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# What the science of child and adolescent development contributes to understanding the impacts of COVID-19

As of 8 September 2020, there were 27 236 916 confirmed cases of COVID-19, including 891 031 deaths reported to the World Health Organization.<sup>1</sup> The direct effects of SARS-CoV-2 (the virus) and COVID-19 (the disease caused by the virus) are infection (of which ~80% of people will have no or mild symptoms), serious illness (~15% requiring hospitalisation and ~5% ventilation) and death (<1%). Of all age groups, children (0–18 years of age) have the lowest risk of the direct effects of the virus and the disease. Understandably, because of this, much of the global focus has been on protecting the elderly and adults with co-morbidities and using country lockdowns to prevent community transmission. What has often been forgotten, however, is that children have the highest risk of all age groups of experiencing the indirect adverse effects of the pandemic and the effects to contain it. As ~20% of deaths occur amongst people over 65 years of age, many children will lose beloved grandparents and older relatives, and many will lose their primary caregiver. Newborn and young children may be separated from their mothers – an experience that can have long-term effects on children's development.<sup>2</sup> Other indirect effects result from actions and the knock-on effects of actions taken to prevent, control and treat the virus. These include societal lockdowns, isolation and quarantine with follow-on negative effects on income and food security, fear and panic, anxiety and depression, altered family and social relations, stigma and, in extreme cases, post-traumatic stress.<sup>3</sup>

The data on the consequences of the pandemic are stark: globally it is predicted that more than a million preventable child deaths will occur<sup>4</sup>; a 'hunger pandemic' is already happening; and tens of millions more children are falling into extreme poverty<sup>5</sup>. Rising rates of malnutrition and stunting are going to massively impact children's cognitive trajectories across the life course.<sup>6</sup> Educationally, the effects on children will be catastrophic, with approximately 1.5 billion children not benefitting from continuous schooling due to rolling lockdowns.<sup>7</sup> We know that for many children, not being in school for a protracted period of time means that they will never return to school<sup>8</sup>; that for millions of children without digital access there will be no 'home schooling'; and it will be the poorer children that will fall even further behind<sup>9</sup>. Most worryingly for disadvantaged families, hundreds of millions of children will not be receiving school meals.

Children of all ages depend on parents and families for health care, nutritious food, protection from harm, opportunities to learn, and love and affection – together comprising *nurturing care*.<sup>9</sup> The youngest children depend on nurturing care to both survive and thrive.<sup>10</sup> The ability of families to provide nurturing care for their children is highly dependent on facilitating environments. Facilitating environments are made up of, amongst others, availability of decent work, housing, health care, social security and laws that support families. As children develop, sources of nurturing care extend to include the wider family network, childcare workers, teachers, community members and, very importantly, friends and peers.<sup>11</sup>

Nurturing care can break down when features of the facilitating environment are perturbed, as has happened during lockdown, for example, and when social relations are disrupted, as occurs with isolation and quarantine. Lack of income, interruption of health services, and poorly implemented social safety nets threaten the health and well-being of children directly. In addition to fear engendered by media and conversations around them, the ability of adults to protect them may be eroded by their own rising anxiety and mental health concerns. People react to stressful situations in different ways. Some may withdraw, becoming cold, distant and emotionally unavailable, which is especially damaging for young children and known to have long-term consequences on their mental and physical health.<sup>12</sup> Others may experience breakdowns in their social and psychological controls, putting them on edge, easily angered and with lowered restraints on lashing out verbally and physically at others, including children. Violence, especially when children are trapped in a space with an aggressive adult, is frightening and especially harmful if recurrent.

A major source of resilience for children is supportive adults beyond the household, such as mentors, extended family and their educators. Lockdowns, isolation, the closure of schools and separation from friends interrupt the usual balancing of adverse and protective experiences that enable children to cope on a day-to-day basis. They also interrupt the rich informal learning that occurs in children's interactions with teachers, coaches, mentors and friends that complement formal school education in imparting knowledge and skills that are critical to personal and social adjustment. Networks of friends are especially important for adolescents, in helping young people to negotiate their growing independence and the demands of family, school and society.<sup>13</sup> Being confined to home with parents whose vigilance and control is heightened by their own fear, is especially frustrating for adolescents, who may themselves withdraw or lash out.<sup>13</sup>

There is no doubt that some children and adolescents will be damaged by the direct and indirect effects of SARS-CoV-2 and COVID-19. The century-old science of child development demonstrates the harmful effects of babies separated from mothers in their first months after birth; of children experiencing uncontrollable fear without the mediating reassurance of confident adults and food secure environments; the long-term consequences on the health and well-being of children and adolescents living with withdrawn or depressed parents, and of the physical, emotional and sexual abuse of children.<sup>2</sup> The damage experienced in childhood, especially among young children who have not yet developed some independent mechanisms of emotional regulation, has been shown to manifest



throughout life in poor school achievement, lack of healthy and satisfying relationships, unstable mental health, lower levels of work productivity and less social stability.<sup>6</sup>

On the flip side, children who experience the nurturing care of family and friends and who live in environments that meet their basic needs, have enormous reservoirs of resilience.<sup>14</sup> Preserving child and family well-being will ensure that children remain developmentally on track and will help to offset the effects of the ongoing, varied and increasing adversity that many are faced with at this time.<sup>15</sup> Children's coping mechanisms are strengthened by restoring daily routines, by engaging them actively in solving and resolving difficulties and by the support of group activities with their peers.<sup>16</sup> Children can be powerful health promoters, as demonstrated by child-to-child campaigns, and eager adopters of rules and guidelines to protect themselves and others. Thus, they can be active agents in supporting public health approaches to dealing with the pandemic.

The foundations of human well-being are laid down in childhood, and it is no hyperbole to state that the future well-being of our societies depends on the enabling environments we create and nurturing care we provide for our children today and across their life course. Neglecting the profound implications of this pandemic on children – both in the present as well as in the immediate post-COVID-19 world – will be a key determinant of whether our societies thrive in the future. We have a window of opportunity to ensure that just because children and adolescents carry the lowest risk of infection, we do not consign them to a multitude of other risks across their lifetime.

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