Integrating mental health in the comprehensive care of children and adolescents: prevention, screening, diagnosis and treatment

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The mental health of children and youth is an integral part of overall health and is a necessary cornerstone for lifelong well-being (1,2). For too long physical and mental health have been seen as independent of one another and the latter has been considered less important. In part, the past focus on physical health has been a reflection of the high mortality rates associated with infectious diseases and the primacy of improving survival, but as mortality rates have generally decreased, there has been increasing attention to helping children¹ to thrive and consequently to the key role of mental health in their short and long-term well-being. These factors are fundamental to the genesis of our undertaking this special series of Pediatric Medicine. We did so with an eye toward focusing on the need for a comprehensive and global view of the status of children's mental health.

This series was conceptualized prior to the advent of the world-wide COVID-19 pandemic and the calls for social reckoning that have dominated the United States and many other countries facing racial, class, gender, and ethnic discrimination and violence. Acknowledging these seemingly unrelated global events is relevant because of their broad and sustained impact on the mental health of children (3-6). In the first instance, the pandemic has created particular conditions such as the closure of schools, the escalation of economic hardship and increased social isolation that have aggravated the socio-emotional stress borne by children

and their families. Additionally, the recent pandemic of COVID-19 produced a keen appreciation of the extent to which mental health issues have intensified for children who are sequestered, often in tight enclosed spaces, or those who suffer the trauma of family illness and death, as well as other associated negative consequences of the pandemic. In the second instance, the outcry for social justice has unsurfaced long-standing conditions that reveal fundamental structural inequities, racism and stigma that impact the well-being of children (7,8). This is significant because racism/classism/ gender biases have been increasingly recognized as critical sources of psychological trauma affecting the mental health of children. At times these biases lead to recognizable psychiatric diagnoses such as post-traumatic stress disorder as well as poor health outcomes such as anxiety, depression and suicide (9,10).

Myths and cultural attitudes have accompanied discussions of mental health for generations. It is notable that while these are ubiquitous, they differ across communities both in the degree to which they are recognized and in the ways with which they are approached and dealt. The stigma associated with mental health issues is prevalent in most communities and countries and significantly complicates the discussion of mental health in an international framework.

One might legitimately ask why consider the mental health of children now. First and foremost, the reason is to ameliorate the current suffering of children, which we know

¹ Throughout this edition, the term children is used to include those of all ages up to adulthood (0–18 years).

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to be substantial. Given the current societal priorities and the limited numbers of trained personnel, the toll of these issues far exceeds the resources and capacity to deal with them across all communities and nations. These realities dictate more focus on prevention, and primary prevention, rather than treatment, as these approaches are not only generally preferable in terms of reducing morbidity and suffering of children and their families, but also far more cost-effective. Additionally, it is increasingly apparent that the segmentation of physical and mental health is artificial and that mental health conditions, like those we currently think of as physical are going to be shown to be the result of biological derangements. Hopefully, this recognition will lead to more effective and targeted treatments. Additionally, we recognize the importance of childhood mental health conditions as major precursors of adult morbidity and mortality with its enormous economic and social consequences for the individuals, their children and society as a whole. The evidence that most adult psychopathology begins in childhood and adolescents is overwhelming and is associated with early childhood adversities (11-13).

It is pertinent at the outset to focus on the 2030 Agenda for Sustainable Development Goals (SDGs), adopted in 2015, as an anchoring framework for achieving global prosperity and peace with 17 overarching, distinct subgoals (14). This change in the strategic focus of the global health goals toward greater emphasis on the impact of noncommunicable diseases reflects an understanding of several factors. First, it is a recognition that, in the 21st century, we are an interconnected global community—a fact that was dramatically underscored by the COVID pandemic. Moreover, this global community is one in which each individual is entitled to basic human rights to live free from economic deprivation, poverty and violence and with the opportunity to achieve health as defined by the World Health Organization (WHO) (15)². This definition has gained particular significance with the advent of several scientific discoveries of the 20th and 21st century.

While we heartily endorse this definition, we also note that a more dynamic concept of promoting healthy development and the goal of meeting the child's potential is represented in the derivative definition adopted by a committee of the National Academies of Science, Engineering and Medicine. It defines child health as: "the

extent to which individual children or groups of children are able or enabled to (I) develop and realize their potential, (II) satisfy their needs, and (III) develop the capacities that allow them to interact successfully with their biological, physical, and social environments." (16,17). We believe that mental health is a key component of implementing this definition.

With the amazing biological and biomedical advances, our concepts of what is amenable is constantly evolving, including the understanding of the function of the brain (18). The emergence of the field of epigenetics has revealed that experiences, especially traumatic ones, influence gene expression and is transmitted intergenerationally (19-21). Moreover, neuroscience has begun to link the physiology of the brain to its function. Research is also progressing to better characterize brain function with more robust definitions than those provided by the Diagnostic and Statistical Manual of Mental Health Disorders-5 (DSM-5)'s clusters of symptoms. Unveilling the mysteries of brain function and mental health will hopefully enable interventions to be targeted and effective in reducing not only mortality, but also morbidity and will expand the category of amenable conditions to be even more inclusive of mental health conditions and to improve the quality of life (17,18).

