September 21st, 2023 11:00 - 12:30

PARALLEL SESSION 13 – BRAIN 3

ID 229. SOCIAL AND NEONATAL RISK PROFILES IN EXTREMELY AND VERY PRETERM BORN CHILDREN: THE IMPACT ON DEVELOPMENTAL OUTCOMES AND SUPPORT AT 5.5 YEARS

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Background

Outcomes after extremely (EP) and very preterm (VP) birth have mostly been studied from a biomedical perspective with little attention for social/environmental factors. Lack of improvements in developmental outcomes and long–term effects of interventions mark the importance of narrowing this knowledge gap. This study aimed to describe the EP/VP population in terms of social and neonatal risk exposure, and to study associations between risk and intelligence, motor skills, behaviour, and use of specialised care and education at 5.5 years.

Methods

Samples included 553 EP (<28 weeks' gestation) and 1497 VP (28–31 weeks) born children from the French population–based EPIPAGE–2 cohort. Ten

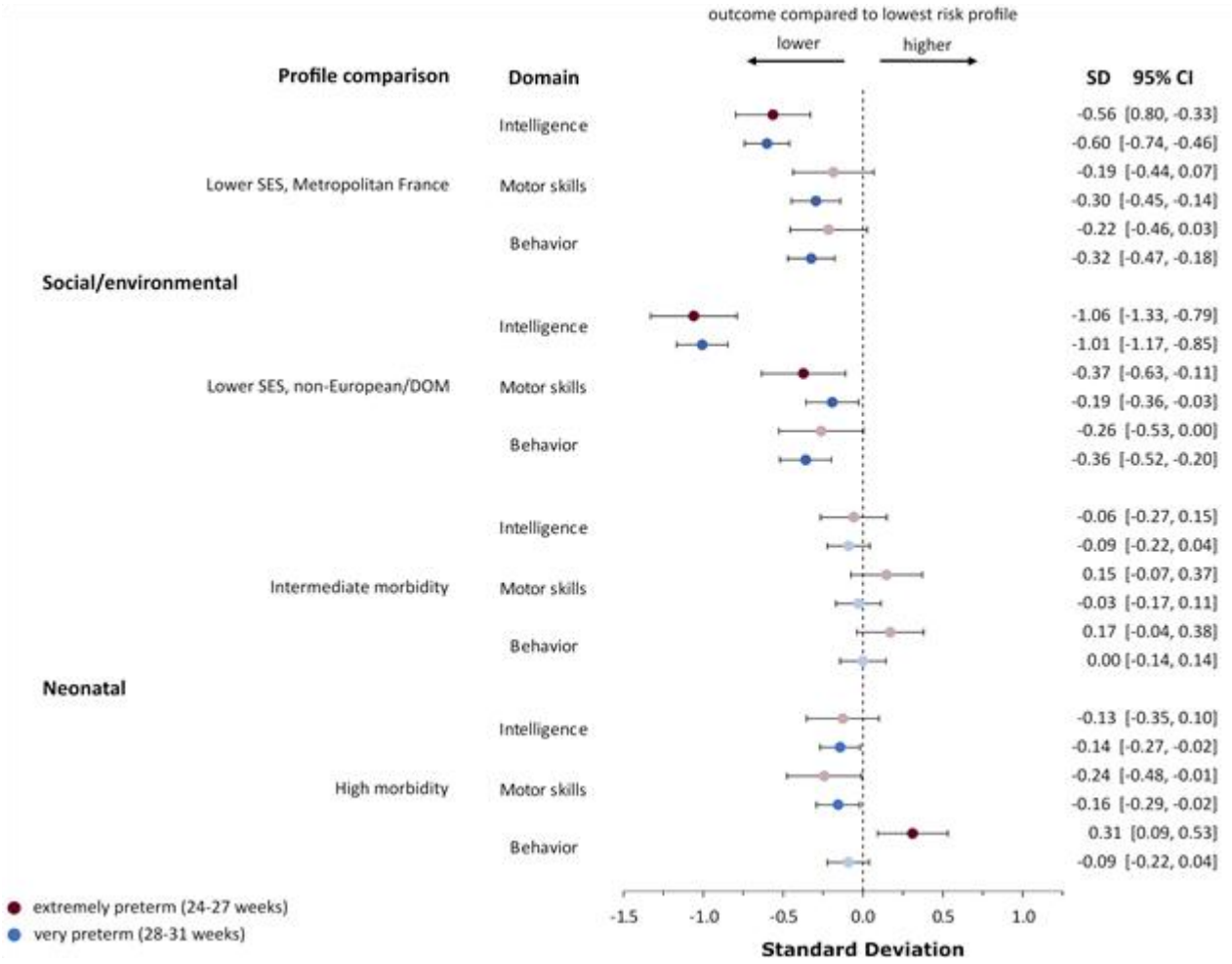
social/environmental factors measuring five aspects of the environment (socio-professional status, education level, minority status, family composition, and neighbourhood) and six neonatal factors were used to compose social and neonatal cumulative risk indices and to identify latent profiles. Regression models were used to test associations of cumulative risk and risk profiles with outcomes.

