

Research roundup: June 2024

In this section, a range of brief synopses of recently published articles that may be of interest to health visitors is presented. The aim of this roundup is to provide an overview, rather than a detailed summary, of the research papers selected. Should you wish to look at any of the papers in more detail, a full reference is provided.

Use of an infant-toddler checklist at 18 months

This new study analysed the outcomes of using an Infant-Toddler Checklist (ITC) in child health services in Sweden in toddlers aged 18 months. The authors note that disorders involving language and communication can start early and can significantly and adversely impact the child for the remainder of their life. To identify such disorders, professionals require a validated screening tool, and the researchers suggest the ITC on which they based their study as one such tool.

The children were each assessed by the visiting child health nurse at their 18-month visit when they were aged between 17 and 22 months. The team used the RE-AIM implementation framework, which helped them to assess the implementation of the ITC, analysing outcomes for reach, effectiveness, adoption, implementation and maintenance. There were 2633 children, 1717 being in the pre-implementation group and 916 in the post-implementation group. To assess reach, the Dahlberg et al looked at the ITC completion rate. To assess the adoption of the tool, they analysed the use of the tool at each site, and to assess effectiveness, comparisons were made between referral rates to speech and language therapy, as this would infer that the potential disorder had been picked up early and led to referral to a specialist clinic for treatment.

The reach was 93%, which increased from 80% over the course of 2 years during the study period. Every centre involved used the ITC,

demonstrating that it was well adopted. The researchers found that the rate of positive screens using the ITC was 14%. The referral rate was 0.4% pre-implementation, and 6.9% following its use across sites, thus proving a strong effectiveness in identifying cases earlier for referral to specialist speech and language services. The researchers concluded

Dahlberg A, Levin A, Fäldt AE. Implementation of the Infant-Toddler Checklist in Swedish child health services at 18 months: an observational study. *BMJ Paediatr Open*. 2024;8:e002406. <https://doi.org/10.1136/bmjpo-2023-002406>

that the ITC was associated with positive reach, high referral rate, 100% adoption and a sustained maintenance of its use over a period of 2 years. **JHV**

Treating pregnant women with a history of depression

In a recent issue of *NPJ Women's Health*, this study examined the effects of antidepressant use by women in pregnancy on the risk of preterm birth. Previous research has linked preterm birth to major depressive disorder and antidepressant use, but has lacked consistency. The researchers sought to analyse this risk by making use of primary care electronic health records.

The authors included 216 070 deliveries of 176 866 babies in the



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UK, between 1996 and 2019. While assessing for risk, they also assessed the outcomes for untreated depression in patients included in the study. In the main cohort, 17 615 preterm births were identified, which made up 8.2% of the participants in that cohort. Significantly and interestingly, the researchers found that preterm birth increased in association with the mother having a history of depression for those who were taking serotonin reuptake inhibitors (SSRIs) prior to their pregnancy but who stopped during their pregnancy, whereas patients who continued taking the antidepressants in the first 22 weeks of gestation were not found to be at increased risk of preterm birth.

In those mothers with a history of depression who continued their exposure to SSRI treatment, there was a reduction in risk of several common medical conditions throughout the follow-up period. This research may help to provide prescribers with the knowledge base and confidence needed when deciding about the safety and efficacy of antidepressant treatment for women with a history of

depressive disorder on SSRIs who wish to have a baby. It may be reassuring for these patients to be made aware that their risk is not expected to heighten if they continue use of their SSRIs and that not interrupting their use of their medication may even result in improvements regarding other health outcomes following the birth of their baby. **JHV**

Amit G, Yanover C, Bivas-Benita M et al. Antidepressant use during pregnancy and the risk of preterm birth – a cohort study. *npj Womens Health*. 2024;2:5. <https://doi.org/10.1038/s44294-024-00008-0>

Effects of early life media exposure on sensory processing

A study that questions the safety of early-life exposure to digital media has been published in a recent edition of *JAMA Paediatrics*. In it, Heffler et al question whether such exposure may be associated with the presentation of atypical sensory

processing. They noted a sparsity in the research available for any risk factors associated with atypical sensory processing, and highlighted the difficulties it presents for children and their families.

The study was conducted across multiple centres in the United States, with data taken from the National Children’s Study (NCS). The NCS looked at environmental influences on paediatric health, and any associated developmental outcomes. The data were gathered between 2011 and 2014, and analysed in 2023. Every participant included from the NCS had reports completed by their caregiver of digital media exposure and sensory processing.

Exposure was assessed according to whether the child had viewed TV or video at 12 months, 18 months, and 24 months of age, according to the amount of hours watched per day. There were 1471 children involved in the study. Exposure to TV and digital media was found to be linked to atypical sensory processing, whereby screen exposure at 12 months was linked with a two-fold increase in the risk of scoring high for low registration. The chance of being in the ‘low’ rather than ‘typical’ category for sensation-seeking and sensation-avoiding was decreased.

