participants were followed up in childhood and adolescence and assessed for social communication difficulties and psychopathology.

Consistent with previous studies,² the researchers found that children reared in an institution had more social communication problems at age 16 than children who had never been institutionalized. Those placed into foster care early in life exhibited fewer problems with reciprocal social interaction compared to those who remained in institutions. Early placement into a socially enriched environment, therefore, seems to mitigate the risk of developing problems in this domain of social communication.

Wade *et al.* also assessed the associations between social communication and psychopathology from age 8 to 16 years. Here, they found that poor social communication at age 8 was linked with general psychopathology at age 16. What's more, social communication deficits at age 8 partially mediated the effects of institutional rearing on general psychopathology at age 16. As such, the researchers consider that social communication might serve as a target for early intervention to safeguard institutionalized children against later psychiatric problems.

Referring to:

Wade, M., Zeanah, C.H., Fox, N.A. & Nelson, C.A. (2020), *Social communication deficits following early-life deprivation and relation to psychopathology: a randomized clinical trial of foster care*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13222.

References:

¹ Hillis, S. *et al.* (2016). *Global prevalence of past-year violence against children: A systematic review and minimum estimates*. *Pediatrics*. 137: e20154079. doi: 10.1542/peds.2015-4079.

² Sonuga-Barke, E.J. *et al.* (2017). *Child-to adult neurodevelopmental and mental health trajectories after early life deprivation: the young adult follow-up of the longitudinal English and Romanian Adoptees study*. *Lancet*. 389: 1539–1548. doi: 10.1016/S0140-6736(17)30045-4.



Are school-based interventions for depression and anxiety symptoms effective?

By Dr. Jessica K Edwards

Brioney Gee and colleagues in the UK recently compiled a Practitioner Review for the *Journal of Child Psychology and Psychiatry* on the effectiveness of school-based interventions for adolescent depression and anxiety. Their review looks specifically at the evidence on indicated school-based interventions that aim to reduce symptoms in young people already experiencing mental health symptoms.

Gee *et al.* conducted a systematic search for randomised controlled trials of indicated psychological interventions delivered in an education setting. They focused on trials of interventions for adolescents aged 10-19 with elevated symptoms of depression and/or anxiety. They identified 45 trials that met their inclusion criteria: most of these trials were of CBT-based interventions. “When we pooled together the findings of these trials, we found that immediately post intervention, the school-based interventions were successful at reducing depression and anxiety symptoms”, says Gee. “However, the size of the effect was small for depression symptoms and medium for anxiety symptoms”.

The researchers also looked at follow-up data. Here, they found some evidence that the effects on depression could be maintained for up to 6 months, but not later. They also found no evidence that the effects on anxiety were maintained beyond the end of the intervention. Gee explains that future trials incorporating longer-term follow-ups are thus needed to confidently determine whether the benefits of school-based interventions are maintained beyond the end of the intervention. Finally, in their subgroup analyses, Gee and colleagues found that the trials of interventions that were delivered by internal school staff didn't have a significant effect on symptoms, whereas those delivered by external practitioners did.

“The conclusions we drew from this review were that indicated school-based interventions are effective at reducing symptoms of depression and anxiety in adolescents immediately post-intervention, but based on current evidence we can't be confident that these reductions are sustained”, explains Gee. “In addition, we didn't identify any trials of interventions delivered in sixth form or further education colleges. Given that in the UK, many young people aged 16-18 attend further education colleges rather than schools, we felt this represented a significant gap in the literature that was worth highlighting”.

Referring to:

Gee, B., Reynolds, S., Carroll, B., Orchard, F., Clarke, T., Martin, D., Wilson, J. & Pass, L. (2020), *Practitioner Review: Effectiveness of indicated school-based interventions for adolescent depression and anxiety – a meta-analytic review*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13209.

Can population registry data predict which children with ADHD are at risk of later substance use disorders?

