Background An association between constipation and faecal incontinence (CC/FI) and cognitive impairment (CI) (such as learning difficulties, autism spectrum disorders, attention deficit hyperactivity disorder), has been frequently reported in the paediatric population. The pathophysiology of patients with both CI and CC/FI and the impact of such phenomenon on their wellbeing remain scarce.

Objectives Investigate the characteristics of children with the co-existence of CC/FI and CI presenting to the service, based on pathophysiology, symptom severity, well-being and quality of life (QoL).

Methods Prospective data of 282 children attending the service were reviewed, including demographics, bowel assessments: St Mark's Incontinence Score (SMIS) and Cleveland Constipation Score (CCS), risk of distress (PI-ED) and QoL (PedsQL 4.0). The use of the Wong Baker Smile faces (scale of 0–10 [10 most severe]) assessed patient perspective on symptom severity. High resolution anorectal manometry (HRAM) and transit marker studies (TMS) were performed to assess pathophysiology. Data of 69 patients were identified with CC/FI and CI were analysed with χ^2 test and Pearson's r , both at significance levels of 0.05.

Results In total 69 (24.5%) patients with CC/FI and CI were identified with a male predominance (53 males; median 8 years; range birth–18 years). Patients presented with 11 (15.9%) organic pathologies: Hirschsprung disease in 8 (11.6%) and anorectal malformation in 3 (4.3%) and 58 (84.1%) with functional CC/FI. HRAM demonstrated abnormal physiology in 31/65 (47.7%) patients. TMS was abnormal in 27/63 (42.9%) patients: slow transit in 10 (15.9%) and rectal evacuatory disorder in 17 (27.0%). Symptom severity was a median of 10; (range 4–10). Abnormal SMIS scores in 52 (75.4%) and 58 (84.1%) CCS scores were found. Poor QoL was demonstrated in 42 patients (64.6%) and risk of distress in 25 (38.5%). There were no significant differences found between patients with and without CI regarding assessments and physiology. However, patients with CC/FI and CI demonstrated significantly lower QoL mean scores and higher symptom severity and risk of distress mean scores ($p < 0.05$) (table 1).

Abstract 1293 Table 1 Comparison of patients with CC/FI [only] and both CI and CC/FI [both].

(Note: total numbers are dependent on those patients who underwent the test/questionnaire).

NS: not significant

PI-ED	CC/FI	CC/FI	<i>p</i> value
Score: ≤ 19 no risk; 20 borderline; ≥ 21 risk of distress	[both]	[only]	
median total score	17.0	14.0	$p < 0.05$
PedsQL			
Score: ≤ 60 low; 61–80 good; ≥ 81 excellent QoL			
median total score	50	67	$p < 0.05$
Severity Symptom Score scale of 0–10 [10 most severe]			
median score	10	8	$p < 0.05$

Conclusions

- Develop a specialist interest in CI in patients with CC/FI.
- Improve working between community and tertiary services.

- Focus on these group of patients with CI as they are more complex to manage.

Case control studies may accurately identify the relative impact of CC/FI and CI on both QoL.

International Child Health Group

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SLEEP DISTURBANCES IN CHILD AND ADOLESCENT REFUGEES AND ASYLUM SEEKERS: A LITERATURE REVIEW

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10.1136/archdischild-2021-rcpch.537

Background The importance of sleep in childhood and adolescence is hard to overestimate. A lack of sleep in young people affects their attention and reaction times, stunts behavioural and intellectual growth and significantly increases psychological morbidity.

The UN Refugee Agency reported 70.9 million forcibly displaced people by the end of 2018, half of which were children. This represents a huge number of children who have experienced traumatic events. Hence, the relationship between these lived experiences and young people's sleep is important to understand.

Objectives The aim of this paper is to review the evidence concerning the prevalence, causality, and effects of sleep disturbances in refugee, asylum seeker and internally displaced children, with the objective of clarifying the factors contributing to sleep disturbances and its consequences.

Methods The review identified fifty-two papers that investigated sleep disturbances experienced by young people of refugee or asylum-seeking status. After the application of exclusion criteria, a total of fourteen papers were found to be relevant. Interviews and questionnaires of either parents and/or children make up the study data, with those under the age of twenty-five defined as young people.

Results All papers, bar one, acknowledged that there was a relationship between trauma and persecution and significant sleep disturbances. There was an increased Sleep Onset Latency and reduced Total Sleep Time, directly correlating with the existence of PTSD symptoms. Hence, those who had PTSD symptoms took longer to fall asleep than those without, and both groups took considerably longer than the (US) national average.

Several papers found that the welfare of the family network surrounding the child had the greatest bearing on their ability to sleep well. A protective factor was both parents having arrived with the child in the country of refuge. Another element thought to be related to the child's sleep disturbances is the loss of trust in the child concerning the ability of their parents to keep them safe.

The level of progress along the journey of leaving a place of war or system of oppression to arriving and being granted asylum in a new country had a strong bearing on the level of sleep disturbance experienced by a child. In particular, the traumatic experiences that occur in their home country is of greater importance than the displacement process on the psychological sequelae leading to sleep disturbances of the child.

