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The Impact of COVID-19 on Early Childhood Education and Care

International Perspectives, Challenges, and Responses

Springer

Educating the Young Child

Advances in Theory and Research, Implications for Practice

Volume 18

This academic and scholarly book series will focus on the education and development of young children from infancy through eight years of age. The series will provide a synthesis of current theory and research on trends, issues, controversies, and challenges in the early childhood field and examine implications for practice. One hallmark of the series will be comprehensive reviews of research on a variety of topics with particular relevance for early childhood educators worldwide. The mission of the series is to enrich and enlarge early childhood educators' knowledge, enhance their professional development, and reassert the importance of early childhood education to the international community. The audience for the series includes college students, teachers of young children, college and university faculty, and professionals from fields other than education who are unified by their commitment to the care and education of young children. In many ways, the proposed series is an outgrowth of the success of *Early Childhood Education Journal* which has grown from a quarterly magazine to a respected and international professional journal that is published six times a year.

Please contact Astrid Noordermeer at Astrid.Noordermeer@springer.com to submit a book proposal for the series.

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COVID-19 and the Global Early Childhood Landscape

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Introduction to the Volume

Mary Renck Jalongo

Shortly after the lockdown was lifted in our area, a young mother ventured out with her toddler daughter to purchase essential items. Both were wearing masks and, rather than placing the child in the seat of the grocery cart, the mother held her child close while scanning her surroundings for any encroachment on the recommended physical distance boundaries. When another shopper ignored the directional arrows on the floor and approached them head on, a look of panic swept over the mother's face. She raced over to a different aisle with the child bouncing along as she ran. Then the toddler put up her hands, palms out, and fingers spread, as if warding away a threat. Imagine the contrast between this experience and a pre-pandemic trip to the grocery store. Previous visits surely would have been more relaxed, with the toddler taking in sights, smells, and using her emerging vocabulary. Her mother probably would have exchanged smiles and nods with fellow shoppers. Now, thanks to COVID, an ordinary errand had become an anxiety-ridden venture into a danger zone, teeming with possibilities for infection, disease, and even death.

The COVID-19 pandemic is a disaster of the first order, and the disease persists despite monumental efforts to eradicate it. A Centers for Disease Control-led team calculated that, for every four COVID-19-associated deaths in the United States, a child loses a parent or a caregiver (Hillis et al., 2021b). Such losses can be particularly acute for the very young because separation and abandonment are major fears during early childhood. COVID-19 has not only intensified that worry but also, in an alarming number of instances, made it a reality. A study published in *The Lancet* estimated that, throughout the world, 1,562,000 children have experienced the death of at least one primary or secondary caregiver (Hillis et al., 2021a).

The children of racial and ethnic minorities and indigenous people have been disproportionately affected (Hillis et al., 2021b; Xafis, 2020). To illustrate, the

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National Center for Health Statistics data indicated that 65% of children of racial and ethnic minorities lost a primary caregiver, even though they represent only 39% of the total US population (Haseltine, 2021). Hispanic, Black, and American Indian/ Alaska Native children accounted for over 50–67% of those losing a parent or primary caregiver to COVID-19 in different regions in the United States even though they represent minority groups (Haseltine, 2021).

Other types of loss have compounded the problem. Countries with widespread poverty and fragile education systems failed to stabilize the existing educational programs, much less innovate toward greater equity (Soudien et al., 2022). The United Nations (2020a) and Organisation for Economic Co-operation and Development (OECD, 2020) report that more than 1.7 billion learners had their learning disrupted or even discontinued, and 99% of students in low- and middle-income countries experienced constrained educational opportunities. Even within European countries, childcare policies and responses to COVID-19 differed considerably (Blum & Dobrotić, 2020). Measures instituted to address the transmission of the virus, while necessary, have tended to increase the psychological vulnerability of children in general and further exacerbated the situation for children who were already experiencing poverty, food insecurity, abuse, neglect and maltreatment, anxiety and depression, and fewer educational opportunities to learn (Fegert et al., 2020; Fry-Bowers, 2020). For example, even in a wealthy nation such as the United States, the provision of food to 4.6 million young children from low-income backgrounds in early care and education settings faltered because most programs did not have the capacity to distribute the food, causing that "safety net" to unravel (Bauer et al., 2021).

As the United Nations (2020b) has cogently argued, COVID-19 is not only a health disaster; it is also a humanitarian crisis. To illustrate, many are aware of the disturbing demographic data that documented higher rates of infection with COVID-19 among minorities and marginalized groups than in the general US population. What is less fully appreciated is that those same inequities were played out in the early childhood sector, particularly childcare.

In the United States, nearly 2/3 of families with children between the ages of infancy and 5 years rely on early childhood education and care (USA Facts, 2020). A report from the Urban Society (Adams et al., 2021) defines the "childcare/early education workforce" as center-based staff (including directors, teachers, and aides) and family child care and home-based providers. Childcare workers are 2.5 times more likely to be either Black or Latina compared with the overall workforce (Austin et al., 2019). They also were more likely to test positive for COVID-19 (Gillam et al., 2020). Globally speaking, those employed as caregivers and educators of young children often are poorly compensated and/or without health insurance, yet many persisted at high risk to their own health and that of their families. Without the childcare/early education workforce's support of essential workers, health care and the economy in many nations could have collapsed (Tracey et al., 2020). They were placed in the position of just "holding on until help comes" (National Association for the Education of Young Children, 2020), and, evidently, some of them could not prevail. In the United States alone, more than 370,000 childcare and early education

workers exited the field from February to April of 2020 and, as of December 2020, the workforce had been reduced by 17% (Bureau of Labor Statistics, 2021). The glib solution of "going online" proffered to those in other occupations or even for other groups of educators was totally inaccessible to them because their primary role consisted of in-person care for the youngest children. To make their role even more difficult, the very young children in their care seldom understood the changes instituted or the underlying reasons for them (Adams et al., 2021). Childcare personnel who remained also had to find a way to deal with stringent health and safety protocols, staff shortages, unpredictable enrolments, increased operating budgets, and fiscal uncertainty (Workman & Jessen-Howard, 2020). Any pre-existing bad situations with a few or no options for safe, reliable, and affordable early childhood care and education continued to worsen in the pandemic's wake (Kalluri et al., 2021).