By Dr. Jessica K Edwards

The first study to examine the potential of machine learning in early prediction of later substance use disorders (SUDs) in youth with ADHD has been published in the *Journal of Child Psychiatry and Psychology*. Funded by the Co-CA-project, Yanli Zhang-James and colleagues collected information on psychiatric and somatic diagnoses, family history of these disorders, socioeconomic status, and birth complications from Swedish national registers for >19,000 young people with ADHD. Using data available by age 17 to predict a diagnosis of a SUD by age 19, the researchers trained various machine learning models in a subset of the sample, and then tested the models' prediction performance in a different subset.

Zhang-James *et al.* found that their models adequately predicted later SUDs in these young people with ADHD. A longitudinal model was able to predict later SUD risk from as young as 2 years-of-age. The researchers identified that an early ADHD diagnosis was an important predictor of a lower risk for SUDs, which they explain might reflect benefits of early diagnosis and treatment of ADHD in children. They also found that lower socioeconomic status was an important predictor, which they believe reaffirms the importance of policies that alleviate poverty, deprivation and inequality.

These findings have important implications. "Being able to identify children who are at increased risk for developing substance use disorders later in adolescence or adulthood could help the school-education system and service providers to develop and deliver prevention programs for the targeted children at early ages", says Zhang-James. "Furthermore, the ability to identify risk predictors may also help to inform policy-makers, parents, teachers and clinicians and guide the development of more effective measures for prevention and risk-reduction".

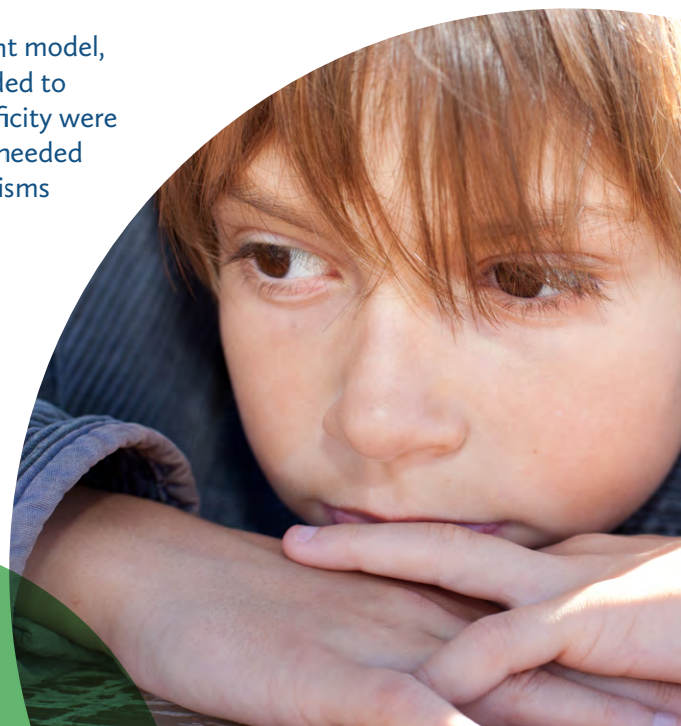
Zhang-James *et al.* concede that there are limitations to their current model, explaining that additional features and a larger sample size are needed to improve the predictive accuracy. "Our models' sensitivity and specificity were moderate", explains Zhang-James. "As such, future studies are now needed to improve the predictive power, as well as the explainable mechanisms underlying the prediction models".

Referring to:

Zhang-James, Y., Chen, Q., Kuja-Halkola, R., Lichtenstein, P. Larsson, H. & Faraone, S.V. (2020), *Machine-Learning prediction of comorbid substance use disorders in ADHD youth using Swedish registry data. J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13226.