By 18 months, they identified that a higher amount of screen exposure was linked to a heightened risk of high sensation avoidance, as well as low registration. The team found that at 24 months, a higher amount of media exposure was linked to a heightened risk of high sensation-seeking, sensory sensitivity, and sensation avoiding.

These are significant findings, which indicate the possible dangers of early-life digital media exposure and its association with atypical sensory processing. This early life exposure may, therefore, cause children to develop atypical sensory profiles, which are likely to be on the increase in the next generation of babies in the modern-day, digitally-saturated world. Screen time has an



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important role in present society and boundaries surrounding this should be well informed and implemented, with parents making decisions based on their understanding of the risks involved. Health visitors may play a role in supporting new parents to make informed decisions around this.

They note the need for further research which can focus more on the sensory-related development of the child and behaviour in later childhood. Another area of interest would be whether minimising such exposure can actually improve sensory-related outcomes.

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Heffler KF, Acharya B, Subedi K et al. Early-life digital media experiences and development of atypical sensory processing. *JAMA Pediatr.* 2024;178(3):266–273. <https://doi.org/10.1001/jamapediatrics.2023.5923>

Referral pathways for children with atopic diseases in Denmark

Atopic diseases such as atopic dermatitis, food allergy, allergic rhinoconjunctivitis, and/or asthma are

common. In Denmark, however, there are multiple referral pathways for these diseases in the healthcare system and they are poorly understood.

To describe how children with atopic diseases navigate their way through the Danish healthcare system, a questionnaire was distributed to children aged ≤17 years, who were being treated for atopic diseases between August 2020 and June 2021, either by a practising specialist or a hospital department, in the Capital Region of Denmark. A total of 279 children completed the questionnaire and most were referred to a specialist or to a hospital by their general practitioner. No ‘common track’ to hospital existed for patients with ≥3 atopic diseases. These patients were more often referred to a hospital compared with children with 2 atopic diseases or fewer. The primary determinants for hospital treatment were food allergy (OR 4.69; 95% CI 2.07-10.61) and asthma (OR 2.58; 95% CI 1.18-5.63).

In conclusion, the authors suggest that children with multiple atopic diseases were more likely to be referred to hospital departments than to practising specialists, mainly due to food allergies.

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Færk G, Ahlström MG, Lura VH, Reventlow S, Johansen JD, Thyssen JP, Hansen KS, Skov L. Referral Pathways for Children with Atopic Diseases in Denmark. *Acta Derm Venereol.* 2024 Jun 3;104:adv34961. doi: 10.2340/actadv.v104.34961

Neonatal mortality rate among births of mothers at extreme ages of reproductive life in low- and middle-income countries

This research sought to illuminate neonatal mortality patterns and associated factors, particularly among mothers at extreme ages. This understanding is crucial for developing targeted interventions and informed policy strategies. It builds on existing evidence that, maternally, extreme ages significantly impact neonatal survival in low- and middle-income countries.

The outcome variable of the study was neonatal mortality, which was defined as whether a baby lived or died within the neonatal period. Considering the hierarchical nature of the data (household and cluster/community level) and the setting of

the study at the inter-country level, the explanatory variables of the study were grouped into three levels. The first level included individual or household variables. The second level included community-level variables, and the third level included country-level variables. The study included a total of 43 countries that had standard Demographic and Health Surveys (DHSs) during this specified time period. These countries represent a diverse range of contexts and populations.

The pooled prevalence of neonatal mortality rate among neonates born to mothers at extreme ages of reproductive life in low- and middle-income countries was found to be 28.96 neonatal deaths per 1000 live births at a 95% CI (28.13, 29.82). The prevalence of neonatal mortality in this study was higher than the average global rate of 18 neonatal deaths per 1000 live births.

The rate of neonatal mortality in this study was also far higher than the global SDG target 3.2 of reducing the neonatal mortality rate (NMR) to 12 or fewer deaths per 1000 live births by 2030. This implies that in low- and middle-income countries, neonatal mortality is high among neonates born to mothers at extreme ages of reproductive life. Therefore, neonates born to mothers at extreme ages of reproductive life in low- and middle-income countries need special emphasis to improve neonatal survival and/or reduce the neonatal mortality rate.

Male babies, low and high birth-weighted babies, those born to mothers with no or low education, delivered at home, singletons, babies born with a small preceding birth interval, and those without postnatal checkups faced elevated risks of neonatal mortality. Additionally, neonates born in countries with high fertility and low literacy rates were

also vulnerable. These findings underscore the urgent need for targeted interventions tailored to mothers at extreme ages. **JHV**

Tamir TT. Neonatal mortality rate and determinants among births of mothers at extreme ages of reproductive life in low and middle income countries. *Sci Rep.* 2024 Jun 1;14(1):12596. [https://doi: 10.1038/s41598-024-61867-w](https://doi.org/10.1038/s41598-024-61867-w)

JHV Research Roundup is edited by Aysha Mendes, Freelance Journalist specialising in psychology and healthcare.

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