Of course, early childhood educators affiliated with public schools faced challenges as well. They were expected to quickly adjust their personal lives and home environments to the circumstances, implement new health and safety protocols, transition to emergency remote teaching, link children and families to needed services and supports, work differently with families, and implement plans for reopening—to name a few (Atiles et al., 2021).

College and university faculty members found that growing numbers of their students were understandably worried not only about the virus but also about program completion and future job prospects. Enrollment declined at many higher education institutions and, if they had been struggling financially pre-pandemic, they were now in crisis. In many instances, faculty members with the fewest resources for weathering the COVID-19 pandemic—part-timers, temporaries, and those at the bottom of the seniority list—lost their jobs. Meanwhile, some of the most senior faculty took early retirement rather than completely reconfigure their professional lives, leaving their areas of specialization uncovered and further compounding staffing problems. Working with undergraduates or graduate students, faculty members' instruction, advisement, assessment, and field supervision had to be transformed to online formats almost overnight. Designing meaningful practicum experiences for students demanded resourcefulness, collaboration with colleagues, and new ways of working with schools. Throughout it all, members of the female-dominated field of early childhood education and care saw their household duties increase and, if they were responsible for children, the expectations for learning support at home increased exponentially. Across the entire spectrum of early childhood education and care, ranging from infant-toddler programs to post-doctoral studies, professionals confronted huge and sometimes overwhelming demands to adapt.

In the early days of the coronavirus, we had no idea about the professional and personal stress and trauma that the disease would wreak for practically everyone. Some of us associated with this project lost family, colleagues, students, friends, and community members to COVID, both temporarily and permanently. We (mostly) expected that a cure would be found and that the illness would be eradicated. Instead, at the time of this writing, we are seeing the virus mutate, persist, and break

through—in some cases, even among people who were vaccinated. Will "The COVID," as many people now refer to it, ever be put to rest, once and for all, and in the meantime, what will humankind have to endure? More than a year later, the answers remain unclear.

About the Book Project

When Jyotsna Pattnaik first proposed an edited book on the topic, my initial reaction was that we did not yet know what the effects of COVID-19 might be. I suggested that we begin with a special issue of *Early Childhood Education Journal* because it could be produced more quickly than a book, gauge readers' interest in the subject matter, and perhaps identify contributors of the chapters. Patricia Crawford, editor-in-chief of *ECEJ*, and our publisher Springer Nature responded promptly to the proposal for a special issue. In the spring and summer of 2020, the first manuscripts were submitted. Ultimately, 22 articles devoted to the topic of COVID-19's impact on early childhood education and care (ECEC) were published in the September of 2021 (volume 49, number 5) issue of the *Early Childhood Education Journal.* In keeping with their enlightened policies, Springer Nature decided to make all publications about COVID-19 Open Access and free of charge. To date, articles from the special issue of *Early Childhood Education Journal* on COVID-19 have been downloaded nearly 100,000 times, with some articles at more than 19,000 downloads (Jalongo, 2021). The success of the special issue of the journal suggested that there was a need for curated information about COVID-19 and its consequences for early childhood education and care, so we redoubled our efforts with the book project. We began with a call for abstracts posted online and shared via various listservs. Our definition of the early childhood years was that used by the National Association for the Education of Young Children: from infancy up to and including 8 years of age. The audience for this book is the same as the audience for the Educating the Young Child Series: professionals dedicated to the care and education of very young children.

In terms of manuscript types, we indicated that we were receptive to: (1) reviews of research that included implications for early childhood practice; (2) original research that employed quantitative, qualitative, and mixed methods; and (3) practical articles that critically analyzed policies and pedagogy. Of course, all research had to conform to ethical standards and the principles of informed consent, and faculty members were required to verify that the research had been approved by their Institutional Review Boards.

In our call for book chapters, we provided some direction about the content sought for this edited volume. The list was by no means exhaustive but was intended to serve as a starting point for formulating ideas. Included among the topics were such things as: the history of health pandemics and their consequences for young children, the wellbeing of children, families, and professionals; perspectives and practices of parents/families, caregivers, teachers, administrators, and teacher

educators; support for young children's learning—particularly those at-risk, in marginalized groups, or with delays/disorders; and college/university faculty members' efforts to maintain professional standards despite disruptions to early childhood courses and professional practicum experiences. We further indicated that we were particularly keen to receive manuscripts that reflected interagency collaborations to support children and families as well as global perspectives on the COVID-19 pandemic.

Given the diverse, international readership of Springer Nature's Educating the Young Child Series and the interdisciplinary implications of a global pandemic, we were particularly eager to see collaborative efforts that looked beyond the local context and involved networking with other early childhood experts, as well as professionals in related fields.

The deadline was tight yet, much to our surprise, over 100 different abstracts and articles from around the world were submitted. Considering the extraordinary personal and professional pressures that scholars were experiencing, the fact that these prospective authors had changed their research agendas and were pursuing publication was impressive. This groundswell of interest in the topic was encouraging, particularly because the submissions received represented diverse backgrounds, nationalities, and perspectives on the field, both in basic and higher education.

