

Child Development During the COVID-19 Pandemic Through a Life Course Theory Lens

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ABSTRACT—*The COVID-19 global pandemic and the resulting economic, health, and educational disruptions have upset all aspects of young people’s lives. The pandemic’s reach will likely continue in the near term and as psychological and academic trajectories unfold over time. In this article, we draw on the central tenets of life course theory—intertwined developmental trajectories, linked lives, and stratification systems (Elder, 1998)—to inform understanding of potential adverse effects of the COVID-19 pandemic on children’s and adolescents’ adjustment and well-being, as well as mechanisms and processes that may buffer or exacerbate the pandemic’s negative impact. We review empirical evidence on the impact of previous macro-level crises (e.g., the Great Recession) to illustrate how life course theory can aid developmental scientists in examining the effects of COVID-19 on children’s development. We conclude with recommendations for research.*

KEYWORDS—*life course theory; COVID-19; children; adolescence*

Throughout history, large-scale sociohistorical events such as the 1918–1919 influenza pandemic, the Great Depression, the

9/11 terrorist attacks, and the Great Recession of 2008 have jeopardized children’s health and disrupted their growth and development. In 2020, children and adolescents are faced with a global pandemic in COVID-19 that has shaken all facets of their lives and presents a significant risk to their health and well-being. According to Johns Hopkins University’s COVID-19 Dashboard, as of October 11, 2020, coronavirus infections exceeded 37 million globally, and COVID-19 has resulted in 1,074,732 deaths (including 214,735 deaths in the United States; Johns Hopkins University and Medicine Coronavirus Resource Center, 2020). The scale and scope of this pandemic are unprecedented, and the confluence of economic, health, and educational disruptions emanating from it will have long-lasting effects on young people’s development.

LIFE COURSE AS A DEVELOPMENTAL THEORY

To situate understanding of the effects of COVID-19 and the ensuing public health and economic crises on children and adolescents’ developmental trajectories, we draw on life course theory as a guide. Life course theory is a useful lens for understanding the repercussions of macro-level sociohistorical events, such as the COVID-19 pandemic, for children’s development. Originally conceived of and applied to the impact of the Great Depression, the life course perspective posits that “historical forces shape the social trajectories of family, education, and work, and they in turn influence behavior and particular lines of development” (Elder, 1998, p. 2). Human development is viewed as a tapestry of intertwined developmental trajectories (e.g., psychological, physical health, cognitive) with critical transition points (i.e., times at which individuals change status or roles) and linked lives (i.e., webs of interpersonal relations), all of which are influenced by young people’s daily ecological contexts, larger societal structures, and the broader sociohistorical context (see Figure 1; Elder & Giele, 2009).

In the current context, although children and adolescents appear less physically susceptible to COVID-19 than adults, they are nevertheless at significant developmental risk due to

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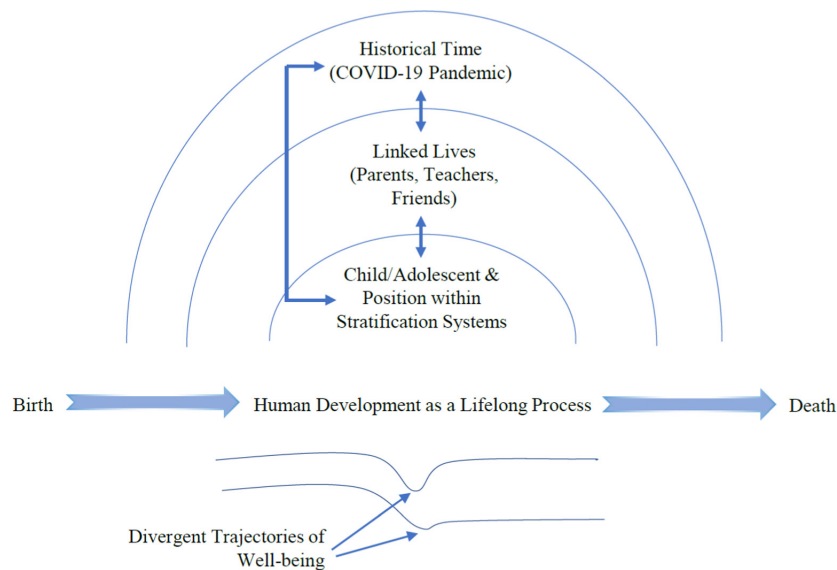


