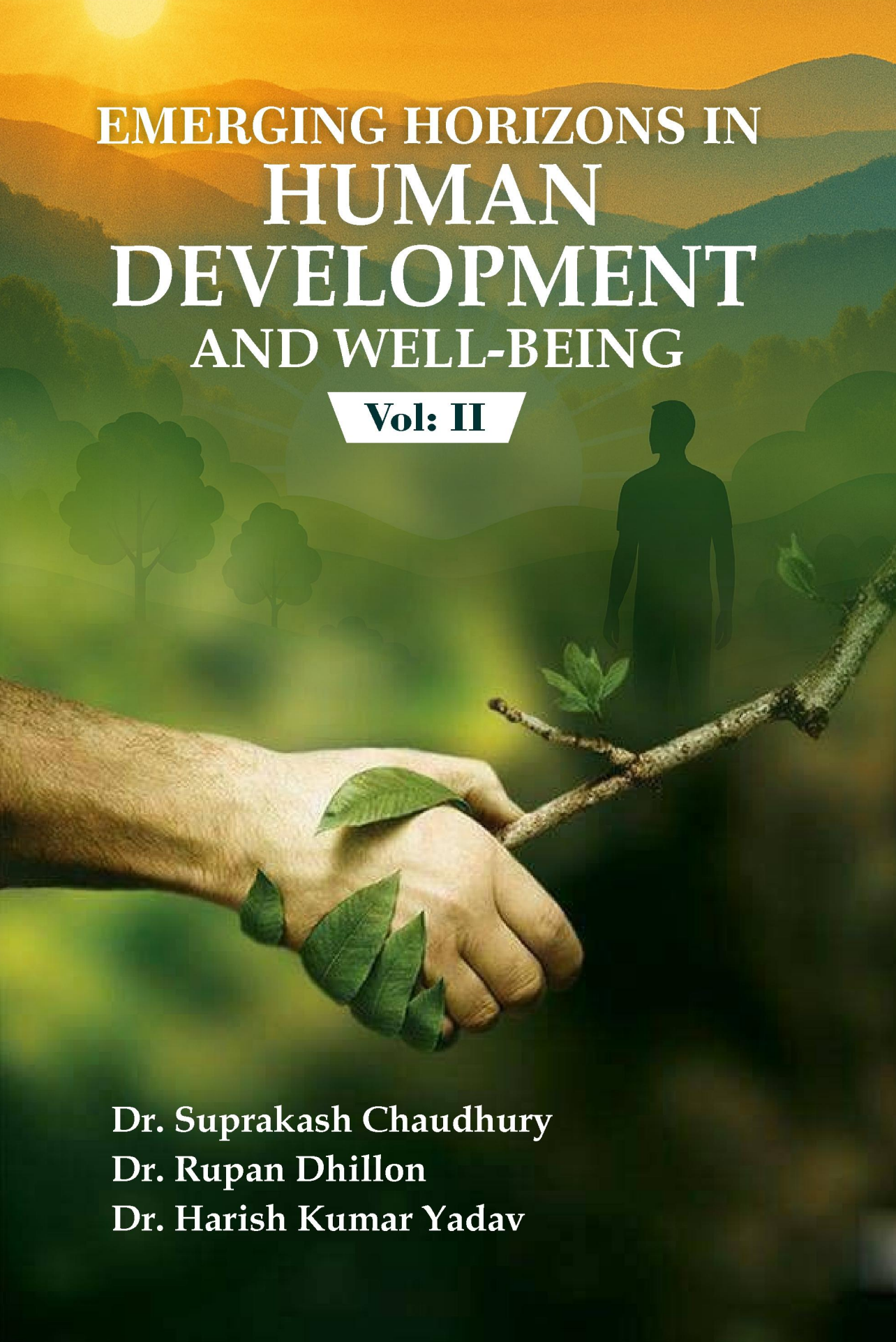
EMERGING HORIZONS IN HUMAN DEVELOPMENT AND WELL-BEING

Vol: II



Dr. Suprakash Chaudhury
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To

the dedicated authors, peer reviewers, and mentors whose commitment and collaboration made this collective work possible

PREFACE

The second volume of Emerging Horizons in Human Development and Well-being continues the journey of exploring multidimensional aspects of human progress in a rapidly evolving world. Rooted in interdisciplinary research and collaborative scholarship, this volume brings together diverse perspectives from academia, practice, and policy to examine the intricate interplay between individual growth, societal structures, and global well-being.