Unique Contributions of the Book

This edited volume, consisting of 25 chapters submitted by teachers/scholars from throughout the world has several unique characteristics.

Recency of the Phenomenon The topic of COVID-19 is exceptionally timely. Nearly everything published about the coronavirus was published within the past 2 years and much of the most recent literature is posted online in pre-publication format. The COVID-19 pandemic is both an up-to-the minute and continually evolving issue. We still cannot fathom the indelible mark this crisis will make on individuals, groups, nations, and the planet.

Focus on the Early Years Although there are many publications on the world health pandemic being published currently, most of them focus on scientific/medical evidence, public health systems and concerns, and government policies enacted to control transmission of the disease and put essential supports into place. Currently and to the best of our knowledge, this is the first book of its type.

International Perspectives Rather than present a USA perspective only, our book synthesizes theory, research, and professional practice to provide keen insights on the challenges associated with COVID-19.

Effects Across Socioeconomic Strata Although those who face the greatest challenges to survival have tended to suffer the most, it has had consequences for people at all levels of power, influence, and income. COVID-19 represents an existential crisis for all, even though some are better equipped to cope physically, socially,

financially, and emotionally. This makes it a particularly interesting educational issue because, even in wealthy countries that espouse democratic ideals, support systems faltered and failed so many people. Furthermore, individuals and groups worldwide could not, for a variety of reasons, follow even the most basic guidelines from the World Health Organization to halt the spread of the virus by doing such things as avoiding physical contact, washing hands frequently, and wearing a mask.

Profound Consequences for the Very Young Although COVID-19 is not a disease such as polio, which destroyed children's physical health, it still ravaged young children's lives as they lost their support systems, both familial and institutional. Even for children who did not suffer the loss of a caregiver, many were physically distant for more than a year. Young children had their educational experiences more disrupted than those of older students because of their need for active, play-based approaches, peer interaction, and more in-person adult guidance. For most children who relied on programs to provide health, nutrition, social services, and other forms of professional help, these interventions were disrupted or perhaps no longer accessible. If children lived in troubled, violent families where neglect or abuse occurred or parents/caregivers had substance abuse or severe mental health issues, these children became trapped indoors with these negative influences intensified, the external supervision via social services absent, and the safe havens supplied by many early childhood and care programs discontinued. The contributors to this book have the wisdom to fully appreciate that we are far from equal in our ability to summon up the human and material resources necessary to survive and thrive. Children from 0–8 years are a vulnerable group because they are reliant on others. When their basic needs are not met, families are stressed to the breaking point, opportunities to learn are restricted, and support services are denied, it does undeniable damage.

Overview of the Book

The 25 chapters comprising the volume have been clustered into five sections for ease of reference. Part I: COVID-19 and the Global Early Childhood Landscape begins with this introduction to the work (Chap. 1). Suzanne Egan's and Jennifer Pope's application of Bronfenbrenner's bioecological systems to the pandemic provides a theoretical perspective (Chap. 2). Part I also includes Ellen McKenzie's discussion of challenges to developmentally appropriate practices (Chap. 3), an analysis of government policies affecting young children in 10 countries headed by Antje Rothe (Chap. 4), Sunita Singh's analysis of the pandemic in India (Chap. 5), and Marcela Batistič Zorec and Mojca Peček's interview study with preschoolers (Chap. 6).

The wellbeing of early childhood personnel was another theme in the chapters accepted for publication, so Chaps. 7, 8, 9, and 10 constitute Part II of this edited

work. Included are Lisa Murray and her co-authors' chapter on Australian early childhood educators (Chap. 7), Nathalie Bigras and her colleagues' chapter on early childhood program managers (Chap. 8), Laura McFarland and her co-authors' study of early childhood educators (Chap. 9), and Lynne Lafave and her colleagues' insider perspective on wellbeing in early childhood personnel (Chap. 10).

Part III: Focus on Families consists of four chapters. In Chap. 11, Dorit Aram and co-authors provide a cross-cultural perspective on parenting during the pandemic. Marisa Macy explores the provision of services for young children with delays/disabilities, despite lockdowns (Chap. 12). In Chap. 13, Susan Sonnenschein and her co-authors investigate obstacles associated with online instruction of young children, while in Chap. 15, Laura Lee McIntyre and her co-authors offer practical guidance on using telehealth to support young children with special needs.

Early childhood personnel—childcare providers, teachers, program administrators, and college/university faculty members responsible for the education of preservice/inservice caregivers and teachers—are the focus of Part IV. Patty Hrusa Williams and Donna Karno examine the situation of family child care providers in a rural context (Chap. 15) while Crystasany R. Turner (Chap. 16) reports on her qualitative research with Black family child care providers who functioned as community mothers during the crisis. In Chap. 17, Kate Anderson and a large international team report on pre-primary schoolteachers' perspectives in Ethiopia, Liberia, and Pakistan. Natalie Schock and her co-authors share their qualitative research findings from Head Start teachers in the United States in Chap. 18. The fourth section concludes with Evan Throop Johnson, Lori McKee, and Anne Murray-Orr's design of a meaningful practicum for preservice teachers, even with stay-at-home orders in effect (Chap. 19).