Conclusions This review highlights that sleep may be a preferential indicator of poor mental health than screening tools for PTSD and other mental health disorders, with its lack of cultural bias towards mental health diagnoses. It also demonstrates the importance for medical professionals to actively screen for sleep disturbances in asylum-seeking, internally displaced or refugee child upon first contact. Additionally, an awareness of their underutilisation of medical services and welfare of the family network is crucially important and so a multi-faceted approach of caring for the whole family is key.

British Association for Community Child Health

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EFFECTS OF CONTINUED FOLIC ACID SUPPLEMENTATION DURING THE SECOND AND THIRD TRIMESTERS OF PREGNANCY ON CHILDREN'S NEUROCOGNITIVE DEVELOPMENT AT 11 YEARS

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10.1136/archdischild-2021-rcpch.538

Background Peri-conceptional folic acid (FA) supplementation is known to prevent neural tube defects. It remains uncertain whether continuing FA after the first trimester has benefits for offspring development. A previously published follow up study of Mothers who had participated in a randomized trial of FA Supplementation in the Second and Third Trimesters (FASSTT) in pregnancy and who had received 400 micrograms/day FA or placebo from the 14th gestational week until the end of pregnancy showed their offspring at both 3 and 7 years scored significantly higher than the placebo group in word reasoning and cognition.

Objectives Follow up investigation of 11 year old children, whose Mothers had participated in a randomized trial of FA Supplementation in the Second and Third Trimesters (FASSTT) in pregnancy and received 400 micrograms/day FA or placebo from the 14th gestational week to determine if previous improvement in Cognitive performance and brain function persists in this age group.

Methods Mother-child pairs who undertook the FASSTT trial (healthy pregnant women aged 18–35 years with singleton pregnancy) and who had taken 400 micrograms/day of FA in the first trimester were randomized to receive FA supplements or placebo until the end of pregnancy. When the child was 11 years old Mother-child pairs were recruited by invitation to undergo assessment of the child's Cognitive performance by the Wechsler Intelligence Scale for Children (WISC-IV). Assessors were blinded to the treatment allocation of the Mother during the FASSTT trial. In a sub sample of participants, magnetoencephalographic (MEG) brain imaging was performed to assess brain functioning through estimating neuronal activity in relation to semantic processing of language. Related covariates including general health and lifestyle measures, socioeconomic status, anthropometry including BMI status, B-vitamin biomarkers and nutritional dietary analysis

were evaluated. Statistical analysis was performed using the Statistical package for the Social Services software.

Results Of the 119 mother-child pairs in the FASSTT trial, 68 children were assessed for neurocognitive performance at 11-year follow up (Dec 2017 to Nov 2018). Children of mothers randomized to FA compared with placebo scored significantly higher in two Processing Speed tests i.e. symbol search (mean difference 2.9 points, 95% CI 0.3 to 5.5, $p=0.03$) and cancellation (11.3 points, 2.5 to 20.1, $p=0.04$), whereas the positive effect on Verbal Comprehension was significant in girls only (6.5 points, 1.2 to 11.8, $p=0.03$).

MEG assessment of neuronal responses to a language task showed increased power at the Beta (13–30 Hz, $p=0.01$) and High Gamma (49–70 Hz, $p=0.04$) bands in children from FA-supplemented mothers, suggesting more efficient semantic processing of language.

Conclusions Continued FA supplementation in pregnancy beyond the early period currently recommended to prevent NTD, can benefit neurocognitive development of the child. MEG provides a non-invasive tool in paediatric research to objectively assess functional brain activity in response to nutrition and other interventions. Our findings add considerably to the existing evidence that have linked maternal folate status in pregnancy with neurocognitive outcomes in the older child. This evidence reinforces our previous findings in these children and suggest that continued FA intervention in pregnancy beyond the early period is beneficial to future neurocognitive development.

Quality Improvement and Patient Safety

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TO ACHIEVE A FULL, QUALITY AND INTERPRETABLE ROUTINE EEG RECORDING IN 95% OF ALL CHILDREN AND YOUNG PEOPLE FOR WHOM AN EEG IS REQUESTED

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10.1136/archdischild-2021-rcpch.539

Background There is an estimated 1.2 million children, young people and adults with a learning disability in England, of which approximately 10–17% display challenging behaviour. Additionally, 1 in 3 also have epilepsy, with prevalence ranging from 6–50% depending on the severity of the learning disability. An EEG (Electroencephalogram) is therefore often required to aid in the diagnosis, but this can be difficult to achieve in this cohort of patients due to levels of understanding and cooperation.

Additionally, neurotypical children referred for clinical procedures often encounter high levels of anxiety and distress and those who are not adequately prepared for health interventions are more likely to have poor experiences as well as increased anxiety. This can result in fearfulness of healthcare professionals and failure to attend follow-up appointments.

Objectives To investigate ways to alter our approach and improve the experience for patients attending for EEG, thereby improving the quality of the recorded EEG to optimise the accuracy of epilepsy diagnosis within the service.

To reduce the waiting list times from referral to EEG recording from 6 weeks to 4 weeks in line with NICE guidance (NICE CG137, 1.6.3).