

Children of the Syndemic

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ABSTRACT

The term syndemic was developed by medical anthropologists to “label the synergistic interaction of two or more coexistent diseases and resultant excess burden of disease.” COVID-19 has exposed and exacerbated societal inequalities among children through differential indirect effects on family financial security, social adversity, mental health, and educational access, among other things.

Using a child rights-based approach, the review examines how the syndemic has impacted aspects of the life of children, such as healthcare access, educational access, and family economic circumstances.

The examples of the impact of the pandemic and existing inequities, the syndemic, given throughout the review are only a snapshot of the broad effects of the pandemic on the lives of children worldwide. Children have been spared by the worst direct clinical effects of COVID-19, but the indirect effects have been severe.

Pediatricians and their organizations can contribute by working with non-governmental organizations and advocating for policy decisions at local, national, and international levels, which protect children from the short- and long-term consequences of the syndemic.

Keywords: Syndemic, COVID 19, Children

INTRODUCTION

The term **syndemic** was developed by medical anthropologists to “label the synergistic interaction of two or more coexistent diseases and resultant excess burden of disease” (1). An example of a syndemic is the interaction of HIV with tuberculosis, resulting in the exacerbation of the clinical effects of both conditions. Singer and Clair also emphasize “the determinant importance of social conditions in the health of individuals and populations”.

Using these concepts, Richard Horton, Editor of the Lancet, has written an opinion piece entitled “COVID 19 is not a pandemic,” in which he argues that the COVID pandemic combines with existing health, social and environmental conditions to create a syndemic (2). The following quote from his piece explains his reasoning:

“Two categories of disease are interacting within specific populations—*infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and an array of non-communicable diseases (NCDs). These conditions are clustering within social groups according to patterns of inequality deeply embedded in our societies. The aggregation of these diseases on a*

background of social and economic disparity exacerbates the adverse effects of each separate disease. COVID-19 is not a pandemic. It is a syndemic. The syndemic nature of the threat we face means that a more nuanced approach is needed if we are to protect the health of our communities”

Horton’s main focus is NCDs in adults, but the same inequalities driving NCDs in adulthood affect children in multiple ways. COVID 19 has exposed and exacerbated these societal inequalities among children through differential indirect effects on family financial and social adversity, mental health, and access to education, among other things. Horton finishes his piece with the following statement, which is as relevant to children as to adults:

“Approaching COVID-19 as a syndemic will invite a larger vision, one encompassing education, employment, housing, food, and environment. Viewing COVID-19 only as a pandemic excludes such a broader but necessary prospectus”.

This review aims to build on Horton’s larger vision and the concept of the syndemic to promote an understanding of how pre-existing social conditions combined with the pandemic to increase child health inequalities and further marginalize

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vulnerable groups of children. Using a child rights-based approach, the review examines how the syndemic has impacted aspects of the life of children, such as access to healthcare, education and family economic circumstances. The review seeks to learn from the experience of the syndemic to consider how societies could build a better future for children and concludes with the role of social pediatricians in ensuring that children's futures are protected and improved.

CLINICAL AND RESEARCH CONSEQUENCES

How the syndemic has impacted the lives of children

Before the COVID pandemic emerged in late 2019 in China and spread across the world in early 2020, children experienced huge challenges to their rights, health and well-being. In the majority world countries, which are both the poorest countries and home to the majority of the world's children, low birth weight (3), malnutrition (4), limited access to adequate healthcare and education (5), poverty (5), and high levels of under-5 mortality persisted despite improvements over the preceding 20 years (5). Even in high income minority world countries, many children experienced exclusion, marginalization and poor health due to poverty (6). The pandemic exacerbated these existing challenges and the challenges have made the effects of the pandemic worse for many children – a classic syndemic. The syndemic exerts its strongest impact among the poorest and most marginalized children but also undermines the rights, health and development of millions of children across the globe.

To illustrate how the syndemic has affected children, I review how pre-existing inequities and injustices combined with the pandemic in particular areas of children's lives to threaten their health, development and well-being.

Access to affordable healthcare

In 2017, half the world's population still did not have access to quality essential services to protect and promote health (7) and 100 million people annually are pushed into extreme poverty by healthcare costs. 25% of the global population is not covered by reproductive, maternal, neonatal and child health services (RMNCH), increasing to 45% in sub-Saharan Africa (8). Even in the world's richest country, the Children's Health Fund (CHF) estimated that in 2015 a minimum of 20.3 million children in the United States (28% of all children) faced barriers to accessing essential health care. This estimate covers children who are a) uninsured; b) children who don't receive routine primary care; and c) publicly insured children who are connected to primary care but have unmet needs for pediatric subspecialty care when needed, such as pediatric cardiology or pediatric endocrinology (9).