The final section, Part V: Delivering Program and Services Despite Challenges, describes how early childhood professionals quickly adapted programs for the very young to make the best of an unprecedented situation. In Chap. 20, Evdokia Pittas, Inmaculada Fajardo Bravo, and Nadina Gómez-Merino analyze online learning practices as they affect young children. Kristy Timmons and her co-authors look at remote teaching and learning in the early primary years in Canada (Chap. 21). The youngest children—infants and toddlers—also had their education disrupted by COVID-19. This is the topic of Marjory Ebbeck and her co-authors' analysis of curriculum quality in Singapore (Chap. 22). Continuation of support services for children with disabilities is the topic of Chap. 23 by Elizabeth A Steed. Chapter 24, written by a large international team of authors led by Beatriz Ilari, studies how music programs for young children adapted to the difficult circumstances associated with COVID-19. The book concludes with a look toward our uncertain future as Megan Kunze and Laura Lee McIntyre reflect on the situation for young children at-risk, post-pandemic (Chap. 25). The authors of the assembled chapters have shared exceptionally diverse subject matter, yet they are unified by their stance of advocacy for young children, families, caregivers/teachers/administrators, and faculty working with preservice and inservice teachers. Collectively they represent well-reasoned responses to a worldwide panic and concerted efforts to mitigate the adverse influences of the COVID-19 pandemic.

Conclusion

COVID-19 and responses to it have resulted in:

> The worst education crisis of the last century. The health pandemic, its subsequent massive and extended school closures, and the accompanying strain in public and family budgets (that result from one of deepest global economic recessions in history) are unprecedented triple shocks to the human capital of a generation of children. If recovery strategies are not successfully designed and deployed, the intergenerational consequences of this pandemic will be felt for several generations to come. (Azevedo et al., 2022, p. 422)

As the contributors assembled for this volume assert, COVID-19 had—and continues to have—a major impact, and the physical and psychological toll has been particularly acute for the youngest members of the global community (OMEP Executive Committee, 2020; Pascal et al., 2020). There is little question that the current global health crisis has redefined and, in some ways, jeopardized the field of early childhood education and care as we once knew it. Much of the hard-won progress that was made throughout the world in supporting young children and families could not withstand the intense pressures exerted by the crisis.

Although it may be tempting to highlight even the smallest positive changes that were instituted while living through a pandemic thus far, the truth is that much of it consisted of muddling through somehow. We had to accept that circumstances were far from ideal, relax some rules, and modify some standards. It is premature to claim that we are "restructuring" or "reimagining" education. The road to recovery necessitates a full understanding of the pandemic's effects on systems, educators, and students across three different time frames: (1) the immediate impact of the COVID-19 crisis, (2) the aftermath as the epidemic is wrestled under control, and (3) the medium-term aftermath that occurs when education systems, societies, and economies achieve some level of stability (Anderson, 2021). At this early juncture, perhaps the best we can aim for is "the development of strategies that will position systems and institutions to anticipate and prepare for future similar events and leverage this crisis to make fresh starts where systems, processes, and practices have clearly not worked, not supported everyone equally, and not offered individuals and communities the opportunities to which they have a legitimate claim" (Soudien et al., 2022, p. 303).

On the brighter side, the rest of the educational field finally is catching up to what early childhood has advocated for decades; namely, a focus on the whole child that takes all developmental domains into account; knowledge of child development; and effective collaboration with families, communities, and professionals in the allied fields. Shortly before COVID-19 hit, the Aspen Institute (2019) assembled a National Commission on Social, Emotional and Academic Development comprised of an impressive group of scholars, researchers, and policymakers. The six key recommendations that emerged were remarkably consistent with the early childhood philosophy that has existed for at least as long as most of us with a long history in the field can remember. They included:

1. Set a clear vision that broadens the definition of student success to prioritize the whole child
2. Transform learning settings so they are safe and supportive for all young people
3. Change instruction to teach social, emotional, and cognitive skills; embed these skills in academics and in schoolwide practices
4. Build adult expertise in child development
5. Align resources and leverage partners in the community to address the whole child
6. Forge closer connections between research and practice

Up until quite recently, many educators working with older students would have dismissed these ideas as too "soft" and raised objections such as "What about accountability, academic standards, test results, and international comparisons of student achievement?" Evidently, at least some educational leaders are now willing to respect these time-honored tenets of our field and regard them as enlightened.

It remains to be seen whether humankind has learned from COVID-19 or if they will, in the rush to return to misguided notions about normalcy, revert to practices that ignore global interdependence, protect the privileged, and preserve the status quo. Attempts to cope with the pandemic have laid bare the inequities and the failures of entire nations, including those that are well resourced. What our youngest generation needs—perhaps now more than ever before—is compassion, advocacy, wisdom, research, and effective practice from the field of early childhood education and care. All these things are amply represented in the chapters that follow, contributed by an impressive group of teachers/scholars with a shared commitment to the very young child.

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Chapter 2
A Bioecological Systems Approach to Understanding the Impact of the COVID-19 Pandemic: Implications for the Education and Care of Young Children

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The early part of 2020 saw the world face the unprecedented and wide-ranging challenge of the COVID-19 pandemic. The physical, psychological, and educational effects on children and adults globally were on a scale unlike anything in living memory. Internationally, researchers immediately began to document and attempt to understand the impact of the crisis on all aspects of humanity. A vast array of research articles across a range of disciplines have been published recently on the topic of COVID-19, with undoubtedly many more to come in future years. In order to fully grasp the potential extent of the effects of this crisis, it is essential to adopt a holistic view, considering all of the contextual factors that may affect an individual, particularly the developing child.

The global community of researchers has established multiple effects of the COVID-19 pandemic on children related to their physical health, social development and emotional well-being, as well as their education and care in settings outside the home. However, the findings from this wealth of research need to be consolidated and pulled together in order to make sense of them and take a holistic view of the effects of the pandemic on the child. As Poincare (1905) notes, 'science is built up of facts, as a house is built of stones; but an accumulation of facts is no more a science than a heap of stones is a house' (p. 141). A theoretical framework gives facts structure and relates them to one another, and it guides new research and further recommendations. We propose that by considering various research findings through the lens of Bronfenbrenner's bioecological model, this allows us to do that, and to take a scientific and holistic approach to understanding this important and challenging context. In the remainder of this chapter, we describe Bronfenbrenner's model and

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the five different ecological systems that influence development and discuss how these different systems may shape early development during the COVID-19 pandemic.