Figure 1. Life course theory as a lens for understanding the impacts of COVID-19 on children and adolescents' trajectories of well-being. Adapted from Elder and Giele (2009). [Color figure can be viewed at wileyonlinelibrary.com]

disruptions to their proximal contexts and daily lives. Risk factors include family disruption due to illness or death, financial instability tied to job loss, and educational disruptions as a result of closures of early child care facilities and schools, as well as transitions to online learning (United Nations, 2020). Furthermore, public health officials' restrictive guidelines on physically distancing to stem the spread of the coronavirus have hampered young people's physical activities and social interactions, heightening concerns for their psychological and physical well-being and safety (United Nations, 2020).

In this article, we articulate the relevance of the life course perspective in documenting the potential adverse effects of the COVID-19 pandemic on children's and adolescents' health and well-being, and in identifying processes and mechanisms that may buffer or exacerbate the pandemic's negative impact, both in the near term and during the subsequent recovery period. Developmental perspectives such as bioecological and life-span theories are also relevant and useful in understanding the current pandemic. Life-span approaches (Baltes, Lindenberger, & Staudinger, 1998) place attention on how environment and biology drive development independently and conjointly via normative age-graded influences, normative history-graded influences, and nonnormative life events. Bioecological theory (Bronfenbrenner & Morris, 2006) asserts that development is driven by individual characteristics, the proximal to distal systems in which the individual is embedded, and the historical time in which development and associated interactions occur. Although both theories overlap substantially with life course theory, life-span and bioecological perspectives are generally silent regarding larger societal stratification systems that characterize the environments of the developing person (see García Coll et al., 1996, for an exception). Given the critical role that stratification

systems will likely play in how children and adolescents weather this pandemic, life course theory provides an optimal lens through which to view COVID-19 and its influences.

LIFE COURSE PERSPECTIVE: DEVELOPMENT, TRANSITIONS, AND TRAJECTORIES

One of the strengths of life course theory is its attention to how intertwined developmental trajectories unfold in relation to critical transitions (Elder, 1998). Transition points can be normative and predictable (e.g., entry into formal schooling), but larger sociohistorical events and the resulting social changes that unfold can also initiate unexpected, nonnormative transitions that can serve as turning points, shocks to development that deflect trajectories (Almeida & Wong, 2009). The life course perspective also amplifies attention to the developmental timing of sociohistorical events. For example, in seminal studies, Elder and colleagues observed that individuals who experienced the hardest years of the Great Depression as young children, particularly boys, were affected more adversely in the long term (e.g., lower confidence about the future, less optimal achievement, lower ultimate educational attainment) than individuals who experienced the Great Depression in late childhood or early adolescence (Elder, 1998; Elder & Caspi, 1988).

This suggests that any assessment of the impact of the COVID-19 pandemic on development must consider developmental timing and trajectories. Robust and compelling evidence highlights the importance of early childhood (prenatal through 8 years) and adolescence (from the onset of puberty through the early 20s) as periods of rapid neurobiological expansion and brain development, as well as cognitive and social growth (National Academies of Sciences, Engineering, and Medicine,

2019a, 2019b). As such, these likely are particularly sensitive and susceptible periods of development when considering the impact of COVID-19. In particular, young children (from birth to 4 years) may be especially vulnerable to developmental shocks and insults resulting from the pandemic because of a confluence of risk factors. These factors include delayed health-care visits (e.g., vaccinations, health screenings), interruptions in schedules for screenings and interventions for developmental delays (e.g., speech), economic-related hardships (e.g., food insecurity, residential crowding, and displacement), and lost access to child care and early education programs (Yoshikawa et al., 2020).