Results

A higher socioeconomic status (SES) subgroup was distinguished from two lower SES subgroups that mainly differed in country of birth of parent(s). Neonatal risk profiles were characterised by lower, intermediate, and high morbidity. Cumulative risk was associated with worse outcomes. Lower SES subgroups showed poorer outcomes, particularly for intelligence. Children with parent(s) born in non-European countries or French overseas departments had the poorest outcomes but received the least specialised care and education. Boys received more specialised support than girls, irrespective of neurodevelopmental impairments.

Conclusion

The important role of social factors in developmental outcomes and social and sex disparities in support suggest that a considerable proportion of EP/VP children does not reach their full potential. The largest gains are to be made in lower SES groups. Social factors should be considered in identifying high-risk infants and increased efforts must be made to reach children from disadvantaged backgrounds for monitoring and support. The environment provides ample opportunities to intervene, particularly on modifiable factors and mechanisms that link social factors with children's outcomes. However, this research is still in its infancy. Thus, opportunities are far from being exploited, which offers hope for the future.



Associations of social/environmental and neonatal risk profiles with intelligence, motor skills, and behaviour in the extremely and very preterm sample. For all domains, lower SD indicates worse functioning.

Associations of social/environmental and neonatal risk profiles with intelligence, motor skills, and behaviour in the extremely and very preterm sample. For all domains, lower SD indicates worse functioning.

None declared

ID 412. Psychiatric and Behavioral Disorders in Children born Extremely Preterm in 2006 compared with 1995: The EPICure Studies

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Background:
Changes in neonatal care over the last two decades have resulted in improved survival for children born extremely preterm (EP), but this has not yet been paralleled by improvements in neurodevelopmental outcomes. Less is known about trends over time in behavioral outcomes. The aim of this study was to investigate the prevalence of psychiatric and behavioral disorders in EP children born in 2006 compared with those born in 1995.

Methods:
Comparison of two prospective longitudinal cohort studies of children born 22–25 weeks' gestation in England: EPICure (born in 1995) and EPICure2 (born in 2006). EP children in these cohorts were assessed at 11 years of age alongside a contemporaneous group of term-born children. Parents and teachers completed the Developmental and Well Being Assessment (DAWBA) from which DSM-IV research diagnoses of common mental and behavioral disorders were assigned.

Results:

In EPICure 176 EP and 153 term-born children were assessed, compared with 112 EP and 143 term-born children in EPICure2. DAWBA data were obtained for 91.5% and 93.5% of EP and term-born children in EPICure, and in 67.9% and 68.5% of EP and term-born children in EPICure2 respectively. EP children in both cohorts had higher prevalence of psychiatric disorders than their term-born peers [EPICure: 26.1% vs. 9.1%; EPICure2: 38.2% vs 3.1%]. Rates of emotional disorders, attention-deficit/hyperactivity disorder (ADHD) and autism spectrum disorders (ASD) were higher for EP than term-born children in both cohorts.

Comparing EP children in EPICure2 with those in EPICure, there was no significant difference in the prevalence of any psychiatric disorder, emotional disorders, conduct disorders or ADHD. EP children in EPICure2 had an increased odds of ASD compared with EP children in the EPICure cohort (OR 2.8, 95% CI 1.3, 6.2), however this difference was not significant after adjusting for confounders.