Bronfenbrenner's Bioecological Model

Bronfenbrenner's bioecological model of human development maintains that children's development is directly influenced by a series of ecological systems that interact with biological factors (Bronfenbrenner, 1979, 1994, 2005; Bronfenbrenner & Morris, 2006). The model highlights the complexity of interactions across five ecological systems, which all influence a child's development in varying ways, with the child placed centrally within the model. The system at the centre of the model is the microsystem, which comprises children's direct relationships and immediate interactions with family members or caregivers. The mesosystem considers the interactions between microsystems (such as the relationships between the home and the early childhood setting). Bronfenbrenner identified social contexts that impact on the child but do not actually include the child as the exosystem (an example could be the parental work environment). The macrosystem includes wider influencing factors such as cultural norms, societal attitudes, and government policies. The influence of time is encompassed through the chronosystem, where time is considered in terms of the individual across the lifespan or collectively, from a generational perspective or social movement. This theoretical framework recognises the uniqueness of each child's ecosystems, whereby the child is centrally placed within the complex interactions of the systems model. The layered systems, and how they interact, must be considered in terms of their influence on the child's development. Just how these systems interact and influence a child's development is complex and multifaceted, but holistic in nature.

This theory provides a useful framework in which to consider the multiple effects of the COVID-19 pandemic on the developing child, and how those effects manifest themselves in the child's world (see Fig. 2.1). This is particularly pertinent in the context of early childhood education and care (ECEC), as early life experiences leave a lasting imprint on children's learning and development (Center for the Developing Child at Harvard, 2010). This chapter therefore considers the effects of the COVID-19 pandemic from the perspective of each of the ecological systems proposed by Bronfenbrenner, beginning with the macrosystem, and discusses how this framework is useful in consolidating and making sense of the many and varied new research findings reported on COVID-19 that are emerging.

COVID-19 and the Macrosystem

Bronfenbrenner (2005) defines the macrosystem is 'a societal blueprint for a particular culture, subculture, or other broader social context' (p. 150). The World Health
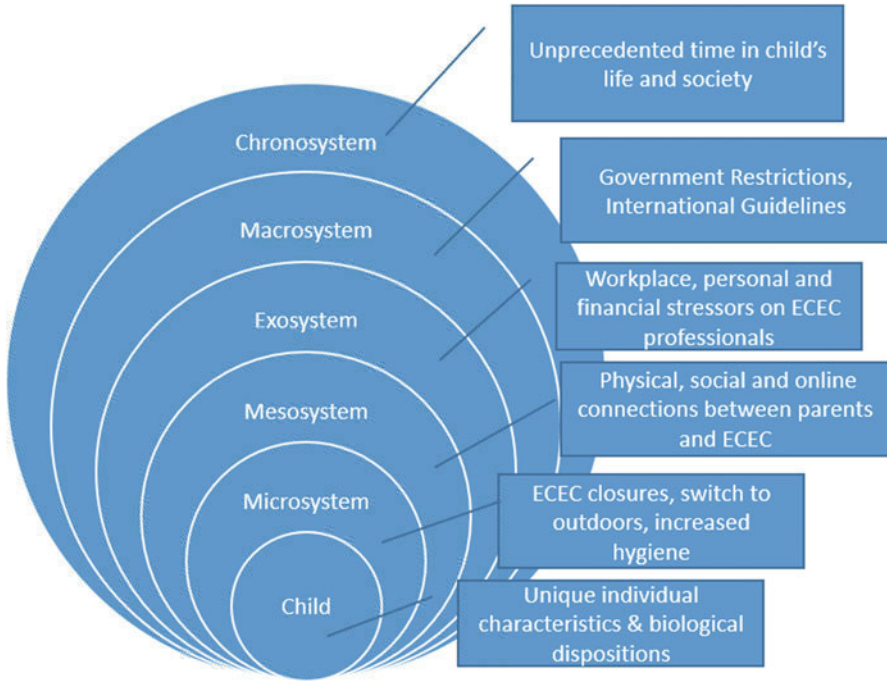
Fig. 2.1 Overview of COVID pandemic from a bioecological systems model

Organization (WHO, 2020) declared on 11 March 2020 that the coronavirus SARS-CoV-2 (COVID-19) epidemic was a global pandemic. The lives of families were severely disrupted in early 2020 when, across the globe, governments placed substantial restrictions on all citizens. New rules about social distance (also called physical distance), working from home, and the closure of schools, and early childhood settings were introduced in many countries. Different governments implemented COVID-19 restrictions in different ways and at different times, to protect citizens and limit the spread of the disease. Commonalities tended to include the encouragement of physical distance between people, a heightened focus on hygiene practices and personal protective equipment as well as working from home for everyone except essential workers.

In relation to ECEC provision, some countries, such as Ireland, ordered the closure of all provision (Egan et al., 2021), while other countries or regions, such as Quebec, Canada, permitted provision for the children of essential workers (Bigras et al., 2021). The closure or limits on provision were also implemented for different lengths of time in different countries. For example, in Ireland, ECEC services closed to all children on 13 March 2020 with a gradual reopening commenced in late June. In contrast, in Quebec, ECEC services were limited to the children of essential workers on 13 March 2020, with a gradual reopening of services from mid-May. ECEC and school provision in some countries, (e.g., Panama and other parts of Latin

America) remained closed for in-person instruction for over a year (UNICEF, 2021). These differences in provision between different countries highlight the importance of macrosystem factors in considering the impact of the pandemic on young children. The impact of the pandemic on their early care and education has differed from country to country (and at times, region to region or locality to locality, whereby restrictions may have been in place in a localised area in line with public health guidelines), as different governments reacted to national COVID-19 case numbers, hospital admissions, and deaths.