Developmental Trajectories and Turning Points

The COVID-19 pandemic has disrupted almost all facets of children's and adolescents' daily lives, and the pandemic's impact will likely be seen both immediately and as academic, social, and emotional trajectories unfold over time. Indeed, research on large-scale health, economic, and sociopolitical disasters suggests that they have both immediate and lasting repercussions for young people. For example, research conducted during or immediately following prior pandemics (e.g., SARS, H1N1) with Asian and North American youth documented less optimal adjustment (e.g., anxiety, depression, posttraumatic stress disorder [PTSD]) in school-aged children, adolescents, and young adults who were affected directly or experienced more pandemic-related stressors (Ko, Yen, Yen, & Yang, 2006; Main, Zhou, Ma, Luecken, & Liu, 2011; Sprang & Silman, 2013). Similarly, significant economic downturns, such as the Great Recession, have been linked to challenges with behavior problems, self-efficacy, and school attendance in the United States and Greek 4- to 17-year-olds during the crisis and in the short term following the crisis (Golberstein, Gonzales, & Meara, 2019; Kalil, 2013; Motti-Stefanidi, & Asendorpf, 2017).

Research on COVID-19 published early in the course of the pandemic echoes these findings: Limited studies in China suggest heightened levels of psychological problems and PTSD symptoms for some school-aged children, adolescents, and young adults (Liang et al., 2020; Xie et al., 2019; Zhou et al., 2020), and studies of North American 13- to 18-year-olds link certain motivations for pandemic-related social distancing (e.g., avoiding illness and judgment, being told to do so by friends) to greater anxiety and depressive symptoms (Oosterhoff, Palmer, Wilson, & Shook, 2020). In the academic domain, research on a nationally representative sample of Italian adolescents identified youth's fears for negative educational consequences related to the COVID-19 pandemic (Buzzi et al., 2020). Potentially linked to timing with high school graduation and decisions around postsecondary pursuits, educational worries, along with depressive symptoms and anxiety, may be higher during the COVID-19 pandemic for those in higher grade levels in both China and Italy (Buzzi et al., 2020; Zhou et al., 2020).

In addition to these immediate effects, life course theory suggests that sociohistorical events, such as the current pandemic, can be developmental turning points, setting into motion accumulating advantages or disadvantages that can deflect long-term trajectories of well-being (see Figure 1; see Elder, 1998, for a discussion of the impact on young adults of military enlistment and service). We could not identify research on the long-term effects of prior pandemics on children's and adolescents' well-being, highlighting a need for longitudinal studies to capture more fully how trajectories unfold over time as a consequence of such events. But in one study, U.S. elementary and middle school students' academic achievement declined substantially during and for up to 3 years following the Great Recession, in part the result of substantial reductions in school spending (Shores & Steinberg, 2019). Consistent with the life course perspective, the magnitude of the effects depended on developmental status: The achievement outcomes of older (upper elementary/middle school) students were more vulnerable to recession-induced reductions in spending than was early elementary students' achievement (Shores & Steinberg, 2019). Similarly, in another study, the Great Recession negatively affected the likelihood that 15- to 24-year-olds would enroll in school, be employed, or be in a vocational training program, with the United States and Australia seeing the largest declines among countries who are not part of the Organisation for Economic Cooperation and Development in the 5 years following the height of the Great Recession (UNICEF-IRC, 2014).

In the socioemotional and behavioral domains, the evidence is less clear in linking large-scale sociohistorical events to long-term well-being. For example, after the 9/11 terrorist attacks in the United States, studies identified greater substance use by adolescents who were affected directly by 9/11 as children, including those who physically witnessed the events or immediate aftermath, were injured by the attack, or experienced the dust cloud from the Towers' collapse (Gargano, Welch, & Stellman, 2017). However, a qualitative review of studies on 9/11 suggests that most of the effects related to youth's emotional well-being after the terrorist attacks were mild and transitory (Eisenberg & Silver, 2011). This is consistent with findings of overall declining rates of PTSD and depressive symptoms 3 years later among most 9- to 18-year-olds affected directly by Hurricane Katrina (Kronenberg et al., 2010).