In the interim, we are left with cruder techniques, which nevertheless have shown some promise in alleviating the burden of mental illness. The challenge now is to spread the awareness and existing evidence base to address the mental health challenges of children around the globe. A major thrust must include increasing the role of primary care clinicians in screening, identifying and treating them.

In selecting the authors for this special *Pediatric Medicine* journal series, we drew from a number of connections, trends and imperatives. First, there is urgency to better understand how to integrate mental health in primary care settings/practices to make the prevention of mental health conditions a priority. To this end, it is important for investigators and clinicians with experience to share their knowledge regarding the state of the art in evidence-based care and new models of care that are relevant for the training of child health professionals (22,23). The second focus is on the appropriate screening to facilitate the early identification of subthreshold diagnostic symptoms, as well as to facilitate the application of interventions in the primary care setting. This is especially important given

² https://www.who.int/about/who-we-are/frequently-asked-questions The WHO definition is that "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

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the limited resource of specialty mental health (e.g., psychiatrists, psychiatric nurse practitioners, social workers, psychologists, etc.), as well as, the reluctance of many families to accept mental health referrals (24,25). Third, is the need for an understanding of what constitutes a comprehensive assessment to arrive at the correct diagnosis, even given the limitations of diagnostic formulations such as the DSM-5, which relies on clusters of symptoms to determine a diagnosis, rather than identifying particular brain pathology to target intervention, as is usual in most other medical conditions (19,24). Lastly, it is important to disseminate the knowledge regarding evidence-based treatments for the common diagnoses seen in childhood -such as adjustment disorders, anxiety, depression, attention deficit hyperactivity disorder (ADHD), and aggression, as well as, community-based, culturally relevant approaches to the holistic treatment of the root causes of mental health disorders and ways to mobilize the community responses necessary in the treatment of serious emotional disorders in children (26-31).

In addition to the contextual issues raised above, the editors attended to a few guiding principles. First, the recognition that such a series in Pediatric Medicine needed to reflect, as much as possible, a global perspective of mental health (1,2). Given that the two editors are from the United States, we acknowledge upfront the western/North American centric perspective and hope that this series is but the first of many series that will tackle the clinical and public health challenges of addressing the complex issues of prevention, screening, diagnosis and treatment of children's mental health issues with a cultural lens—respective of different conceptual frameworks and perspectives (32). As such, we acknowledge the limitations in this first series on children's mental health. During the COVID-19 pandemic of 2020–2021, we were impeded by the challenge of reaping articles from the full list of authors initially envisioned to participate in this series. We recognize that the field of children's mental health is imperfect and evolving with scientific advancement and the increasing recognition of the role of trauma and social determinants of health. In addition, while some models of intervention exist, the scalability of these models using a public health approach to mental health remains challenging. We recognize also that the voices of children and teens is not represented in this series—and vitally important in future series with models such as presented by UNICEF's approach to child friendly cities (33-35). Finally, we acknowledge that the stigma attached to the topic of mental health is ubiquitous,

influenced by culture, religion and current societal norms.

With all these caveats in mind, we present 13 articles in four sections that focus on (I) Context, (II) Common Mental Health Conditions, (III) Special Populations and (IV) Innovation & Integration. We hope that the presentation of this initial set of articles underscores the absolute importance of addressing the mental health conditions of all children worldwide.

In the first section on Context, we present two articles, the first entitled Mental Health and Its Intersections with Non-Communicable Diseases (NCD) by authors Nichole Gray and Jonathan Klein set the framework for discussion of mental health as part of the NCDs and provide an overview of the history of child and adolescent mental health practices and prevailing themes that connect mental health with the wider field of non-communicable disease prevention and treatment. They propose that child mental health is and should be a priority non-communicable disease.

In the second, authors Anisha Abraham and Leslie Walker-Harding discuss the important topic of Social Determinants of Mental Health and review the associations between childhood mental health and social conditions such as poverty, food insecurity, neighborhood characteristics, trauma and racism. They raise important questions about the degree to which. social factors determine health outcomes.

Section II on Mental Health Conditions discusses each of the most common child and adolescent mental health conditions in some detail. These state of the art papers are meant to be helpful to clinicians with an emphasis on practical help for primary care clinicians. In each we emphasize the ways to screen and identify the disorder and how to treat it. We begin with the most common of all conditions, and one that is often overlooked: Anxiety in Children and Adolescents. Author Lawrence Amsel uses the framework of cognitive science to render an innovative review of the most common mental health disorder in childhood, its identification, assessment and most effective evidence-based treatment. He also explores some of the evolutionary and biological basis for these disorders. This is followed by a discussion by George Alvarado of Adjustment Disorder in the Pediatric Population. Alvarado provides an up to date review of the epidemiology, etiology, diagnostic criteria, and treatment considerations for adjustment disorder in the pediatric population. Authors Amy Cheung and Mark Sinyor then discuss the epidemic of Depression in Children and Adolescents and outline the appropriate