Young children's day-to-day experiences in the home and within early childhood education and care have been directly impacted by the macrosystem. At the local, national, and even international levels, the interpretation of the available epidemiological data and a developing understanding of COVID-19 and the consequent responses of governments and society, in terms of public health advice, directly affected young children. When early childhood settings did reopen in Ireland, for example, were specific new government policy guidelines in place advocating for play pods (i.e., small defined groupings of children to limit physical interactions and the spread of the virus), greater use of the outdoor space, social distancing for adults and increased hygiene measures in keeping with public health guidelines (DCYA, 2020a, b, c). Variations in the implementations of restrictions from country to country should be considered by researchers when interpreting the impact of the pandemic on young children around the world.

Initially, based on previous knowledge of the spread of respiratory infections, children were identified as significant vectors for the disease, and it was thought that they could pose a significant risk to older adults, yet this was not supported by the evidence (Lee & Raszka, 2020). In many jurisdictions, the public health advice for older adults was to isolate and this meant that many young children did not meet their grandparents or extended family for some time. As mentioned earlier, the systems interact and influence each other and here is an example that demonstrates the impact that the macrosystem can have on the microsystem in a variety of ways. These wider restrictions imposed at a macrosystem level had a direct impact on the nature of interactions and experiences that children had been used to. Different countries and cultures interpreted the scientific advice in different ways (and depending on the political ideologies in power) reacted in varying degrees in terms of wider welfare policy measures. In Ireland, for example, payments were made for those made unemployed or furloughed due to the pandemic (PUP, Pandemic Unemployment Payment) and supports such as food packages for children and families living in poverty. These policies were also available for ECEC professionals when necessary, such as payments for staff that were furloughed and tax rebates for using domestic resources (e.g., electricity, Wi-Fi) when working from home.

Despite similar restrictions implemented for all citizens, the lives of families and young children were affected disproportionately, again demonstrating just how the macrosystem interacts with other systems such as the microsystem. Within an Irish context (Ombudsman for Children, 2021), and internationally (OECD, 2020a, b), reports of increases in domestic violence and abuse as well as increased rates of child poverty and violations of children's rights have been documented. International

research stressed how poverty put children at the highest risk of suffering from the COVID-19 crisis (OECD, 2020a, b). In a review of the literature, Jalongo (2021) notes that 'the suspension of childcare services due to isolation measures exacted the highest toll on families who were already struggling, and these families are most likely to experience severe, long-term deleterious effects' (p. 766). As a result, in January 2021, during a widespread lockdown in Ireland, early childhood provision for vulnerable young children and families at greatest risk remained open, despite school closures – an example of how the macrosystem can be influenced by the microsystem also.

COVID-19 and the Microsystem

These changes in the macrosystem environment due to the pandemic resulted in changes in every other ecological system in which the child develops. Bronfenbrenner (2005) defined the microsystem as 'a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and material features and containing other persons with distinctive characteristics of temperament, personality and systems of belief' (p. 148). Many young children faced a substantial change in their microsystem as they were placed on a stay-at-home order, and were no longer permitted to see their friends, extended family members, teachers, or caregivers outside the family. This had negative effects on many children and their families with parents having fears over their children's physical and mental health (Fong & Iarocci, 2020). For example, Egan et al. (2021) report that some parents described their young children as 'more subdued', 'very spaced out', and with 'behavioural issues magnified'. Most parents indicated that their young child was missing their friends and playing with other children, as well as missing school or childcare.

Within the microsystem, every family was affected in some capacity and the sense of security, stability, and routine was altered for many. However, despite being in this same 'storm', not every child or family 'was on the same boat' (Albuquerque & Santos, 2021) so to speak, with children being more vulnerable to the wider impacts of the pandemic, such as grief and loss of loved ones. Hillis et al. (2021) estimated that over a million children globally were orphaned due to the pandemic between 1 March 2020 and 30 April 2021. Some children may also have been more vulnerable than others as their microsystems were influenced in different ways or to a greater extent by the other systems. The mental health impacts of COVID-19 are greater for parents in high-risk, marginalised communities, which also has an impact for young children (Alzono et al., 2021). The restrictions and closure of early childhood services posed significant challenges for young children with additional learning needs and disabilities, children experiencing homelessness, and living in emergency accommodation and/or adverse home circumstances (Ombudsman for Children, 2021).

However, it was not the case that every child experienced negative effects of the restrictions and lockdown, as some positive effects were also reported by families (Evans et al., 2020). For example, Egan et al. (2021) found that some parents indicated benefits for their child's play and for family relationships. Spending more time with siblings was noted as a positive effect, with parents describing the increased closeness between their children due to the lockdown, referring to the 'incredibly close bond' or 'a stronger bond with siblings" and that 'now they are best of friends'. Evans and others (2020) also noted parents' views that 'spending more time together has strengthened bonds'. In relation to their child's play, parents also noted positives such as 'much better at self-directed free play', 'play has become more sophisticated' and 'spending lots of time outside' (Egan et al., 2021). The different examples of family experiences, with some children suffering from low mood and anxiety while others thrive, highlight the importance of considering the individual experiences of each child in their microsystem, in how they were affected by the pandemic.