In summary, empirical evidence from sociohistorical events as well as emerging evidence based on the COVID-19 pandemic suggest the possibility of short- and long-term impacts of sociohistorical catastrophes for child development across developmental domains. However, our review found far fewer studies assessing the influence of the current and prior pandemics on the health and well-being of children from birth to age 4, despite theoretical and empirical evidence suggesting both immediate and prolonged consequences of the myriad risk factors associated with the COVID-19 pandemic for early childhood development (National Academies of Sciences, Engineering, and

Medicine, 2019a; Yoshikawa et al., 2020). Addressing the influence of the current pandemic on young children's developmental outcomes should be a research priority.

Finally, given that the pandemic will likely persist for many months, if not years, it may exact more severe and long-lasting effects on children's and adolescents' development than the more acute, time-limited trauma of events such as the SARS pandemic. Life course theory offers a useful framework for researchers as they aim to describe and evaluate the immediate and longer-term impact of the COVID-19 pandemic on children's and adolescents' academic and psychosocial adjustment.

Linked Lives

Another tenet of the life course perspective is the recognition that children and youth are not experiencing the COVID-19 pandemic in a vacuum—instead, they are navigating this socio-historical event with others in their social worlds (Elder, 1998; see Figure 1). Interpersonal relations within these linked lives can be sources of social support or social strain (Almeida & Wong, 2009). Research has documented the benefits of support from families, educators, and friends for well-being across domains, yet the support that children and adolescents can draw from these sources is likely compromised because the important others in their lives must also navigate all the stressors and uncertainties accompanying the pandemic. These include disruptions to parents' work and economic circumstances (e.g., Ananat & Gassman-Pines, 2020), reductions in young children's access to child care (Yoshikawa et al., 2020), and teachers and schools managing the abrupt transition for school-age youth to online learning (Rothstein, 2020).

For young people, the impact of COVID-19 may be most apparent in relation to their schooling. Some 144 countries have closed schools nationwide, affecting more than two-thirds of students enrolled in preprimary through tertiary/postsecondary education institutions worldwide (more than 1 billion learners); several other countries (including the United States) have instituted more localized school closures, affecting an additional half-billion learners (UNESCO, 2020). Although the effectiveness of school closures in curbing the pandemic continues to be debated from a public health standpoint (Viner et al., 2020), the likely impact of the pandemic on students' derailed academic trajectories is not debatable, especially for vulnerable children such as those with disabilities or who are living in poverty (Kuhfeld & Tarasawa, 2020; Masonbrink & Hurley, 2020). Projections of deflections in academic trajectories are based on a large body of research demonstrating the importance of early school readiness skills for subsequent academic achievement (e.g., Duncan et al., 2007), and summer learning gaps that significantly predict subsequent school achievement, high school dropout, and 4-year college attendance (Alexander, Entwisle, & Olson, 2007).

School closures jeopardize children's healthy development in other important ways. In the United States, early child care

programs and schools serve meals and snacks to more than 35 million children a day, fulfilling nearly two-thirds of daily nutritional needs (Dunn, Kenney, Fleischhacker, & Blich, 2020). As a result of school closures, students have lost access to nutritional food, and families have had to pay more for food, costs that many low-income parents cannot afford. This is particularly problematic given the links among food insecurity and school-age children's academic and socioemotional skills and their physical and mental health (Gundersen & Ziliak, 2018). In addition, educators, counselors, and school social workers provide critical support to students in need, particularly those from low-income and rural families, and often are the first to observe warning signs of mental health issues or unsafe situations (Masonbrink & Hurley, 2020). School closures have removed a major source of mental health support for children and adolescents (Ali et al., 2019; Masonbrink & Hurley, 2020).

In addition to the pandemic's disruption of schools, COVID-19 also permeates other aspects of children and adolescents' linked lives. Many families' lives have been disrupted severely. Working parents and caregivers are struggling to juggle working remotely with competing caregiving demands, including helping children navigate online schooling. Adults who are deemed essential workers have to navigate child care needs as well as health and safety considerations, and families facing pandemic-related job losses are contending with increased financial insecurity, including eviction. Virtually all families have had to deal with confinement-related stress (e.g., crowding, changes to routines). These economic and pandemic-specific factors increase parents' stress and undermine the quality of relationships among family members, including marital, parent-child, and sibling relationships, which in turn have implications for children's and adolescents' well-being (Prime, Wade, & Browne, 2020).