See also:

<https://coca-project.eu/>



Harnessing the potential of digital technology for remote interventions with young people

By Dr. Jessica Edwards

Researchers in the UK have expressed their views to *Child and Adolescent Mental Health*, on the value of remote therapist support and digital technology for children and young people with mental health problems. In their article, Charlotte Sanderson and colleagues explain that there is good empirical evidence supporting that digital interventions can be clinically effective. They highlight that in some cases the effect sizes for short and medium-term outcomes are almost equivalent to those derived from face-to-face treatment.¹

Sanderson *et al.* discuss that as well as the lower cost compared to face-to-face therapy, remote support can help fill a gap where clinical contact is not available or is difficult to reach. Yet despite its advantages, the researchers concede that there is still a way to go to promote public and clinician acceptance of online interventions. Typical fears of young people include the perception that online treatments are impersonal or inflexible, and concerns of clinicians include difficulty managing risk. A blended approach might therefore,



be a suitable option. Here, online support is delivered alongside face-to-face treatment. Some preliminary data already support such a blended treatment approach.²

The value and utility of online interventions is becoming apparent in light of the current coronavirus pandemic. “The coronavirus crisis, certainly in the short term, has served as a catalyst for the online therapy movement, with a sudden surge in need for services to embrace video and teletherapy”, says Sanderson. “It will be interesting to see how this impacts on wider acceptance of online delivery in the longer-term, both for the public and service-providers”.

Overall, online interventions still represent a paradigm shift in how mental health care is conceptualised. Going forward, the researchers hope that services reflect on comparative outcomes and uptake of therapies that have shifted to online delivery to inform future service delivery and evidence based practice.

Referring to:

Sanderson, C., Kouzoupi, N. & Hall, C.L. (2020), *Technology Matters: The human touch in a digital age – a blended approach in mental healthcare delivery with children and young people*. *Child Adolesc. Ment. Health*. doi: 10.1111/camh.12385.

References:

¹Hollis, C. *et al.* (2017), *Annual Research Review: Digital health interventions for children and young people with mental health problems—a systematic and meta-review*. *J. Child Psychol. Psychiatr.* 58: 474–503. doi: 10.1111/jcpp.12663.

²Erbe, D. *et al.* (2017), *Blending face-to-face and internet-based interventions for the treatment of mental disorders in adults: Systematic review*. *J. Med. Internet. Res.* 19: e306. doi: 10.2196/jmir.6588.



Implementing mental health support in schools faces many challenges

By Dr. Jessica Edwards

Child and Adolescent Mental Health recently published a review compiled by Brioney Gee and colleagues on the factors that affect the delivery of mental health support within schools. The researchers identified 50 studies that reported barriers or facilitators to implementing interventions for adolescent emotional disorders delivered in educational settings. They found several important factors, including barriers of practical and logistical problems, and facilitators of quality training and supervision.

Gee *et al.* make a series of recommendations. First, young people and education professionals should contribute to select school-based interventions that can be practically delivered. Second, suitable procedures should be developed to identify those who would most benefit from the interventions. Third, continuous, high-quality training and support must be available. Fourth, plans should be made to deal with logistical challenges of the school routine and environment. Fifth, a senior-level champion in the school should promote a school culture that prioritises mental well-being. Sixth, health

and education policy should promote a shared focus on young people's mental health.

This review was limited to studies conducted in high-income countries. Studies that aim to understand the factors that impact the delivery of mental health support in schools in low and middle-income countries are also warranted. In addition, more studies on how psychological interventions are implemented in sixth form and further education colleges are needed.

Referring to:

Gee, B., Wilson, J., Clarke, T., Farthing, S., Carroll, B., Jackson, C., King, K., Murdoch, J., Fonagy, P. & Notley, C. (2020), *Review: Delivering mental health support within schools and colleges – a thematic synthesis of barriers and facilitators to implementation of indicated psychological interventions for adolescents*. *Child Adolesc. Ment. Health*. doi: 10.1111/camh.12381.



Is neurocognitive functioning linked to a family history of a suicide attempt?

By Dr. Jessica Edwards

Jason Jones and researchers in Philadelphia have studied a subsample of participants from the Philadelphia Neurodevelopmental Cohort to understand whether neurocognitive functioning is associated with a family history of a suicide attempt. Jones *et al.* matched 501 participants (aged 8-21 years) who had a family history of a suicide attempt with ~3,000 participants with no such family history. They then compared measures of neurocognitive function between the two groups.