Regardless of the positive or negative impact of the restrictions on children in the early months of lockdown, it seems all children were affected in some way, highlighting the need for a well-educated, highly skilled, responsive, and adaptable workforce in ECEC as they welcomed the children back to their setting. Children also faced changes on their return to their ECEC setting, adjusting to new routines in line with public health advice. Cognisant of children's socio-emotional development and the importance of relationships and play in early childhood practice, many countries developed policy guidelines advocating for a developmentally appropriate approach to social distancing measures within the early childhood settings in the form of play pods' (Department of Children and Youth Affairs, DCYA, 2020a, b, c). Play pods (also referred to as 'cohorting') imply smaller, confined groups of children working with specific adults in designated spaces (Center for Disease Control and Prevention (CDC), 2021). In order to minimise risk of spread of infection, the key person approach was recommended to support meaningful relationships, facilitating closer interaction during this challenging time, while also minimising social contacts and potentially facilitating contact tracing if necessary. From the perspective of a young child, the ECEC microsystem environment changed for them, limiting both the children and adults they could interact with, as well as the toys they could play with and the spaces they could play in.

One substantial change to the ECEC environment that many children were faced with, particularly in Ireland, was a switch to being primarily outdoors rather than indoors. Based on epidemiological evidence on the transmission of COVID-19, the outdoors were identified as a safer place to play. Many early childhood settings across the world, most notably in Scandinavian countries, have traditionally maximised on the outdoor learning environment long before this pandemic. However, in response to public health recommendations, many countries began to place more emphasis on utilising outdoor spaces when they reopened. In a time of restrictions and wider threat to health and well-being, the outdoors also affords children freedom and opportunity to promote well-being – physically and socio-emotionally (Davis et al., 2021). Under initial lockdown measures, in some

jurisdictions, playgrounds had also been closed and some children were deprived of any opportunities to play outdoors (Darmody et al., 2020).

There was also a renewed focus on the importance of hygiene measures and infection control policies (although it should be noted that early childhood settings in Ireland are already highly regulated and inspected from this perspective). However, physical distancing measures and wearing personal protective equipment, such as masks, amongst adults, and children were a new expectation in many parts of the world. Young children were also asked to engage in regular hand sanitising and hand washing. Through responsive relationships and nurturing environments within the microsystem of the early childhood setting, educators were able to support children with these changes in the microsystem environment. Early childhood educators also play an important role in supporting coping mechanisms, addressing grief and loss, and promoting the resilience and well-being of young children (OECD, 2021).

COVID-19 and the Mesosystem

Bronfenbrenner (2005) stated that the mesosystem 'comprises the linkages and processes taking place between two or more settings containing the developing person (e.g., the relations between home and school, school and workplace)' (p. 148). The linkages between microsystems changed dramatically during the pandemic. The connections between the young child's home and the ECEC setting or school had to adapt rapidly to the "new normal." In the early weeks of lockdowns, many schools switched to online provision of education through Zoom and various other educational online apps (Egan & Beatty, 2021). Online provision is more difficult with younger children, but some early years professionals did engage in online provision also (Bigras et al., 2021). For example, some providers facilitated arts and crafts activities, with the parent supporting the child, or engaged in online story reading via YouTube or Skype. These online connections were essential in maintaining the mesosystem links between the home and the early years setting or school. Most early childhood educators indicated that these activities, such as virtual interactions with children and phone calls with parents, made them feel useful while working remotely (Bigras et al., 2021).

However, not all families experienced strong ongoing links with their ECEC or school setting during lockdown for a variety of reasons. For some, the home or the ECEC setting did not have the necessary internet or technology resources to support this link (Atiles et al., 2021). Such communication also requires a certain level of proficiency in digital literacy skills, and, for some families, this may also have been a barrier. For others, it may be that as parents were required to care for their own children at home, while also working full time from home, that the time was not available to support the online connection to the early childhood setting due to work demands, and this sometimes added to stress and anxiety for parents (Timmons et al., 2021). From an inclusion perspective, some young children with additional learning needs and their families found this virtual world of remote learning to be particularly

challenging (Jalongo, 2021). It was difficult to differentiate in terms of learning for individual children and provide a play-based or inquiry-based learning environment (Timmons et al., 2021). From a children's rights perspective, it was evident that there were significant inequalities in terms of access to and participation in early childhood education within this virtual space. Some parents, however, may not have sought the connection to the ECEC setting or school if they felt that their child benefitted from the free time with the lack of structure and routine and increased time for free play. Some parents viewed the lockdown as *'a break from the daily grind',* with 'no stress and rushing anymore' (Egan et al., 2021).

Even after in-person care and education of young children resumed, disruptions to the connections between ECEC practitioners and parents and between the physical environments of the home and the early years setting persisted (Bigras et al., 2021). In relation to the social and physical connections between the ECEC professional and the parent, this was limited and had to be altered to accommodate physical distance and minimise the spread of the virus. For example, in many countries, parents were no longer permitted into ECEC buildings or schools to drop off or collect their child. In many instances, these transitions took place outdoors. From children's perspective, this could represent a considerable change from how things were before the restrictions if the children were accustomed to having their family member help them to settle in when they arrived at school or childcare. In an attempt to support children with this change, some early childhood settings adopted creative approaches and provided sheltered outdoor spaces for drop-offs or child-sized doors or pathways (designed for dramatic effect, such as castle doors).

