Children's health and development: approaches to early identification and intervention

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ABSTRACT

Many children arrive at school with problems of development and behaviour which affect their educational achievement and social interaction and can have lifelong consequences. There is a strong association between developmental vulnerability at school entry and a well-documented series of parent and family risk factors, often linked to social disadvantage. Strategies which are likely to make a difference to these children and improve outcomes include family support, high-quality early education and care programmes in the preschool years, and early detection of emerging problems and risk factors. The evidence suggests that these services and programmes are best delivered within a framework of progressive universalism—a universal basket of services for all children and families, with additional support commensurate with additional needs. This provides the best opportunity for early identification and appropriate intervention for emerging developmental problems and family issues that impact on children's development. While there are a number of challenges that need to be addressed and overcome, such an approach is an important investment that will yield measurable educational, social and economic benefits over the long term.

CHILDREN'S HEALTH AND DEVELOPMENT: APPROACHES TO EARLY IDENTIFICATION AND INTERVENTION

The problem

Across the developed world, there are huge inequalities in health, education and social adjustment, and there is an intense interest in many sectors of society in identifying and addressing the causes.[1] The seeds of failure are often sown in early childhood—many children have problems that affect their development, educational progress and social interactions. While some of these have a diagnosed condition, for example, specific language impairment, autism spectrum disorder or attention deficit hyperactivity disorder, the majority never acquire a specific diagnosis but may have difficulties nevertheless in behaviour, attention, language or other domains of development.

The proportion of children with difficulties in one or more of these domains when they start school varies according to the definitions used and the populations studied. Whole population data from Australia indicate that around 12% of children at school entry have teacher-rated difficulties in at least two of these domains and are categorised as 'developmentally vulnerable'.[2] Substantial proportions of children have additional care needs identified by parents in the USA and teachers in the UK before or at school entry. Chronic illness and permanent disabling conditions account for only a small minority of these, between 2% and 3% of all children.

The very large numbers of children who are developmentally vulnerable present a challenge to government and to preschool services. In this article, we summarise the evidence in support of a more broad-based approach and multidisciplinary approach to causation, prevention, early identification and intervention than has been the case in the past and discuss how this might be implemented.

Strategies for prevention and intervention

The maxim that prevention is better than cure is particularly relevant to childhood. Preconception counselling, antenatal and intrapartum care, neonatal care and newborn screening programmes make a significant contribution to reducing the incidence of disabling conditions that have an identifiable biological basis, for example, hearing impairment or cerebral palsy, and facilitating their early detection. In contrast, the much more common difficulties that contribute to developmental vulnerability seldom have a single cause. There is a genetically determined variability in the natural abilities of all children, genetic factors may in part account for some specific developmental difficulties.[3] Avoidable environmental factors such as alcohol consumption and smoking in pregnancy sometimes contribute. However, there is also compelling evidence of a strong relationship between child developmental outcomes and the parents' social background, income and education—often grouped together as socio-economic status (SES). This evidence suggests that adverse outcomes are not inevitable and that appropriate intervention has the potential to increase 'school readiness', reduce the number of children needing extra support at school and reduce the risk of poor outcomes in childhood and throughout the life course.[4]

The strategies to achieve this goal fall broadly into three categories—family support and parent training programmes, early childhood education and care, and the early detection of actual or potential developmental or behavioural problems. The evidence suggests that all three are needed for maximum impact.

The influence of the family

Children of parents from low SES families and disadvantaged communities are at greater risk of developmental vulnerability at school entry when compared with children from higher SES families.[5] The magnitude of this risk may be proportional to the number of risk factors in the family[6]—these include teenage motherhood, low maternal

education, harsh parenting, maternal mental or physical health problems, family conflict or antisocial behaviour, and household unemployment. Adverse experiences in early childhood may have long-term effects on neuroendocrine function[7] and increase the risk in adult life for a range of mental and behavioural problems, obesity, heart disease, drug and alcohol misuse, and criminality.[8] Suboptimal parenting may be the link with the risk factors listed above as the quality of the young child's experiences, in the home and outside, plays a crucial role in the child's development.[9] For example, low SES children have on average less preschool exposure to spoken language, books and play opportunities than those in higher SES families.[10] Conversely, positive parenting can redress the potentially negative effects of poverty or family disadvantage.[11]

Family support and parenting programmes

Intensive support programmes are available for parents who have difficulty in providing a nurturing environment for their children because of poverty, limited personal resources, family dysfunction, substance abuse, negative experiences of being parented themselves or low expectations of their child's development.[12] Some parents do not readily engage with professional services[13] or do not enrol their children in early years services. Peer support programmes can offer guidance and help in understanding child development, behaviour and early learning in ways that may be acceptable to some such families.[14]

The evaluation of the many available programmes and determining what works and for whom presents many research challenges,[15] and it is recognised that engaging parents in such programmes may be especially difficult in families affected by intimate partner violence or where there are child protection concerns. The effectiveness of parenting and home visiting programmes is related to personal characteristics and stability of staff, their training and supervision, the intensity and duration of the programme, fidelity to programme content and whether they respond to parents' perceived needs. They are most effective when linked to high-quality early child education and care (ECEC).[12]