During the pandemic, curative and preventive health services have been disrupted because of the diversion of resources to the care of the acutely ill and restrictions on social contact imposed by governments to limit the spread of the virus. Relatively few children have been admitted to the hospital with COVID, but children's inpatient facilities have been taken over to cope with the overflow of adults suffering with the virus (10).

In low-income countries, loss of healthcare resources has been severe, as funds being diverted to coping with the pandemic and lockdowns in response to the pandemic have disrupted commerce and job opportunities, particularly for those already in precarious employment (11). The UN Development Program predicts the following:

"Income losses are expected to exceed \$220 billion in developing countries. With an estimated 55 per cent of the global population having no access to social protection, these losses will reverberate across societies, impacting education, human rights and, in the most severe cases, basic food security and nutrition. Under-resourced hospitals and fragile health systems are likely to be overwhelmed. This may be further exacerbated by a spike in cases, as up to 75 per cent of people in least developed countries lack access to soap and water." (12)

Preventive health fixed and outreach services, particularly those delivering routine childhood vaccination and community child health clinics, have been disrupted in many countries as a result of pandemic restrictions. A modeling study published in the Lancet estimated that across the world, from January to December 2020, 30.0 million (27.6–33.1) children missed DTP3 doses and 27.2 million (23.4–32.5) children missed MCV1 doses (13). Evidence is emerging that disadvantaged children in poorer countries are more likely than their more advantaged peers to miss essential routine childhood vaccinations, (14) (15) exacerbating inequities which pre-dated the pandemic – a clear example of the syndemic effect. An inevitable consequence of this disruption will be increasing mortality and morbidity due to childhood infectious diseases such as measles (16), malaria (17), and pneumonia (18). The impact of these diseases is further exacerbated by malnutrition, which weakens children's immune response to the infectious agents and, as considered below, limited access to adequate nutrition combined with the consequences of the pandemic create a further manifestation of the syndemic.

Access to adequate nutrition

Malnutrition of mothers and children is recognized as one of the most important factors underlying early childhood morbidity and mortality in majority world countries, leading to high rates of low birth weight, under-5 mortality (U-5MR), wasting, stunting and micro-nutrient deficiency (19). In high-income countries malnutrition takes a different form, manifesting mainly as an epidemic of obesity (4) although hunger and food insecurity co-exist with obesity in the USA (20) and the UK (21). Despite reductions in the prevalence of early childhood malnutrition in many low-income countries, a recent UNICEF report (22) based on extensive research across 135 low, middle and high-income countries depicts a crisis in young children's diets, with families struggling to provide their children with nutritious food to support their growth and development.

The report shows that the crisis in children's diets is not evenly distributed across the world or within countries. Children in the world's poorest countries are most at risk but, within all countries, the poorest and most marginalized groups

experience poorer diets and increased threats to growth and development. As a consequence, the adverse health-related consequence of poor diets, such as impaired growth, obesity and arrested development, are more prevalent among these disadvantaged children.

Over the past 18 months the COVID-19 pandemic has exacerbated this dietary crisis. As outlined in the UNICEF report, food, health and social protection services have been put under severe strain by the pandemic, causing disruption to essential services for young children. Service disruptions, combined with the impact of pandemic restrictions and lockdowns on household finances, especially in low-income countries (23), have further threatened the diets of many young children and increased existing inequalities in dietary intake. In some countries, breast feeding support services have been reduced due to pandemic restrictions, with the result that mothers have lost vital support during the neonatal and early infancy periods.

The extent of the estimated impact of the pandemic on maternal and child nutrition in low- and middle-income countries is dramatically illustrated by the following quote from a modeling study by Osendarp et al (24):

“By 2022, COVID-19-related disruptions could result in an additional 9.3 million wasted children and 2.6 million stunted children, 168,000 additional child deaths, 2.1 million maternal anaemia cases, 2.1 million children born to women with a low BMI and US\$29.7 billion in future productivity losses due to excess stunting and child mortality”.

Poor nutrition affects cognitive as well as physical development, and closures of preschools and schools during the pandemic limiting access to education is a further manifestation of the syndemic.