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and timely care of children and adolescents presenting with symptoms of depression. They provide a narrative review of approved guidelines from the Guidelines for Adolescent Depression in Primary Care, endorsed by multiple professional societies, that is inclusive of assessment, diagnosis, initial and ongoing management, safety planning, and evidence-based treatment. They provide practical guidelines for this often overlooked but important cause of school drop out. In their review of Assessing and Treating Aggression in Children and Adolescents, authors Damilola O. Adesanya, Jessica Johnson, Cathryn Galanter provide evidence-based suggestions for the assessment and treatment of aggression in children, reviewing the types and causes of aggression, comprehensive assessment, treatments, and recovery. They provide a way for primary care clinicians to think about and unravel the different types of aggression they encounter in their practices. Finally, author Peter Jensen reviews the problems of Inattention and Impulsivity in children and adolescents with a developmental and ecological perspective coupled with the review of studies on formal diagnostic processes and interventions to evaluate and treat children with Attention Deficit and Hyperactivity Disorder. Each of these conditions is discussed with an eye toward a practical approach in a primary care setting.

In the third Section on special populations the authors focus on three special groups of interest. Marie McCormick reviews the data on the potential effect of early childhood interventions on later child and adult mental health with a focus on two- general, 'at risk' groups, children who are disadvantaged and those born prematurely in her paper on Early Intervention and Mental Health: Evidence from Premature and Disadvantaged Infants. This is followed by a focus on Mental Health Concerns and Childhood Chronic Physical Health Conditions by Ruth E.K. Stein. She discusses some of the common mental concerns related to chronic physical health conditions of children and youth and effective approaches to helping children and families develop emotionally and maximize opportunity for well-functioning. Then author Karen Olness hones in on the care of Children's Mental Health at Times of Disasters, a group we are seeing in larger numbers each year. She reviews the mental health impact of displacement and natural disasters in the lives of children and the screening tools that may be helpful in assessment and acute interventions aimed at reducing the long term psychological trauma. All three of these papers consider children at higher than average risk for mental health challenges and have an eye toward understanding and incorporating proactive

measures to minimizing the mental health sequelae of the circumstances surrounding these children's lives.

In the last section on Innovation & Integration we explore four distinctive models, recognizing that none has vet been brought to the scale necessary to meet the needs of the children. Yet each affords some new perspective and provides some major challenges to our thinking. The first of these papers, by David Kaye, Sourav Sengupta and Janine Artis reviews a broad array of approaches to integrated physical and mental health care to promote seamless coordination of medical and behavioral health services. Approaches are considered in a continuum from coordinated, to co-located, to coordinated with fully integrated programs. The evidence in support of integrated models to address mental health conditions in children is presented. Following that Penelope Knapp describes a mental health dashboard in her paper on Iterative and Comprehensive Mental Health Assessment and Treatment Planning: The Mental Health Dashboard. This new approach organizes information of a child's life situation and clinical manifestations, in eight domains that considers the child's developmental level. This tool may be used to develop an intervention plan for a child's mental health ranging from normative behaviors to serious emotional disturbances with diagnostic psychiatric disorders.

This is followed by Kimber Bogard, Victor Ortiz-Cortes, Rachel Jackson, and Rebecca Belmonte's article entitled Defining and Measuring Child Health and Well-being: A Parent and Grandparent-led Approach. It is unique in its approach of asking the community to define health and is an exploratory study that engaged previously underrepresented parents and grandparents in defining child wellbeing. The parents and grandparents identified three preliminary domains of Safety, Love and Equity as important in the lives of children as exemplified in the community of East Harlem, New York. It raises the provocative question of how to balance the need for some universal assessments with the uniqueness of the perspectives of individuals, communities and cultures. This is an important and provocative consideration in our desire to incorporate the communities' perspective in future work. In the final article, Engaging Community and Governmental Partners in Improving Health and Mental Health Outcomes for Children and Adolescents Impacted by HIV/AIDS in Uganda, authors Wilberforce Tumwesige, Phionah Namatovu, Ozge Sensov Bahar, Mary M. McKay, and Fred Ssewamala report on an ambitious program to implement a program that will be accepted by the community. They

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lay out four strategies learned in Uganda to facilitate stakeholder engagement. namely consultative meetings, stakeholder accountability meetings, training of key players and policymaker engagement with the aim of maximizing project impact aimed at responding to local needs and improving mental health outcomes. Impressively they are able to achieve their goals repeatedly and to demonstrate their longer term potential for the community.

We are grateful for the hard work of the authors who produced these articles and for their willingness to be part of this pioneering effort to put children's mental health front and center in the international platform offered by *Pediatric Medicine*. We also recognize that there are many other perspectives and examples that we would have liked to include in this volume, which we hope that it will be the first of many to explore this emerging area of concern. There is much more to be learned from other models and initiatives around the globe and it is our hope that they may be published in a follow-up special series. It is also our hope to learn more about the perspectives of different communities and cultures and to include their voices in our future learning.

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