Early child education and care

The most consistently effective early childhood intervention is high-quality ECEC. A meta-analysis of 125 studies concluded that preschool was associated with substantial benefits for cognitive and socio-emotional outcomes often through to adulthood, and those with an educational emphasis had larger effect sizes.[16] Similar benefits to those demonstrated in randomised controlled trials on small populations can be replicated with larger groups; a large-scale ECEC intervention for disadvantaged children demonstrated later benefits in adulthood in terms of higher educational and SES, improved health and less participation in crime.[17] General population studies from the USA, England and Denmark indicate that the quality of universal preschool is critical for longer-term beneficial effects (box 1).[18] In one English study, for example, after controlling for background influences, the comparison of high-quality ECEC versus none revealed effect sizes of around 0.2 of a SD for literacy to around 0.4 for numeracy, with similar effects for social development.[19]

While for the general population, part-time ECEC from the age of 2 years produces benefits, and for disadvantaged children, some ECEC at an even younger age can also be beneficial.[20] As children from disadvantaged families stand to gain the most, it could be argued that publicly funded high-quality ECEC should be offered only to the most disadvantaged children. However, the evidence also indicates that universal access to high-quality early learning experiences (ECEC) has universal benefits.[21] Access to ECEC for 15 h a week (or more) should be universal for children from the age of 3 years and arguably from the age of 2 years. This evidence of benefit has fuelled interest in universal ECEC provision as a strategy for improving children's development and their subsequent social, economic and occupational success.[22] Universal high-quality ECEC may be regarded as an essential part of the infrastructure for the social and economic health of a nation, a view supported by WHO, the UN, OECD and the European Commission.[23]

Box 1 The components of high-quality early child education and care

1. Responsive adult–child interaction.
2. Well-trained staff.
3. Facilities that are safe and accessible to parents.
4. Ratios and group sizes that foster appropriate interactions.
5. Staff development that ensures continuity, stability and improving quality.
6. A developmentally appropriate curriculum with educational content.

Early detection of developmental and behavioural problems

It is intuitive that early identification of emerging problems in young children is desirable and that it will lead to effective intervention and improved outcomes. Responding to parental concerns is important as a way of identifying children with possible behavioural or developmental problems, but is not sufficient on its own.[24] Distinguishing between trivial or transient difficulties and those that are potentially more serious can be challenging. Cultural and language barriers, social circumstances or depression can impact on the capacity of parents to recognise problems and seek help, and some parents have difficulty engaging with and communicating with professionals.[13]

Screening for developmental and behavioural problems

The concept of professional checks on every child's health and development at various ages is intuitively attractive and was the rationale for the introduction of screening protocols in well-child healthcare and school entrant assessment in many countries.[25] In developed nations, however, most children with major disabilities are not identified through formal screening programmes—rather, they are identified either by professionals responding to parental concerns or by close follow-up of those children at biological risk, for example, very low birthweight babies.[26 27] In spite of an extensive body of published research, the contribution of screening programmes to the reliable identification of subtle or emerging behavioural and developmental problems is still controversial and there are wide variations in policy and practice between countries.[28] This is partly because of the practical difficulties in maintaining programmes, the availability and cost of professional staff, non-compliance with screening protocols and incomplete coverage of the most at-risk populations. A more important reason is that screening tests for developmental and behavioural problems ignore the complexity and dynamic nature of child development. Screening programmes rely on a clear distinction between those who have and do not have the target disorder; this is not the situation with developmental and behavioural difficulties, which exist on a continuum.[29] Development is characterised by considerable

variability in the sequence and rate at which various skills emerge and behaviours change.

In the first 3 years of life, measures of development do not reliably predict future progress or ability, and the developmental course and prognosis of early difficulties in communication, social interaction, spoken language or behaviour is often uncertain. The inherent difficulties in reliably recognising even specific conditions such as autism spectrum disorders or language impairment within the first 3 years of life are an obstacle to commencing very early intervention programmes. The diagnosis of these conditions becomes more stable after the age of three; correlations can increasingly be discerned between patterns of language development and future reading problems[30]; and the probability that some behavioural problems, such as aggressive behaviour, will resolve spontaneously declines as the child gets older.[31]

Opinion in the UK and Australia is that currently available screening procedures for autism, speech and language problems and behavioural problems do not fulfil the scientific criteria for a whole population screening programme.[29] This does not mean that identification is unimportant; rather that other strategies, such as providing information for parents about normal development and behaviour, and appropriate training for early years professionals, are needed to ensure timely access to specialised interventions.

The role of early years professionals

A recent report stated that "Monitoring progress … is key to identifying special educational needs and disability…".[32] Early years settings offer the opportunity to observe a child's development over time and respond to parental or professional concerns, to recognise when there appears to be a delay in development or difficulties in social interaction with peers and to seek advice when behavioural patterns such as poor impulse control or aggressive behaviour are not resolving or responding to simple measures.