Consistent with a life course perspective, substantial evidence points to the psychological toll that economic downturns exact on parents and, in turn, children's and youth's physical and mental health and educational outcomes (Conger & Elder, 1994; Kalil, 2013). Such experiences tax parents' emotional well-being, limiting the psychological resources needed to attend to children's socioemotional and cognitive needs and increasing the use of harsher and less responsive parenting strategies (Conger & Elder, 1994; Kalil, 2013). Social and economic upheaval also boosts the risk of family violence, and prolonged economic challenges and confinement during the current pandemic could lead to increases in intimate partner violence and child abuse (Yoshikawa et al., 2020). Similarly, research has documented the links between how parents and children fare when facing global health crises: In a retrospective study, rates of parents' PTSD were significantly higher for those who experienced SARS and H1N1 pandemic-related isolation or quarantine, and most parents diagnosed with PTSD had children who were similarly diagnosed (Sprang & Silman, 2013). Comparable co-occurrence of PTSD symptoms between parents and

children was observed following the 9/11 terrorist attacks (Eisenberg & Silver, 2011).

However, in the face of increased stress and strain, close family relationships can mitigate sociohistorical risk. Even a single supportive relationship in or beyond the immediate family can buffer the effects of stress on children's functioning (Prime et al., 2020). For example, in the wake of 9/11, greater maternal acceptance levels pre-9/11 and helpful mother-child discussions about the event post-9/11 were associated with fewer PTSD symptoms in children (Wilson, Lengua, Meltzoff, & Smith, 2010). Similarly, maternal support and promotion of positive coping strategies have been linked to more optimal well-being in children and adolescents following both natural disasters and terrorist attacks (see Eisenberg & Silver, 2011, for a review). Research published during the initial phases of the COVID-19 pandemic in Italy indicates that most adolescents have spoken with their parents sometimes or often about the pandemic (Buzzi et al., 2020), and research with American adolescents indicates that those who are happy staying home during the pandemic report less anxiety and depressive symptoms (Oosterhoff et al., 2020).

How parents' concerns about the pandemic translate into supportive or stressful interactions with their children will have important implications for young people's postpandemic recovery. Moreover, life course theory suggests that both objective and subjective experiences of everyday contexts and larger sociohistorical events shape development across time (Elder & Shanahan, 2007). To support young people, the important others in their lives must consider not just the objective pandemic-related events that occur (e.g., job loss), but also the subjective experiences of these events that may be identified and internalized differently depending on developmental age (e.g., adolescents having a broader understanding of implications of job loss for family well-being than young children; young children becoming more fearful of nonfamily members from whom they have been socialized to maintain a physical distance).

Taken as a whole, the research on the current COVID-19 pandemic published thus far, coupled with prior research on large-scale sociohistorical crises, highlights the prominent role of linked lives in children's and adolescents' well-being. They also suggest that a life course perspective can provide a helpful framework for examining questions of both risk and resilience in young people's navigation of the COVID-19 pandemic.

Life Course Perspective: Social and Economic Stratification

The life course perspective also brings attention to how stratification systems that put individuals into hierarchical groups varying in status, resources, and opportunities differentially affect developmental trajectories during times of sociohistorical upheaval (Elder, 1998). To the extent that race/ethnicity and socioeconomic status (SES) confer advantages for certain groups (e.g., White, higher-SES families), the life course perspective posits that children and adolescents in these groups would be

better positioned to weather the COVID-19 pandemic. In contrast, COVID-19 may be particularly disruptive for those youths who are already marginalized and who faced significant stressors in their prepandemic lives (e.g., children and families of color, low-income families, undocumented or mixed-status families; Reich, 2020).