Conversations between parents and ECEC professionals were also limited by the presence of facial masks and physical distance between them. In one study, 16.8% of ECEC professionals indicated that their interactions with parents were difficult or very difficult to conduct, and these interactions were hindered by a number of factors such as parents not being allowed to enter the early years setting (Bigras et al., 2021). The lack of interactions with parents could also lead to increased anxiety and stress for parents, with some parents noting their worry about their child returning to school or their ECEC setting in advance of its reopening (Egan et al., 2021). In addition to the weakening of social links between the microsystems, there was also a weakening of physical links for children. For example, many ECEC settings no longer permitted children to bring a favourite toy or comfort blanket from home for hygiene reasons. Some settings also required that the child had separate outdoor wear for during the ECEC session that would remain in the setting, and not be brought home. Some settings also requested that school bags (backpacks) not be brought in and that the child might carry their lunch only, so that no additional physical objects were brought from the home setting to the ECEC or school setting.

Kim and others (2021) highlighted the need to focus on strategies that promote parental involvement, particularly for more vulnerable families, and to strengthen community supports in order to reduce the gap in inequality of experience during the pandemic. In an example of the macrosystem affecting the mesosystem, the Irish Government issued guidelines on maintaining relationships in keeping with recommended social distancing guidelines. Strong mesosystem links, in this case

between the home and ECEC, are important in supporting children in challenging circumstances such as the COVID-19 pandemic.

COVID-19 and the Chronosystem

The chronosystem considers the impact of historical and sociocultural factors on child development, as well as current thinking towards children and societal attitudes to childhood. Bronfenbrenner (2005) suggests that the chronosystem also relates to time both in the short term, in considering life experiences, and in the longer term, in considering the life course of the individual. From a sociohistorical perspective, consideration of the chronosystem highlights how advances in technology have facilitated the ongoing mesosystem connections between ECEC, school, and home settings. At no other point in history has it been as easy to communicate remotely with other people. The internet also facilitated ease of access to educational resources and professionals in a way that would not have been possible for most families even 20 years ago.

Considering the chronosystem from the perspective of the lifespan of the child, the timing of the pandemic and resulting restrictions may have quite individual effects on different children depending on their age and their needs when the crisis started. The effects on the child may also be short term or long term (Jalongo, 2021). For example, many infants born during early 2020 will have quite a different first year of life socially, compared to other infants with a lot less exposure to other people, including extended family members. These social differences include a change in both the quantity and quality of social interactions with individuals outside their immediate family (e.g., Vazquez-Vazquez et al., 2021). Due to the limits placed on contact with other people, these infants would have been exposed to fewer people, and those they did meet were likely wearing a face mask. Additionally, the typical close physical interactions with a new infant that would typically occur in extended family gatherings and social networks, of the baby potentially being held and cuddled by people other than their parents, may not have happened. Furthermore, parent and baby groups were cancelled so that infants and toddlers had fewer opportunities to physically interact with children other than their siblings. For example, Vazquez-Vazquez et al. (2021) reported an impact on infant feeding practices due to a lack of "face-to-face" support for new mothers during the lockdown. The reduced physical and social connections may have affected the transition to the early years setting for the infant when their parents returned to work after maternity or paternity leave.

Children with additional needs also face particular challenges, with many families severely negatively impacted by the withdrawal or limiting of early intervention such as physical education and care supports provided by special schools or other health and social care professionals (e.g., speech and language therapists, occupational therapists, and physiotherapists) (Bannink Mbazzi et al., 2021; Couper-Kenney & Riddall, 2021). There is a limited window of opportunity during which early intervention can be most effective in a child's life and the span of the pandemic

and restrictions to date (approximately 18 months) represents a significant proportion of the life of any young child. The early years are a special period during the lifespan of a person of rapid physical, cognitive, and socio-emotional changes (Center on the Developing Child at Harvard, 2010), and it is time that cannot be reclaimed. Suitable interventions that may be very effective at age 3, for example, may be much more difficult at age 6, particularly where advances made by the child have been lost. For example, Egan et al. (2021) noted the case of a parent who identified the regression of their 6-year-old son's behaviour and language abilities stating he was 'emotionally a lot more demanding and behaviours have reverted to that of a younger child. Also, he had speech issues which had much improved after speech therapy, but this has also regressed' (p. 929).

The effects of the restrictions on any individual child will have very much differed depending on the individual child, and also the length of the service withdrawal or limitation that they face which were typically determined by macrosystem factors. Greater limitations of services, and at key points in a child's life, may result in more severe behaviour and language regressions. This then potentially also has implications for the child and the teacher when the child commences ECEC or school again. For many teachers, the child with additional needs returning to their classroom, who may have made substantial gains before the lockdowns occurred, may not be still capable of the same behaviours and the transition may be very challenging for the child. The expectations of the teacher may need to be adjusted and additional supports be made available to the child, family, and the early childhood educators. This highlights the potential interactions between the chronosystem and the microsystem environments in supporting the developing child.

Another example of the importance of the timing of the pandemic in a child's life relates to those transitioning from an early childhood setting to a school setting. This transition represents a large change in the life of a child, and of their family (Quenzer-Alfred et al., 2021). Relationships with peers, friends, teachers, and carers are typically marked and celebrated at the end of the academic year, as the ECEC professional supports the child in moving on from the setting. However, due to the COVID-19 restrictions, it was not possible for these physical 'goodbyes' to take place. Additionally, the transition to the school classroom at the start of a new academic year, typically containing more children and more rules and a new teacher, may have been made more difficult by the restrictions in place. For example, the children may have had to wear masks or enter the building without their parents accompanying them. These factors may have presented additional challenges for the teacher in settling in the children to their new school.

COVID-19 and the Exosystem

Bronfenbrenner (2005) describes the exosystem as 'the linkage and processes taking place between two or more settings, at least one of which does not ordinarily contain the developing person, but in which events occur that influence processes within the