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COVID-19, food and nutrition insecurity and the wellbeing of children, pregnant and lactating women: A complex syndemic

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Authors' Contributions

All authors have read and approved the final manuscript. R.P-E wrote the first draft, K.C. and V.H.M reviewed and provided feedback that led to substantive changes to original draft.

Abstract

Globally, the COVID-19 pandemic has already led to major increases in unemployment and is expected to lead to unprecedented increases in poverty and food insecurity, as well as poor health and nutrition outcomes. Families where young children, pregnant and lactating women live need to be protected against the ongoing protracted pandemic and the aftershocks that are very likely to follow for years to come. The future wellbeing of the vast majority of the world now depends on reconfiguring the current ineffective food, nutrition, health and social protection systems to ensure food security for all. Because food, nutrition and social protection are intimately linked with health in a multidirectional way, it is essential that that we fully address global and local food, health care, and social protection systems and the inter-relationship among them. Implementation science research will be needed to fill in the current major gaps. Not doing so will not only put the development of individuals at further risk, but also negatively impact on the development potential of entire nations and ultimately our Planet.

Key words: COVID-19, pandemic, food systems, health care systems, food insecurity

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Key messages

- COVID-19 pandemic has increased household food insecurity (HFI)
- HFI negatively affects the physical and mental health of children, pregnant and lactating women
- HFI increases the risk of undernutrition, obesity and non-communicable diseases which in turn increase the risk of COVID-19 following a syndemic paradigm
- During pandemics, it is imperative that food assistance and social protection programs respond rapidly to ensure access to healthy and nutritious foods, especially among families that are the most socio-economically vulnerable and have young children and pregnant and lactating women
- Important to reconfigure the current ineffective food, nutrition, health and social protection systems to ensure food security for all

Commentary

Globally, the COVID-19 pandemic has already led to major increases in unemployment (International Labour Organization, 2020a) and is expected to lead to unprecedented increases in poverty (International Monetary Fund, 2020; International Labour Organization, 2020b), as well as poor physical and mental health. COVID-19 is expected to hit particularly hard the food, nutrition and health security of vulnerable groups including young children, pregnant and lactating women (UNICEF, WHO, WFP, & FAO, 2020). One mechanism by which this is likely to happen is through a major decline in food security which exists when 'all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life' (FAO, 2006). Indeed, 'The [COVID-19] pandemic may well devastate livelihoods and food security, especially in fragile contexts and particularly for the most vulnerable people working in the informal agricultural and nonagricultural sectors. A global recession will majorly disrupt food supply chains' (Global Network Against Food Crises, 2020). Global evidence shows that this direct increase in food insecurity would be a serious public health concern as household food insecurity (HFI) has been shown to negatively affect caregiver mental health and that this in turn has a negative impact on early child development outcomes (Pedroso et al., 2020; Pérez-Escamilla & Vianna, 2012) as young children cannot receive the nurturing care that they need (Nurturing Care for Early Childhood Development, 2020). HFI in early life has indeed been consistently associated with child internalization and externalization of problems, behavioral problems in school and poor academic performance and intellectual outcomes once those children become school age (de Oliveira et al., 2020). HFI has also been associated with family chaos (Fiese et al., 2016; Rosemond et al., 2019) and intimate partner violence (Diamond-Smith et al., 2019) and may be associated with suboptimal infant feeding practices, possibly related to perceived insufficient milk of food insecure women (Webb-Girard et al 2012; Orr et al 2018). HFI increases the risk of chronic undernutrition and infectious diseases in children, maternal anemia, obesity (especially among adult women) and the development of non-communicable diseases (NCDs), including type 2 diabetes (FAO 2019), which in turn are risk factors themselves for poorer prognosis in COVID-19 patients (Watanabe et al. 2020). This follows a clear syndemic paradigm (Singer & Clair, 2003), where two or more coexistent diseases act synergistically to cause excess burden of disease in a population (Swinburn et al., 2017) and highlights how important it is that mitigation of HFI during the COVID-19 pandemic be a national and global priority (Pérez-Escamilla, 2017).