Those with a family history of a suicide attempt exhibited poorer executive function, attention and language reasoning than those with no family history. The researchers thus consider that further studies are now warranted to investigate whether neurocognitive deficits might serve as an endophenotype for suicide risk. If so, neurocognitive functioning could potentially be targeted in interventions to prevent or treat suicidal behaviours in at-risk youth.

Referring to:

Jones, J.D., Boyd, R.C., Calkins, M.E., Moore, T.M., Ahmed, A., Barzilay, R., Benton, T.D., Gur, R.E. & Gur, R.C. (2020), Association between family history of suicide attempt and neurocognitive functioning in community youth. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13239.

Glossary:

Endophenotype: observable characteristics that are influenced by genes and that contribute to disease vulnerability.



South Carolina leads the way in developing a school mental health system

By Dr. Jessica Edwards

In 2018, a shooting incident at a high school in Florida led the Governor of South Carolina and key leaders in education and mental health services to collaborate on ensuring safety in schools. One agreed target was to have a mental health expert working in every school in the state by 2022. Now, researchers in South Carolina have provided an update to Child and Adolescent Mental Health on the efforts underway to expand school mental health services in the state.

Cheri Shapiro *et al.* outline the premise of five key initiatives ongoing in South Carolina: (1) the Pee Dee Resiliency Project, (2) the South Carolina Center of Excellence in Evidence-Based Intervention, (3) the Upstate Child Protection Training Center, (4) the Engaging and Training with Compassion Project, and (5) the Behavioural Alliance of South Carolina. All five initiatives involve collaborations with diverse groups of stake-holders, researchers and leaders in mental

health. Despite their different angles and approach, the common aim of these projects is to produce a leading school mental health system.

Shapiro and colleagues hope that these initiatives in South Carolina might be replicated and extended to other regions. As demonstrated in South Carolina, schools can work effectively with academic and community partners to build a mental health workforce that serves children, young people and families.

Referring to:

Shapiro, C.J., Collins, C., Parker, J., Martinez, S., Olson, S. & Weist, M.D. (2020), *Coalescing investments in school mental health in South Carolina. Child Adolesc. Ment. Health*. doi: 10.1111/camh.12382.



What do young patients need when transitioning from child to adult mental health services?

By Dr. Jessica Edwards

Researchers have examined the ethical values that people expect to underpin the transition from child and adolescent mental health services (CAMHS) to adult mental health services (AMHS). Lesley O'Hara and colleagues studied focus groups in Croatia, Ireland and the UK that involved a total of 111 participants aged from 16 to 60 years. Most of the participants had experience of mental health problems, either personally or involving a family member or close friend. The participants contributed to discussions on the ethical principles and challenges underlying this critical healthcare transition.

The issues that emerged broadly fell under the categories of: (a) desired practice, (b) who should decide, (c) the process of decision-making and (d) potential harm(s). In terms of desired practice, all groups clearly expressed the view that all young people should have equal access to mental health services. The discussions held on who should decide on the mental health care pathway were more complex: some believed that young adults should decide on their own mental health care, while others felt that experienced clinicians were better placed to make these decisions. The participants favoured a collaborative approach

to the decision-making process – promoting the young person's autonomy, providing information, and supporting parents – which should take place ahead of time. Finally, all groups raised concerns about the potential harm of stigma about attending AMHS.

Overall, the researchers believe that engaging with young people early in the decision-making process will likely improve the trust between the practitioner and the patient. They propose that alternatives to AMHS should be identified if the young person is concerned about the stigma associated with adult mental health care.

Referring to:

O'Hara, L., Holme, I., Tah, P., Franic, T., Vrljičak Davidović, N., Paul, M., Preet Singh, S., Street, C., Tuomainen, H., Schulze, U., McNicholas, F. & the MILESTONE Consortium. (2020), A cross-cultural qualitative study of the ethical aspects in the transition from child mental health services to adult mental health services. *Child Adolesc. Ment. Health*. doi: 10.1111/camh.12377.