A universal ECEC service could thus provide a platform for monitoring each child's progress and for timely referral to any specialised assessment and/or intervention services that may be required. Harold Ireton, a psychologist who designed one of the best-known developmental screening tests wrote in 1990: "In the future, health professionals, mental health professionals and educators may be able to collaborate to provide continuity of care, education and support to young children and their parents in ways that will make screening as it is described here obsolete. A longitudinal, developmentally oriented care and educational system could be far superior to any cross-sectional screening approach for meeting the needs of young children in general and children with special needs in particular."[33]

A universal or targeted approach?

Although risk factors for adverse child outcomes are cumulative and can be calculated at a population level on the basis of their SES, home environment and neighbourhood deprivation level, prediction of adverse outcomes is more problematic at the individual level. While simple criteria such as teenage parenthood and more complex risk factor scores have been used to help community health professionals determine which families are most likely to benefit from special services, these approaches are a form of screening and are neither sensitive nor specific. Nevertheless, they are sometimes used as managerial tools to allocate scarce resources.[34]

In the UK, health visitors often use their clinical judgment and knowledge of individual clients to assess families' problems and needs and their parenting skills, together with their resilience and capacity to cope with adversity. Many families require little or no support beyond assurance that development and behaviour are on track, but others have considerable additional needs.[35] The concept of providing additional targeted services, negotiated between professionals and parents according to perceived need, has given rise to the notion of 'progressive' or 'proportionate' universalism; this can be defined as 'support for all', with greater intensity of action for those with greater social and economic disadvantage.[36] Proportionate universalism implies a system that offers health and education services and family support for all families, while directing the more intensive and expensive interventions to those most likely to benefit. It incorporates the three strategies discussed in this paper; family support, ECEC and early identification and intervention of childhood problems.

The case for a universal service

There are benefits in a universal service approach for families with young children. All families with young children should be offered advice and support, together with evidence-based information about key topics such as immunisation, nutrition, reducing the risk of sudden infant death, smoking cessation and injury prevention, as well as informing them about available services. A universal service facilitates the engagement of all parents across the whole range of SES, avoids the risk of stigmatisation linked to targeted services and child protection and increases the likelihood of participation by marginalised groups, as was found with universal services in Sure Start areas in the UK.[37] Furthermore, the benefits of ECEC are maximised for disadvantaged children where children from varying backgrounds are integrated, allowing for positive peer group influences. A universal service provides a structure that facilitates identification of established or emerging problems, and subsequent access to expert assessment and care when parents or professionals have particular concerns about a child.

Barriers to implementation

England's Healthy Child programme promotes shared assessments by health visitors and early years staff with the aim of the early identification of problems or emerging concerns.[38] There is widespread agreement about the evidence for and benefit of comprehensive preschool programmes as described previously, and substantial investment has been made in preschool programmes such as Head Start in the USA and Sure Start Children's Centres in England. Nevertheless, there are obstacles to full implementation of such an approach to early identification and intervention. Within a policy of progressive or proportionate universalism, the allocation of scarce resources between universal services on the one hand, and targeted interventions such as intensive parenting programmes on the other, is the cause of much professional dissent. It is difficult for any one professional to have a complete picture of a child's progress over time or of the support needed by the family, and yet communication between disciplines is often hampered by lack of any shared conceptual understanding of child development and its determinants. This needs to be addressed in professional training. Access to specialist services for assessment and determination of special educational needs varies widely. In England, child care workers and parents have a statutory duty to observe and support the progress of children in a variety of environments but, if they are to achieve the goals set out for them by government, early years staff will need improvements in their training and professional status.[39] Although the use of routine

screening instruments for developmental and behavioural problems is not recommended, early years staff need to be equipped with the knowledge and tools needed to recognise slow or atypical development and take appropriate action.

Cost may also be a barrier to full implementation, though economic analysis and international evidence suggest that the benefits of comprehensive preschool programmes justify the investment.[40] In Sweden, there is evidence of high levels of children's overall well-being and positive specific indicators of child health and educational outcomes. In Cuba, universal access to healthcare and ECEC is associated with child outcomes that equal or surpass those of richer countries. In Canada, an independent economic analysis of a government report proposing universal child and family centres for children from birth to 3 years of age, and thence universal preschool education, calculated that the long-term savings were more than double the costs.

CONCLUSION

It is important to identify and address at an early stage emerging developmental and behavioural difficulties that may have an adverse impact in childhood and throughout the life course. Conventional screening for these problems is not an efficient or effective strategy. The evidence suggests that high-quality early childhood education and care together with parent support programmes have the potential to deliver measurable educational, social and economic benefits for children and their families, particularly those from disadvantaged backgrounds. These benefits can best be achieved by investment in training and a long-term commitment to an early years service that integrates education, health and social care.

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