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## Editorial

# Supporting Child Health and Development during COVID-19 and Beyond

The number of students in Hong Kong with Special Educational Needs (SEN) has significantly increased in the past few years. There were 42,890 registered students with SEN at public ordinary schools in 2016-2017, with the number increasing by more than 30% to 56,640 in 2020-2021 (28,650 in primary schools and 27,990 in secondary schools). On the one hand, this increase may be related to a greater awareness among parents and professionals, as well as the early identification of SEN children through the new On-site Pre-school Rehabilitation Services (OPRS), which has been extended to more kindergartens in the past few years. On the other hand, there is significant concern about the increasing proportion of children with learning problems due to the impact of COVID-19 pandemic, which has dramatically changed the nurturing environment of many children. Within the wide spectrum of SEN conditions, specific learning difficulties (SLD) and neurodevelopmental disorders including attention deficit/hyperactivity disorder (ADHD) and autism spectrum disorder (ASD) are of particular concern. According to the data submitted to Hong Kong Commission on Children by the Education Bureau on 13 December 2021, among the 56,640 registered students with SEN in the 2020/2021 school year, 23,230 have SLD, 14,580 have ADHD, and 11,870 have ASD. In recent years, there have been an increasing number of students receiving help from after-school learning services and support programs (Education Bureau 2021).

The COVID-19 pandemic has had detrimental effects on many aspects of society including significant changes to children's development and their nurturing environment.<sup>1</sup> In particular, preschoolers and young children have been severely impacted not only in terms of disrupted learning, but also from the adverse effects on their psychosocial and physical health. Moreover, children from disadvantaged backgrounds, particularly those with SEN or with parents having chronic illnesses, are especially vulnerable and at high risk of developmental problems and child maltreatment.<sup>2,3</sup> Neuroscience research in the past few decades has highlighted the importance of a nurturing environment, with adverse experiences and child neglect in early life leading to long-term health, learning, and developmental problems.<sup>4,5</sup> There is emerging evidence on the potential influence of the environment on school readiness, the influence of different aspects of parenting on children's physical and mental wellbeing, and the effects of parent-child interactions and child-focused activities (including physical exercise, nutrition, diet, sleep, and use of electronic devices) on children's development.<sup>6,7</sup>

The human brain grows rapidly during the first few years of life and is nearly fully grown by age 5. The brain grows in complexity within only a short period of time along with the development of the central nervous system and critical sensitive pathways, including vision, hearing, language, response to environment, emotional control, and other social skills.<sup>4</sup> The structure and function of the brain can be modified by the environment, relationships, and adverse experiences in early life. Effective early childhood interventions have been shown to improve children's long-term health, development, and psychosocial outcomes.

The Comprehensive Child Development Service (CCDS) is a government-led family-oriented service that was first piloted in 2005 and then fully rolled out to the whole territory in the past decade. It is a large-scale comprehensive intervention service targeting young children from high-risk families, including those born to mothers with mental health problems, substance abuse, teenage pregnancy, and domestic violence. The key partners of CCDS include specialties and departments such as Paediatrics, Obstetrics, and Psychiatry under the Hospital Authority;

Maternal Child Health Centre and Child Assessment Service under the Department of Health; Integrated Family Service Centres under the Social Welfare Department; and other Non-Government Organisations, which closely collaborate to provide timely assessment and support for disadvantaged children and their families.<sup>8</sup>

Child growth and development are critical components of children's health and well-being, and are closely linked and interact with one another. Wong et al examined the effectiveness of an innovative reading intervention targeted at disadvantaged children under the CCDS. Seventy Hong Kong infants and young children born to mothers with mental health problems, substance abuse, or teenage pregnancy were recruited into the intervention, which prescribed books and provided training to their parents at a community-based clinic.<sup>9</sup> The book prescribing program successfully promoted positive parenting and improved the early literacy development of disadvantaged children, with similar outcomes to quality parent-child interactions in Chinese families.<sup>10</sup> Meanwhile, Choi et al at the United Christian Hospital studied the outcomes of pregnant teenagers and their babies over a 10-year period from 2008 to 2017. They found that teenage pregnancies in Hong Kong were associated with preterm deliveries, increased risk of low birth weight, and developmental delay. Choi et al also examined the risk factors associated with the developmental problems and discussed an approach to reduce these risks through better social support and parental education.<sup>11</sup> The findings from this major cohort study on pregnant teenagers in Hong Kong have extended our understanding of the issues faced by young mothers and their babies in Hong Kong.<sup>12,13</sup>

One of the two original articles in this issue focused on premature pubertal growth, whereas the other focused on the outcome and prognosis of bacterial meningitis and meningococemia. The study by Yang et al explored the clinical effects of the gonadotropin-releasing hormone analogue (GnRH $\alpha$ ) for treating idiopathic central precocious puberty among 54 girls in Baoding, China. They found GnRH $\alpha$  triptorelin treatment was effective in slowing down the height growth rate within the 1-year treatment period, and was able to inhibit the development of gonads and secondary sexual characteristics. Intracavitary ultrasound showed reduced ovaries and uterus volumes, longitudinal/transverse/ anteroposterior ovarian diameter, and transverse uterine diameter, which can serve as a sensitive index for treatment response.<sup>14</sup> The study by Olukman et al examined parameters with prognostic value that can help to evaluate the outcome in acute bacterial meningitis (ABM) and meningococemia. They found the expression of the monocyte HLA-DR was down-regulated in Turkish children with ABM and meningococemia. The low monocyte HLA-DR expression on Day 3 of infection appeared to be a useful marker predicting neurological complications.<sup>15</sup>

Lastly, 19th December 2021 was a memorable day for all paediatricians in Hong Kong and families of special school residents and students with SEN who celebrated Christmas together in Disneyland and the surrounding area. The 400 participants including members and friends of the Hong Kong Paediatric Society along with their children spent a very

special Christmas Sunday with handicapped students and their siblings. This exciting event brought much joy to the participants with many memorable moments that all will cherish. These precious moments remind us of the love and giving during Christmas.

We are looking forward to joining hands with all professionals during this challenging time, as we strive to improve the health and development of our children in need. May God bless Hong Kong and our beloved children.

**P Ip**  
**Associate Editor**

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