Access to education

Every child has the right to education as enshrined in Article 28 of the UN Convention on the Rights of the Child (25). Millions of the world’s children, however, were denied this right and had little or no access to education prior to the pandemic despite improvements since 2000 (26). Poverty and marginalization combined with lack of financial resources in many low-income countries are the drivers of the exclusion of children from education. Exclusion from education is rare in high-income countries but, in some of these countries, inequality in standards and quality impedes educational attainment (27).

School closures and social distancing measures during the pandemic have exacerbated existing inequality of educational access and quality. Over 90% of countries instituted distance learning, particularly for older pupils; however, UNICEF estimates that 31% of children (463 million) worldwide were unable to access distance learning either because of lack of necessary technological assets at home, or because they were not targeted by the adopted programs (28). Rates of exclusion varied between and within regions and countries. Only 9% could not be reached in Latin America and the Caribbean region compared with 49% in Eastern and Southern Africa. Globally, 3

out of 4 students who cannot be reached by remote learning programs come from rural areas and/or belong to the poorest households.

Children in low-income households in some high-income countries were less likely than their more privileged peers to access distance learning due to lack of secure digital access. For example, in 2020, in the United Kingdom, 20% of children who were eligible for free school meals did not have access to a computer at home compared with 7% of other children and, in 2021, in the United States, 41% of working-class families do not own a laptop or desktop computer and 43% do not have broadband compared with 8% and 7%, respectively, of upper/middle-class Americans (29).

In addition to disrupting their daily school lives, the pandemic has exposed many vulnerable children to loss of caregivers – another manifestation of the syndemic.

Loss of caregivers

Loss of a parent or caregiver is recognized as a major life event in childhood (30) that can disrupt children’s physical or psychological health and development (31).

Family illness and loss of family members and caregivers are events that have a profound effect on children. During the pandemic, millions of children will experience anxiety and worry about their parents and grandparents who have contracted COVID and many have been bereaved of a grandparent and, less frequently, a parent. A recently published major study estimated children’s experience of loss of family members (32). Globally, the authors estimate over a million children experienced loss of a parent, most often the father, or a custodian grandparent, and a million and a half experienced the death of a primary or secondary caregiver. The authors describe this as a ‘hidden pandemic’.

COVID has been increasingly identified as a disease of poverty, with those in poverty at increased risk of contracting the infection and dying from it (33). As a consequence, it is reasonable to assume that children in poor and low-income households are more likely to experience loss of caregivers. In the absence of direct empirical data on the social circumstances of children who have lost caregivers in the pandemic, we used the social patterning of COVID deaths in the UK and Sweden to indirectly demonstrate that children in poorer households in both countries were more likely to experience loss of a parent or grandparent than their more advantaged peers (34).

Violence against children

Loss of a parent or caregiver not only affects children’s psychological and physical health but also potentially exposes them to increased risk of violence and exploitation as family protection is weakened (35). In addition to loss of a parent/caregiver, the COVID pandemic has increased the exposure of children to potential violent and exploitative situations. Confinement of households within the home during lockdown and exclusion from school and normal social contacts has increased the likelihood of intrafamilial violence. Measures to

mitigate the spread of the virus have disrupted child protection services in many countries, leaving children more vulnerable (36). Child labor and child marriage are expected to increase in low-income countries as a result of the impact of the pandemic on household finances, exposing children to further violence and exploitation (37, 38).

The pandemic is likely to exacerbate the already huge problem of violence against children. More than a billion children every year are affected by violence and the poorest and most vulnerable children are at greatest risk (39). This global threat to children urgently needs to be addressed and the syndemic adds to the urgency for a worldwide effort to protect children from violence.

CONCLUSIONS

The above examples of the impact of the combination of the pandemic and existing inequities, the syndemic, are only a snapshot of the broad effects of the pandemic on the lives of children worldwide. Children have been spared the worst direct clinical effects of COVID 19 but the indirect effects have been severe.

Returning to Richard Horton's concluding remarks, examining how the indirect effects of the pandemic have compounded existing inequities enhances our understanding of the current and future consequences of the pandemic for children and sheds light on the already existing challenges and threats to child health, rights and wellbeing. Pediatricians and their organizations can contribute by working with NGOs such as UNICEF and Save the Children and advocating for policy decisions at local, national and international levels which protect children from the short- and long-term consequences of the syndemic.

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