Conclusion:

Children born EP are at increased risk for mental and behavioral disorders compared with term-born peers at 11 years of age. Mental health and behavioral outcomes have not improved over time. Professionals involved in the follow-up of EP children should be aware of the ongoing risk of psychiatric and behavioral disorders throughout childhood following EP birth.

	EPICure (22-25 weeks, England)		EPICure2 (22-25 weeks, England)		EPICure EP vs Term-born [A vs. B]				EPICure2 EP vs Term-born [C vs. D]				EPICure2 vs EPICure [C vs A]			
DAWBA Assigned Research Diagnosis	EP [A] N=161 % (n)	Term-born [B] N=143 % (n)	EP [C] N=76 % (n)	Term-born [D] N=98 % (n)	Unadj OR (95% CI)	p	Adj OR (95% CI)*	p	Unadj OR (95% CI)	p	Adj OR (95% CI)*	p	Unadj OR (95% CI)	p	Adj OR (95% CI)*	p
Any psychiatric disorder	26.1% (42)	9.1% (13)	38.2% (29)	3.1% (3)	3.5 (1.8, 6.9)	**<0.001**	2.7 (1.2, 5.9)	**0.013**	19.5 (5.7, 67.5)	**<0.001**	13.2 (3.6, 48.7)	**<0.001**	1.7 (1.0, 3.1)	0.060	1.2 (0.5, 2.5)	0.712
Any emotional disorder	9.3% (15)	2.1% (3)	13.2% (10) [N=75]	2.0% (2)	4.8 (1.4, 16.9)	**0.015**	5.2 (1.1, 24.2)	**0.033**	7.3 (1.5, 34.3)	**0.012**	7.4 (1.5, 36.3)	**0.014**	1.5 (0.6, 3.5)	0.371	1.1 (0.4, 3.2)	0.847
Any conduct disorder	5.6% (9) [N=147]	6.3% (9) [N=138]	5.3% (4) [N=56]	0.0% (0) [N=77]	0.9 (0.3, 2.3)	0.795	0.5 (0.1, 1.6)	0.233	—	**0.034**[c]	—	—	1.0 (0.3, 3.2)	0.936	1.3 (0.2, 6.7)	0.780
Any ADHD	12.2% (18)	2.9% (4)	23.2% (13) [N=75]	2.6% (2)	4.7 (1.5, 14.2)	**0.006**	4.4 (1.2, 16.6)	**0.030**	11.3 (2.4, 52.6)	**0.002**	9.0 (1.7, 48.5)	**0.010**	2.2 (1.0, 4.8)	0.056	1.5 (0.5, 4.2)	0.492
Any ASD	8.7% (14)	0.0% (0)	21.3% (16)	0.0% (0)	—	**<0.001**[c]	—	—	—	**<0.001**[c]	—	—	2.8 (1.3, 6.2)	**0.008**	1.6 (0.6, 4.6)	0.361

* Binary logistic regression - adjusted for sex, IMD at 11y, and severe disability (one or more of the following: Mental Processing Index >3 SD below term-born mean (<67), GMFCS/MACS ≥3, no useful hearing with aids, no useful vision or only sees gross light/movement)

[b] Binary logistic regression - adjusted for sex, gestational age, birthweight Z score, IMD at 11 years, multiple births, maternal age at birth, age at assessment (<11 and ≥11 years) and severe disability

[c] Fisher's Exact/Chi squared test as logistic regression not possible due to 0 term-born ASD diagnoses

Prevalence of DSM–IV psychiatric and behavioral disorders in extremely preterm (22–25 weeks of gestational age) and term–born children in the EPICure and EPICure2 cohorts at age 11 years.

Prevalence of DSM–IV psychiatric and behavioral disorders in extremely preterm (22–25 weeks of gestational age) and term–born children in the EPICure and EPICure2 cohorts at age 11 years.

Neil Marlow declares financial relationships with InfanDx (ongoing), Novartis (ongoing) and Takeda (now ended) unrelated to this study. No other conflicts of interest or financial relationships to disclose.