Depressed mood, inattention and worry might influence the risk for other symptoms in youth

By Dr. Jessica Edwards

Youth psychopathology has traditionally been conceptualized and measured at the level of disorders, which are highly heterogeneous and comorbid. However, there is growing evidence that focusing on the causes of individual symptoms might be useful.¹ Adding to this evidence base, researchers in the USA have now studied the longitudinal relationships between internalizing, externalizing and attention symptoms using a cross-lagged panel network analysis approach.

To do this, they harnessed data from a large cohort of 4,093 9- and 10-year-olds who were enrolled in the Adolescent Brain Cognitive Development study.² These children were assessed for symptoms using the Brief Problem Monitor, three times over the course of 12 months. Then, they estimated the relationships between symptoms at the two earliest time points and evaluated how well they could predict symptoms at the final 12-month time point.



“We found that individual symptoms were differentially related to risk for other symptoms 6 months later”, says lead author Carter Funkhouser. “For example, depressed mood, worry, and inattention strongly predicted other individual symptoms 6 months later, whereas other symptoms such as guilt and destructiveness did not. Considering the clinical presentation of children is a story of co-occurring disorders, focusing on individual symptoms might be a useful path forward.”

This study’s observational design and methodological considerations implies that causal inferences cannot be made at this stage. However, the researchers believe that there is a possibility that individual symptoms can cause each other. Now, studies that aim to delineate the nature and underlying mechanisms of the relationships between depressed mood, inattention, and worry and other symptoms are warranted. The researchers hope that eventually we might move a step closer to understanding the viability of intervening on these specific symptoms in affected children.

Referring to:

Funkhouser, C.J., Chacko, A.A., Correa, K.A., Kaiser, A.J.E. & Shankman, S.A. (2020), *Unique longitudinal relationships between symptoms of psychopathology in youth: A cross-lagged panel network analysis in the ABCD study*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13256.

References:

¹Borsboom, D. (2017), *A network theory of mental disorders*. *World Psychiatry*, 16,5-13. doi: 10.1002/wps.20375.

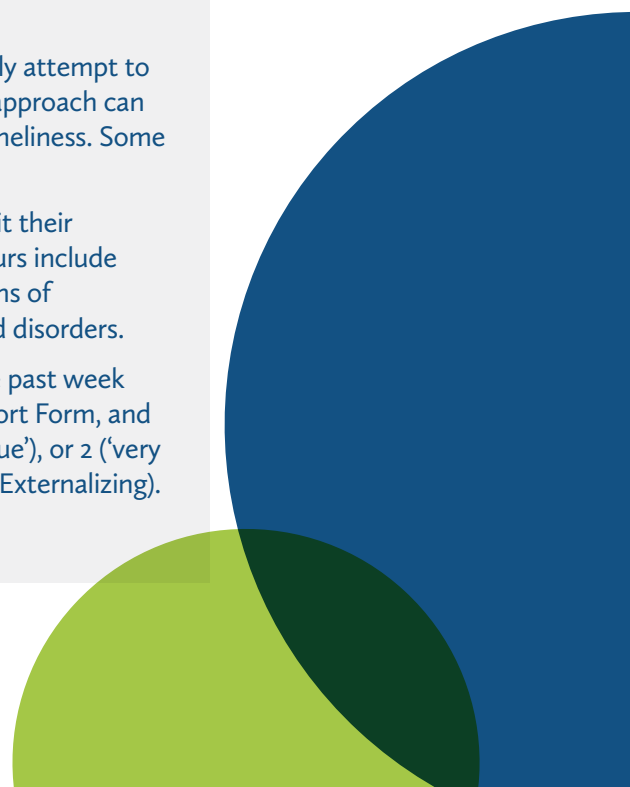
²Garavan, H. et al. (2018), *Recruiting the ABCD sample: Design considerations and procedures*. *Dev. Cogn. Neurosci.* 32, 16-22. doi: 10.1016/j.dcn.2018.04.004.

Glossary:

Internalizing problems: individuals with internalizing problems typically attempt to conceal their maladaptive emotions and cognitions. This internalizing approach can manifest as depression, withdrawal, low self-esteem, anxiety and/or loneliness. Some affected individuals might also exhibit suicidal behaviours.