COVID-19 is making access to and availability of food more challenging for many worldwide; in addition to the role of poverty, cross-border trade and internal and external labor migration and employment have resulted in major food system disruptions (International Panel of Experts on Sustainable Food Systems., 2020). For example, in the U.S. massive unemployment and loss of income has led thousands of families where young children live to become food insecure (Bauer, 2020) and need to queue at emergency food distribution centers. Furthermore, the infection of meat packing plant workers in the Midwest has led to the shutdown of such plants and subsequently to pork and poultry shortages nationwide (The Economist 2020a). In addition, the inability to transport produce from the fields to points of distribution has forced farmers to leave behind millions of tons of fresh unharvested produce rotten in the fields (Lush, 2020). Many countries rely on farm workers, often migrant laborers, to plant and harvest crops (Purdy, 2020). COVID-19 has strongly disrupted the movement of farm workers across countries also leading to a shortage of availability and access to staple foods and fresh produce (Purdy, 2020) which in turn may lead to an increased consumption of ultraprocessed foods and beverages. In lower income countries a large proportion of families depend on income generated through the informal economy (International Labour Organization, 2020b). As a result of COVID-19-related movement restrictions many of them have lost their income sources without having social protection available to them (The Economist, 2020b). As recently reported from South Africa and other lower income countries, populations are now more fearful of dying of hunger than of COVID-19 itself (The Guardian 2020) because food supply chains are very unstable and weak compared to higher income countries (Development Initiatives, 2018). In addition, global food trade has been heavily affected as, in countries like India, ships stand in ports without the ability to move basic staples such as rice (Gulf News 2020). With COVID-19 related school closures occurring in nearly 200 countries across the world, more than 368 million school children are currently missing out on school meals according to the latest data from the World Food Programme (Van Lancker & Parolin, 2020; WFP 2020;). Approximately half of these children are in low and lower-middle-income countries. Lost access to school meals is not only impacting on HFI and threatening children's health, but it also affects the most vulnerable families by reducing their income, particularly in rural communities where small-scale farmers represent an important ring in the schools' supply chain.

There is no doubt that COVID-19 has provided a natural experiment to illuminate how unprepared the world is to protect populations against hunger, food, nutrition and health insecurity during global emergency situations. As a result of the major health and social inequities, rapid unplanned urbanization and climate change, these types of pandemics will likely be with us for the years to come. Since 2019 the world has been affected by the H1N1, SARS, MARS, Ebola and currently the COVID-19 pandemic. We now have an opportunity to rethink the dysfunctional global food system upon which the vast majority of the world now depends and reconfigure the types of programs and policies that are needed to ensure food security for all, including young children, pregnant and lactating women (UNICEF, WHO, WFP, & FAO, 2020). We urge donors to fund research that focuses on food and nutrition implications of pandemics and answers emerging implementation science questions around implementation of social protection programs and policies in these unusual contexts. Research recommendations for moving forward include how to: 1) adapt and continue school feeding and other food assistance programs to continue the provision of meals to quarantined families with young children, pregnant and lactating women; 2) develop equitable effective rapid response systems to prevent or mitigate food insecurity based on complex adaptive systems frameworks (Barnhill et al, 2018; Paina & Peters, 2012) that address the food, nutrition, health care, and social protection systems, and the multiple interrelationship among them, paying special attention to those surrounding households with children, pregnant, and lactating women; 3)

monitor and use surveillance systems to effectively identify and target provision of healthy and nutritious foods to families that are the most socio-economically vulnerable, such as young children and pregnant and lactating women. It is our hope that addressing these questions will protect the health and wellbeing of children, pregnant and lactating women and their families in the complex syndemics world in which we now live. The ripple effects of the COVID-19 pandemic will be negatively affecting the food and nutrition security, health and well-being families with young children, pregnant and lactating women for years to come (GAIN, 2020; World Vision, 2020), hence decisive action informed by sound implementation science research is needed now! Not doing so will not only put the development of individuals at further risk, but also negatively impact on the development potential of entire nations and ultimately our Planet (Pérez-Escamilla, 2017; Swinburn et al., 2019).

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