In the face of ongoing social, psychological, economic, and environmental challenges, human development must be viewed not just as a linear progression but as a dynamic and inclusive process. This collection of chapters reflects contemporary concerns such as mental health, education, equity, cultural sensitivity, sustainability, and social justice — all essential to fostering a holistic sense of well-being.

We are proud to present contributions from researchers, educators, and practitioners across varied disciplines, whose critical insights and empirical studies enrich this volume. Their work reaffirms the importance of collaborative inquiry in addressing complex human issues and shaping actionable pathways for the future.

This volume is intended to serve as a valuable resource for students, scholars, policymakers, and professionals committed to advancing human welfare. We hope it inspires further dialogue, innovation, and inclusive action in the field of human development.

We express our sincere gratitude to all the contributors, reviewers, and supporters who have made this publication possible. Their dedication and intellectual generosity are the foundation of this work.

Editors

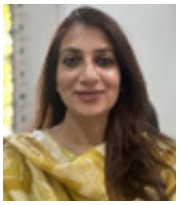
Emerging Horizons in Human Development and Well-being (Vol: II)

ABOUT THE EDITORS

DR. SUPRAKASH CHAUDHURY

Dr (Col) Suprakash Chaudhury, Professor Emeritus, Dept of Psychiatry, Dr D.Y. Patil Medical College Hospital & Research Center, Pune, did his MBBS and MD in Psychiatry from Armed Forces Medical College, Pune and PhD from Gauhati University. He was Prof of Psychiatry at Armed Forces Medical College from 2000-2004; Prof & HOD, Psychiatry at Ranchi Institute of Neuropsychiatry & Allied Sciences from 2005-2012; and thereafter Prof & HOD, Psychiatry at Rural Medical College, PIMS (DU), Loni from 2012-Apr 2017; He is post graduate teacher and examiner of MD (Psychiatry), PhD, MSW & BPTH in Poona University, Maharashtra University of Health Sciences, Ranchi University, Calcutta University, N.T.R. Medical University, West Bengal University of health Sciences, Pravara Institute of Medical sciences (DU), Mahavir tirthankara University, and Dr D. Y. Patil Vidyapeeth (Deemed University). He has won 43 professional awards, published over 800 papers in National & International journals. He is a member of the editorial board of 26 journals, edited/authored 15 books and contributed chapters to 24 books. He is the past president of Association of Industrial Psychiatry of India and Indian Psychiatric Society, Jharkhand State Branch. His research interests include: substance use disorders, psychosomatic medicine, depression, and schizophrenia.

DR. RUPAN DHILLON



Dr. Rupan Dhillon an Associate Professor and Head, Department of Psychology at Guru Nanak Dev University. She stands as a distinguished academic and practitioner in the field of Psychology, with an illustrious career spanning over 19 years. A gold medalist in Psychology, she has consistently demonstrated excellence in teaching, research, and community engagement. She has an expertise in Adolescent Psychology, Counseling, and the integration of Spirituality with Mental Health. She has completed a Major Research Project, sanctioned by the University Grants Commission (UGC), which explored the critical issues of suicide ideation and depression in adolescents. She has an impressive academic portfolio, having successfully guided four Ph.D. scholars to completion and is currently supervising seven doctoral candidates. Her scholarly contributions include nearly 75 research papers published in CARE listed and Peer Reviewed journals, and almost 20 chapters in edited books, and participation in nearly 55 national and international conferences and workshops. She is a peer reviewer for Journal of Behavioural Sciences, Lahore, INSPA and other reputed journals. She is also a member of APA, IAAP, InSPA, NAOP and other psychological associations. Beyond academia, she has emerged as a motivational speaker and resource person, inspiring community with her profound insights and compassionate approach.

DR. HARISH KUMAR YADAV

Dr. Harish Kumar Yadav is a dedicated Assistant Professor in the B.Ed. department at RCU Govt. PG. College Uttarkashi, Uttarakhand. He possesses a strong academic background with postgraduate degrees in Education, Economics, and Hindi. His expertise is further validated by UGC-NET qualification in Education. Dr. Yadav brings over ten years of valuable experience in Teacher Education to his role. He is a passionate researcher who has published extensively in national and international journals and books. Additionally, he has actively presented his research on inclusive education, special education, yoga education, and philosophy at national symposiums. This range of accomplishments demonstrates Dr. Yadav's commitment to fostering well-rounded educators and enriching the field of education.