Externalizing problems: individuals with externalizing problems exhibit their maladaptive thoughts and emotions externally. Characteristic behaviours include impulsivity, and antisocial or aggressive behaviours. Adult manifestations of externalizing problems can include alcohol-related or substance-related disorders.

Brief Problem Monitor (BPM): The BPM assesses symptoms over the past week using 19 items drawn from the Child Behaviour Checklist, Teacher Report Form, and Youth Self Report. The items are rated as 0 ('not true'), 1 ('somewhat true'), or 2 ('very true') and are categorized into three domains (Attention, Internalizing, Externalizing).





Do we remember more when learning before bedtime?

By Dr. Jessica Edwards

Researchers at the University of York have found that children with poor reading comprehension have a lower capacity for vocabulary learning than children with good comprehension. This relative learning impairment is apparent even when new vocabulary is not reliant on text comprehension. Despite these difficulties, however, poor comprehenders seem to have a good ability to retain new knowledge once it is learnt.

The study by Emma James et al. involved tracking the retention of new words taught at different times of the day in 15 children with good and 15 children with poor comprehension aged 8-12-years-old. The children were taught 12 words either early in the morning or as close as possible to bedtime, and were then tested immediately, 12-h and 24-h later. As a control, the children also completed a spatial memory task to test whether any weaknesses were specific to linguistic information processing.

The team also found that learning close to bedtime might benefit long-term memory in both groups of children. Specifically, the recall of word-forms seemed to improve over-sleep and post-sleep wake and had long-lasting benefits up to 1-2 months later.

“These preliminary findings suggest that this bedtime benefit might be particularly helpful for children with a weak vocabulary”, explains James. “Understanding whether we can time learning to improve retention of new vocabulary is an important direction for new research — especially given that literacy activities usually take place in morning schooling”. Given that children with poor comprehension had good retention of new knowledge, James et al. speculate that efforts to improve initial learning could have long-lasting effects.

Referring to:

James, E., Gaskell, M.G. & Henderson, L.M. (2020), *Sleep-dependent consolidation in children with comprehension and vocabulary weaknesses: it'll be alright on the night?* *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13253.

Does DNA methylation link sleep disturbances to mental health problems?

By Dr. Jessica Edwards

Sleep disturbances have long been linked to mental health problems in children,¹ but the underlying mechanisms of this relationship are unclear. DNA methylation — an epigenetic mechanism that regulates the way in which genes are expressed in response to genetic and environmental influences — is one possible mechanism that might underlie the sleep–mental health axis.² Now, for the first time, researchers in the Netherlands have tested whether this is the case in the general paediatric population.

Maria Koopman-Verhoeff and colleagues recruited >450 children aged 10 and 11 years old to their study. They measured genome-wide DNA methylation levels in blood samples, collected information on sleep and mental health problems using questionnaires, and monitored sleep duration by actigraphy. Then, they conducted network analyses to test whether there were any associations between sleep and mental health outcomes with DNA methylation patterns across genes.

The researchers found that typical variation in sleep among children, as measured using actigraphy, is indeed associated with DNA methylation. Many of the DNA methylation patterns identified were located in genes that have been previously linked to sleep by genetic studies, including *MAPT*, an important gene for brain function.³ Interestingly, this association was not evident when using self-reported sleep data. Furthermore, the identified DNA methylation module associated with sleep was not associated with mental health outcomes.

“It is intriguing that DNA methylation patterns associated with sleep were not also associated with mental health in this cohort, despite evidence that sleep and mental health are strongly related”, explains corresponding author Charlotte Cecil. “It is therefore possible that factors other than DNA methylation explain the relationship between sleep and mental health – something that will need to be researched in future”.

Going forward, the researchers hope to understand whether their identified DNA methylation patterns are influenced by specific environmental factors, and whether these could be targeted in future to promote healthy sleep in children.



