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Accepted for publication in Early Years Educator January 2017

Published 28 February 2017 doi.org/10.12968/eyed.2017.18.12.32

Developmental risk and early care and education for children born prematurely

Globally, 15 million babies are born prematurely (preterm) each year, representing 11% of all live births. In the UK, around 7% of children are born preterm each year. This means that, on average, one in 14 babies is born preterm, and two children in an average sized primary school class are born preterm (Wolke et al, 2015). Each year in England, around 10,000 children are born very preterm (at less than 32 weeks gestation) and a further 60,000 are born moderately preterm (at 32-36 weeks gestation). The number of preterm births has increased in the last two decades, and more preterm children are surviving due to improved neonatal care (National Neonatal Audit Programme, 2015). Children born prematurely may also be born with low birth weight (less than 2,500 g), very low birth weight (less than 1,500 g) or extremely low birth weight (less than 1,000 g).

Completed weeks of gestation																				
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
All Preterm															Term					
Very Preterm										Moderate			Late							
Extremely																				
22 to 27 weeks Babies born extremely preterm are at high risk for intellectual impairment and physical disability later in life. Although the vast majority attend mainstream school, just over half require some degree of special educational support.						28 to 31 weeks Children born very preterm are at high risk for cognitive deficits and attention, behaviour and emotional problems at school age.					32 to 36 weeks Most preterm babies are born late and moderately preterm. Even these babies born a few weeks early are at slightly higher risk of developmental problems than babies born at term.					Preterm birth In the UK, around 7% of babies are born preterm each year. This means that two children in an average sized primary school class are likely to have been born preterm.				

Figure 1: Wolke, D., Johnson, S., Jakel, J., and Gilmore, C. (2015) The impact of preterm birth on mathematics achievement and schooling: briefing notes and recommendations
Nuffield Foundation

Children born prematurely and/or with low birth weight have a history of biological vulnerability and a greater risk of developmental problems. In particular, children born very preterm have been found to experience specific learning problems including difficulties with mathematics, visual-spatial skills, memory and attention. The most common adverse outcomes following preterm birth are cognitive problems (for example, lower IQ, poor executive function and working memory), learning difficulties, social difficulties (for example, autism spectrum disorders, difficulties interacting and forming relationships with peers), behavioural problems (for example, attention problems, attention deficit/hyperactivity disorders), emotional problems (for example, anxiety disorders, phobias), and poor motor coordination (for example, cerebral palsy and clumsiness).

These kinds of difficulties can impact on a child's inclusion in early years settings and later on at school. They may also have problems with attachment and sensory play. As a consequence, very preterm children are at increased risk for poor academic attainment and special educational needs (SEN) compared with their term-born peers. In addition difficulties with mathematics have been reported to be especially common among very preterm children. Children's mathematics skills have been suggested to be important for their future health and wellbeing, employment prospects and income as an adult (Wolke et al 2015).

There is still much we do not know about the nature and spectrum of these learning difficulties, their long term consequences, and how to deal with them. In particular, there is controversy about whether moderately preterm children experience similar but milder learning problems than children born very preterm. Teachers, educational psychologists and

early years professionals receive little formal training about preterm birth and are often not aware of appropriate strategies to support preterm children in educational settings. Informing professionals about the special constellation of problems following preterm birth is crucial in preparing them to support the growing number of preterms entering early years settings and schools in the coming years (Campbell, 2015).

The benefits of early care and education early intervention (EI) have been well documented in policy and research in terms of improving outcomes for children at risk of or identified with SEN. Whilst not all children born prematurely will be identified with SEN, ongoing monitoring of their learning and development has the potential to ameliorate any future delays or difficulties (Blackburn, 2016). This means that early years professionals and the wider early years workforce need to be equipped with knowledge about the bio-psycho-social consequences of premature birth, including

Currently in England, neonatal professionals have significantly more knowledge about the long term consequences of premature birth than early years or other education professionals (Wolke et al, 2015). Whilst this is not surprising, it raises concerns about appropriate support and intervention for young children born prematurely in early years settings as well as school support later on.

In particular early years professionals, teachers' and the wider education workforce need to know more about the most common difficulties faced by children born preterm, namely mathematics difficulties, attention deficits and difficulties interacting with peers. Without this, children born prematurely may not receive appropriate support in the areas they need it the most. In a recent study, Wolke et al (2015) found that over 80% of teachers and over 50% of educational psychologists have received no formal training about preterm birth. Over 80% of both teachers and educational psychologists requested more information about the

educational consequences of preterm birth to better equip them to support preterm children in school. Training early years and other education professionals about preterm birth is crucial in preparing them to support the growing numbers of preterm children entering early years settings and schools in the coming years. (Wolke et al 2015).

Very preterm children may be born up to four months before their due date and may have to enter school less mature than their peers and this may be compounded by low birth weight or very low birth weight which presents further risk. The issue of delayed school entry is important for parents of preterm children to consider. Delaying school entry may be beneficial because teachers may not be able to provide the same adult-child ratio as early years settings or have the knowledge about child development that early years professionals do. Children born prematurely therefore may not receive developmentally appropriate teaching if they start school at the age-appropriate time. Delayed entry may therefore prevent psychological pressure and negative feedback due to developmental immaturity (Wolke et al, 2015).

In order to find out what parents Dr. Carolyn Blackburn from the School of Education and Social Work and Dr. Merryl Harvey from the School of Health have undertaken a survey of family experiences of having a child born prematurely. In relation to early care and education, parents have stressed the need for early years professionals to be trained specifically about the needs of children born prematurely and their families, especially in relation to developmental norms and expectations. This includes the organisers of parent and toddler groups and other parents that visit them in order to reduce pressure on parents for their child to conform. In particular, they would like more training for health professionals such as Health Visitors about the socio-emotional needs of children and families when children are born prematurely so that parents do not feel pressured.

It is also important for early years professionals to be aware that a premature birth often represents a pregnancy that ended abruptly and for parents this can create a sense of loss, especially if the newborn spends a significant amount of time in neonatal care where the parent and child bonding process is far less naturalistic than would normally be the case.

In order to effectively support children born prematurely early years professionals need to be equipped with knowledge about developmental risk of premature birth and low birth weight. Further to this, a rigorous process of monitoring and assessment of developmental outcomes is necessary with a focus on socio-emotional development in order to assess any risk from early difficulties with attachment and bonding. A range of professionals might be involved in the assessment of children born prematurely from neonatal outreach teams to speech and language therapists and psychologists. Following this, early years professionals might have the opportunity to support the child with targeted multi-disciplinary interventions to support particular areas of development. Working from the child's strengths as a foundation for future success is important. A relational approach to supporting children and families is key to ensuring the best outcomes for children. This would include:

- A reflective empathetic professional approach;
- Respect for family patterns, interactions and priorities;
- Celebration of each child's (and families') strengths and competencies;
- A willingness and ability to explain both *why* and *how* interventions are chosen and model to parents in an empowering way;
- Enthusiasm to work with children within the context of families;
- Ability to think contextually and holistically about children;
- Ability to take account of other professional disciplines.

Crucially, early years professionals are in an ideal position to ask key questions about pregnancy and the child's early experiences in the home on entry to the setting. Questions about prematurity and early relationships will provide the opportunity for discussion with parents about risks and possible outcomes as well as possible support. Ensuring that transition to school is carefully managed so that teachers are made aware of developmental risk and developmentally appropriate strategies for children born prematurely is also crucial. The charity BLISS <https://www.bliss.org.uk/> provide a range of resources and support for parents and professionals about babies born sick or premature.

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