CONTENTS

24

Growing Up in Crisis: How Climate Change Shapes Physical, Cognitive, and Mental Development

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Abstract

Climate change is becoming one of the biggest and most serious challenges to human development, especially during the important years of childhood and adolescence. Extreme heat, food and water insecurity, displacement, and environmental disasters are all examples of climate-related stressors that can have a big effect on physical growth, cognitive ability, and mental health while people are young. Climate change can produce food shortages that lead to nutritional inadequacies, which can stunting, low birth weight, and brain development problems. Repeated exposure to infectious infections can also weaken the immune system and slow down developmental milestones. Also, moving because to rising sea levels, droughts, and floods makes it harder for kids to get to school, get social support, and get to important services. This makes them more likely to have learning problems and emotional problems. Mental health problems, such as climate anxiety, depression, and post-traumatic stress, are becoming more common among young people and teens, especially those who live in high-risk and underserved areas. These effects are not spread out evenly; people who are poor or on the margins are at significantly more danger because of structural inequalities, bad infrastructure, and a lack of ability to adapt. Even though these problems exist, policies that integrate climate adaptation, education, mental health

support, and food security can help people become more resilient. To protect the health and potential of future generations, it is important to understand how climate change and developmental health are related. This chapter looks at the biological, psychological, and social aspects of climate-related developmental risk and points out approaches to prevent it and build resilience.

Keywords: *Climate change, child development, stunting, mental health, displacement*

Climate Change and Early-Life Developmental Stress: Impacts on Physical and Cognitive Growth

Climate change is a big hazard to development in the early years of life, especially during the important prenatal and early infancy phases. Being around things like excessive heat, not having enough food, and infectious infections during these vulnerable times can have both short- and long-term effects on physical and mental growth (Myers et al., 2017). Being around high temperatures and air pollution while pregnant has been linked to low birth weight and premature birth, both of which are signs of developmental delays and chronic disorders later in life (Bekkar et al., 2020).

Young children are most hurt by not getting enough food because of climate-related crop failures and food shortages. This can cause them to grow more slowly, have weaker immune systems, and have problems with their brains (Costello et al., 2009). Also, infectious diseases like malaria, diarrhea, and respiratory infections, which get worse because of changing weather patterns, hit children under five the hardest and slow down their development (WHO, 2018).

Climate change also has consequences on cognitive development that aren't direct. Toxic stress can happen when people have to move, live in a stressful family, or lose access to school. It changes the structure of the brain and makes it harder to remember, pay attention, and learn (Shonkoff et al., 2012). These effects tend to be stronger in low-income and marginalized groups, which makes health inequities worse.

To make public health initiatives that work, we need to know about these weaknesses. To safeguard developmental outcomes in a changing climate, it is important to use multisectoral methods that include climate resilience, mother and child health services, and early education.

Socioeconomic Disparities and Vulnerability: Unequal Burdens of Climate Change

Not all groups are affected by climate change in the same way. Low-income, marginalized, and resource-poor communities bear the brunt of

its effects. These differences in income and social status make people more vulnerable by making it harder for them to get adaptive resources, healthcare, education, and stable jobs. This makes developmental inequalities worse (IPCC, 2022). People who are poor are more likely to live in locations that are at risk of flooding, drought, or extreme heat, and they often don't have the infrastructure and services they need to be resilient (Hallegatte et al., 2016).

Women and children in low-income homes are more at risk. Extreme weather can make it hard for kids to get enough food, clean water, and medical treatment, which can harm their physical and mental development (UNICEF, 2021). Also, kids often don't do well in school because they have to leave school because they have to move or because they need to help their family get money during times of economic stress caused by climate change (Islam & Winkel, 2017).

Also, income inequality and environmental degradation are linked in a way that makes the poor contribute the least to greenhouse gas emissions but suffer the most from their effects. This unfairness toward the environment also affects cities, where slums and informal settlements are more likely to be affected by heat waves, bad air quality, and diseases spread by water (Watts et al., 2018). These problems make health disparities worse and keep people in poverty and underdevelopment.

To fix these problems, we need to combine policies that protect people, help them adapt to climate change, and make the economy more inclusive. To promote resilience and fair development in the face of climate change, it is important to give vulnerable groups access to education, job opportunities, and clean technologies.