Referring to:

Koopman-Verhoeff, M. E., Mulder, R.H., Saletin, J.M., Reiss, I., van derHorst, G.T.J., Felix, J.F., Carskadon, M.A., Tiemeier, H. & Cecil, C.A.M. (2020), *Genome-wide DNA methylation patterns associated with sleep and mental health in children: a population-based study*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13252.

References:

¹ Gregory, A.M. et al. (2016), *Annual Research Review: Sleep problems in childhood psychiatric disorders—a review of the latest science*. *J. Child Psychol. Psychiatr.* 57: 296–317. doi: 10.1111/jcpp.12469.

² Morales-Lara, D. et al. (2018), *Dad’s snoring may have left molecular scars in your DNA: The emerging role of epigenetics in sleep disorders*. *Mol. Neurobiol.* 55: 2713–2724. doi: 10.1007/s12035-0409-6.

³ Dashti, H.S. et al. (2019), *Genome-wide association study identifies genetic loci for self-reported habitual sleep duration supported by accelerometer-derived estimates*. *Nat. Commun.* 10: 1100–1112. doi: 10.1038/s41467-019-08917-4.

Glossary:

Actigraphy: the continuous measurement of movement during sleep using a non-invasive, wearable device known as an actigraph.



ICD-10 versus ICD-11: the effects of PTSD diagnoses

By Dr. Jessica Edwards

2018 saw the release of the 11th edition of the International Classification of Diseases (ICD-11) by the World Health Organization.¹ Here, substantial changes relative to ICD-10 were made to the criteria for post-traumatic stress disorder (PTSD). There are now a smaller number of core symptoms, with sleep and concentration difficulties removed, but functional impairment has been added. In addition, a new disorder — complex post-traumatic stress disorder (CPTSD) — has been defined. The criteria for CPTSD are the same as those for PTSD, but with the addition of disturbances in self-organization.

Now, data from a study recently published in the *Journal of Child Psychology and Psychiatry* have shed light on the clinical utility of these revisions in the ICD-11. “Initial conceptualisations of CPTSD suggested it was most likely to occur as a response to repeated or severe trauma histories; as such, CPTSD won’t be commonly assessed following a single traumatic event”, explains corresponding author Dr Caitlin Hitchcock. “We felt that it was important to explore whether rates of CPTSD are indeed low in young people exposed to a single traumatic event, as the ICD-11 diagnostic criteria don’t actually list repeated trauma as being necessary for a CPTSD diagnosis”.

To address this question, Hitchcock and colleagues analysed data collected from children and adolescents aged 8-17 years old,² at 2-4 weeks and 9 weeks after attending hospital after experiencing a single traumatic event. They then calculated and compared the prevalence, specificity and predictive value of ICD-10 and ICD-11 PTSD criteria and CPTSD.

First, they found that the ICD-11 criteria were more clinically conservative in diagnosing PTSD compared to the ICD-10 criteria (but not compared to the DSM-IV or -5 criteria). These findings suggest that the transition from ICD-10 to ICD-11 might reduce the number of young people deemed eligible for PTSD treatment if the service uses the ICD -11 PTSD diagnosis as an intake criterion. Second, they found that CPTSD following a single traumatic event was indeed uncommon. However, 90% of children with ICD-11 PTSD met at least one of the self-organization criteria for CPTSD, some as early as 2 weeks after a single traumatic event.

“Although few young people met the criteria for CPTSD, we were interested to find that many of the participants with PTSD did endorse some CPTSD features, mainly interpersonal difficulties and affect dysregulation”, says Hitchcock. “It will be important for future research to further explore the nature of these symptoms”. Future evaluations of the ICD-11 with a larger and more varied sample are now warranted.

“We felt that it was important to explore whether rates of CPTSD are indeed low in young people exposed to a single traumatic event, as the ICD-11 diagnostic criteria don’t actually list repeated trauma as being necessary for a CPTSD diagnosis.”

Referring to:

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Glossary:

Complex post-traumatic stress disorder: a diagnostic category introduced by the World Health Organization’s classification system (ICD-11). Affected patients must meet the full criteria for PTSD, as well as exhibit (i) affect dysregulation, (ii) negative self-concept and (iii) disturbances in relationships.