Indeed, the stratifying effects of COVID-19 are already readily apparent in mortality and unemployment rates (Hooper, Nápoles, & Pérez-Stable, 2020), as well as in widening educational disparities along racial and economic lines (Rothstein, 2020). This is consistent with research suggesting that achievement gaps widened in the aftermath of the Great Recession. For example, student achievement declined more in school districts serving higher concentrations of low-income and minority (Black) students, leading researchers to conclude that "the Great Recession was associated with both aggregate declines in academic achievement and increases in achievement inequalities between poor and more economically advantaged school districts" (Shores & Steinberg, 2019, p. 2). The research evidence to date also suggests that the effects of the COVID-19 pandemic on related psychological challenges are more common for low-SES families (Liang et al., 2020) than for families with more resources, which are consistent with research on previous economic downturns (Golberstein et al., 2019).

This early evidence suggests that the impact of COVID-19 will be felt more heavily in communities of color and among low-income families. Researchers must pay attention to tracking and investigating COVID-19's effect on those who are least well-positioned to endure its impact. Researchers should also be attentive to evaluating the potential for educational policies (e.g., enhanced Internet connectivity) and social policies (e.g., expanded unemployment benefits, stimulus checks) to mitigate some of the negative effects of the pandemic on children's development. In the Great Recession, countries such as Australia that implemented economic recovery packages (e.g., cash payments to low- and middle-income families) helped ease the recession's impact on vulnerable families (UNICEF-IRC, 2014). Similarly, the American Recovery and Reinvestment Act of 2009, which increased funding and expansion of key social safety net programs, helped contain rises in child poverty among the U.S. working poor (UNICEF-IRC, 2014).

Also of consequence in the current pandemic is the perpetuation of inaccurate information about and racialization of the coronavirus as the "Wuhan" or "Chinese virus" by U.S. public officials, including President Trump, that has engendered a wave of xenophobia, anti-Chinese sentiment, and discrimination toward Asian Americans (Asian Pacific Policy and Planning Council and Chinese for Affirmative Action, 2020). Ample evidence demonstrates negative associations between experiencing discrimination—directly or vicariously—and children's and adolescents' well-being (Benner et al., 2018), and we need research that documents the experiences of Asian American children's and youth's experiences of discrimination during the

pandemic. A recent study found high levels of COVID-19-related reports of direct and vicarious discrimination (e.g., online, in person) and perceived Sinophobia among Chinese American parents and their 10- to 18-year-old children, and consistent associations with less optimal mental health (i.e., generalized anxiety, symptoms of depression) in parents and youth; Cheah et al., 2020).

Finally, in the United States and globally, the pandemic is occurring in tandem with renewed attention to Black Lives Matter and the associated social movement around racial injustice, spurred by the deaths of George Floyd and Breonna Taylor, among others. Qualitative research suggests that larger sociopolitical events and contexts, such as the anti-immigration rhetoric and political policies of the Trump Administration, can spur young people's civic engagement (Wray-Lake et al., 2018). As another illustration of turning points in young people's lives, the current sociohistorical events may spur more civic engagement among young people and more challenges to the entrenched systemic racism in the United States in the years ahead.

CONCLUSIONS AND DIRECTIONS

The global impact of the COVID-19 pandemic is far from over, and its effects likely will be felt for several years to come. As some countries take cautious steps toward reopening their businesses, schools, and institutions and returning to some semblance of prepandemic life, others, including the United States, continue to battle containing COVID-19. Developmental scientists are well-positioned to research how macro-level shocks such as the coronavirus pandemic affect children's and youth's developmental trajectories, and life course theory can guide that investigation. Key principles of life course theory—intertwined developmental trajectories, transitions and turning points, linked lives, and societal stratification—provide a framework for situating children's and adolescents' development within sociohistorical time. These principles also suggest that we must pay attention to developmental timing and unfolding developmental trajectories following this global pandemic, as well as to the factors that protect or exacerbate the pandemic's detrimental effects. Life course theory can aid developmental scientists' research inquiry to inform policies and practices that mitigate the adverse consequences of the pandemic on children and adolescents.

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