Climate-Induced Displacement and Its Effects on Child and Adolescent Development

Climate change is causing more and more people to leave their homes, which is a global catastrophe that hurts kids and teens in both physical and mental ways. Every year, millions of people have to leave their homes because to extreme weather events including floods, droughts, cyclones, and rising sea levels. This breaks up social networks, makes it harder to get an education, and makes it harder to get health care (IOM, 2021). Children are especially prone to the stress of being displaced since they are going through important stages of physical, emotional, and mental growth.

Displacement often causes important services like education, food, and health care to stop working, which is bad for healthy growth (UNICEF, 2017). When families have to move, kids may miss school, which can cause gaps in their learning, dropouts, and long-term social and economic problems (Machel, 2009). Also, kids who live in temporary shelters or refugee camps

often don't get enough food, have bad sanitation, and can't get immunizations, which makes them more likely to get sick and have developmental delays (WHO, 2018).

During and after displacement, teens are at even more danger of being exploited, getting married too young, working as a child, and being the victim of abuse based on their gender. These things can cause emotional trauma, anxiety, and sadness, which can affect brain development and mental health in the long run (UNHCR, 2020). These problems get worse when there isn't any stability or psychosocial support, which has long-term implications on their resilience and capacity to operate socially.

To deal with the effects of climate change on children's development, humanitarian interventions need to have broad plans that put child protection, ongoing education, and mental health care first. To protect the rights and futures of displaced children and teens, we need to make long-term investments in climate adaptation, planning that includes everyone, and fair development policies.

Nutrition Insecurity and Stunting: The Hidden Developmental Crisis in a Warming World

Climate change makes global food insecurity much worse, which is a hidden but critical developmental catastrophe, especially for kids. Extreme weather events, rising temperatures, and changing rainfall patterns all make it harder for farmers to grow crops and get food to people. This leads to food shortages, less variety in diets, and higher food prices (Myers et al., 2017). These things hit low-income people harder than others, especially pregnant women and small children, who are most at risk of the effects of not getting enough food.

Over 22% of children under five around the world have stunted growth and development because they don't get enough food (UNICEF, 2023). Climate change makes it hard to get enough food, which means you can't get the nutrients you need during important growth times. This can cause permanent physical and mental problems (FAO et al., 2021). For instance, a mother not eating enough healthy food or not having enough food throughout pregnancy can lead to a baby being born with a low birth weight and slow brain development, which raises the chance of developmental delays (Black et al., 2013).

Climate change also makes water and sanitation problems worse, which makes children more likely to get diarrhea and intestinal illnesses such helminths. These infections make them lose more nutrients and impede their growth (WHO, 2022). Infections that happen over and over again and not getting enough food form a cycle of bad health and malnutrition.

Stunting is connected to lower cognitive function, worse school achievement, and less economic productivity in the future, which keeps cycles of poverty and inequality going (Victora et al., 2008). Interventions need to combine programs that help kids eat well with programs that help them adapt to climate change. This might mean supporting maternal and child health services, boosting agriculture that can withstand climate change, and making food delivery networks better.

Mental Health and Resilience in the Face of Climate Crisis: Developmental Trajectories at Risk

More and more people are realizing that the psychological effects of climate change are big concerns to the growth of kids and teens. Extreme weather events that happen a lot, having to move because of them, not having enough food, and the environment getting worse can all cause emotional stress, anxiety, depression, and post-traumatic stress disorder (PTSD), especially in young people (Clayton et al., 2017). These impacts get worse during important times in brain development, when kids and teens are learning how to control their emotions, build their sense of self, and deal with problems.

Kids who go through climate-related disasters like floods, droughts, or wildfires often have strong stress reactions and may develop long-term mental health problems if they don't get help (Cunsolo et al., 2020). Losing a home, school routines, and social networks can have a big effect on developmental stability, which can damage school performance and relationships with other people (Majeed & Lee, 2017).

Teenagers, in particular, are at risk for climate anxiety, which is a long-term worry of environmental disaster. This has been documented more and more among young people around the world. If this isn't dealt with, it can make it harder to stay motivated, plan for the future, and get involved in social activities (Hickman et al., 2021). Also, kids from low-income families are at much greater danger since they don't have as much access to mental health resources and safe places to be.

Even if these things are hard, strategies that help build resilience, such inclusive education, community support systems, and youth-led climate action, can help lessen the psychological impact and encourage positive developmental outcomes (Curtis et al., 2018). To protect the developmental potential of future generations, mental health and educational policies must include climate awareness as part of their interventions.

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