

Conclusion: Putting children at the centre

Mark Tomlinson,ⁱ Lori Lakeⁱⁱ and Sharon Kleintjesⁱⁱⁱ

Children and adolescents are growing up in a world that is increasingly on fire. The COVID-19 pandemic has revealed the deep fissures in our country and in our world – fissures of deep and unsustainable exploitation of our resources, the moral bankruptcy of a world where a handful of individuals own more wealth than 25% of the world's population. A world, using Naomi Klein's phrase, where we are confronted with an increasing number of 'sacrifice zones' – places destroyed by climate breakdown; usually poor, out of the way places where people lack political power.¹ Places where the dying and suffering of children are simply not reported anymore.

Amidst the existential threat of climate change, coupled with the devastating social, educational and economic impacts of the COVID-19 pandemic, it is not surprising that children are grappling with feelings of fear, anger, distress and hopelessness. Add in the challenges of social media and an upsurge of violence and global conflict, and it is clear that we are in a crisis. Andri Snær Magnason is an Icelandic documentary film maker, one-time candidate for President of Iceland and the writer of *On Time and Water*. In his poignant and majestic book, he states that 'because of climate chaos, an entire generation is being asked not what they want to become but what they need to become'.² We are living too fast, pushing the boundaries of nature beyond what they can tolerate, and he makes a strident plea for us to all slow down. He argues that our education systems have become fixated on creating human resources for business and industry rather than on preparing the next generation with the knowledge to live in harmony with nature, the ethics to envision a new way of living and being, and the values to engage with the moral quandaries our children and grandchildren are going to have to deal with.

On Time and Water evokes a new sense of urgency – the time to act is now. So how can we as a society create an enabling environment that better protects our children from harm, builds their ability to cope with adversity and enables them to realise their potential? In this 16th issue of the *South*

African Child Gauge, we have made the case for a whole-of-society, life-course approach that places children at the centre of all policies and programmes, coupled with a shift from short-term political expediency to making decisions today that will enable both our children and the planet to thrive in the future. The Nurturing Care Framework (NCF) has highlighted the key concepts of responsive care, of relationships and environments characterised by early learning opportunities.³ Recently, the NCF has been extended across the life course (not just until the age of three) in a Lancet series that outlines approaches to optimising child and adolescent health.^{4,5}

In addition, what is required is a renewed focus on enabling environments that reach beyond the sphere of the individual child, and that tackle the determinants of health and well-being.⁶ Investments need to extend beyond the strengthening of essential child and adolescent mental health services, and we must put children's health and best interests at the centre of all our policy-making and programming. The intergenerational impact of trauma, poverty and mental ill health forces us to take an incredibly long view of well-being – much like how in the Middle Ages it took seven generations of a family to build a cathedral.

When we fail an individual child, the lifetime and intergenerational impact is felt at a societal level.⁷ The costs of not intervening and of not strengthening support systems for vulnerable children and families are huge.⁷ Investing early is a moral imperative but investing early is also perhaps the best investment that can be made in the generational health of our society. Ensuring that children thrive now will yield benefits in later generations as thriving children become parents themselves.⁸

What is thriving?

Thriving has multiple dimensions, including growth, learning, and the development of healthy interpersonal relationships, creativity, empathy, the capacity for moral reasoning, and social development.³ Crucially, thriving is not an event or

i Institute for Life Course Health Research, Stellenbosch University and School of Nursing and Midwifery, Queens University
ii Children's Institute, University of Cape Town
iii Department of Psychiatry and Mental Health, Faculty of Health Sciences, University of Cape Town

life stage but rather a process that unfolds across the life course. Young people need support throughout their lives – with additional supports at key transitions such as starting school, moving to high school – and at times of stress – such as hospitalisation, or natural disaster. Neuroscience has also shown that the brain continues maturing until at least 24 years of age,⁴ pointing to the need for additional support as young people navigate the transition from school to further education and employment (as outlined in Case 33).

A thriving child, adolescent, or youth is better able to study and gains more from education or training, resulting in a young adult who has higher earning potential and is better equipped to make a positive contribution to society, both

economically and socially.¹⁵ A successful ‘thrive’ agenda will also yield substantial benefits in future generations, as many children will later become parents and all will have a role in supporting the next generation.

Yet Martha Nussbaum’s work illustrates how thriving and the development of individual capabilities is dependent on the creation of societies that provide children with the freedom, opportunities and resources to realise their dreams and potential.⁹ Her list of 10 human capabilities (in Box 4) looks beyond a narrow utilitarian approach to development and foregrounds the importance of human dignity, respect for others, and freedom of speech and association. In doing so, she encourages us to foster children’s agency and active

Figure 32: Building an ecosystem of support



Adapted from: Partnership for Maternal Newborn and Child Health UHL. *Multistakeholder Consultations on Programming to Promote Adolescent Well-Being: Summary Report*. Geneva: World Health Organization; 2022.

Case 32: COVID-19 and child and adolescent mental health

Mark Tomlinsonⁱ

The impacts of the COVID-19 pandemic on child and adolescent mental health are direct and indirect, as well as immediate and delayed. In the early months of 2020, there were few data on child and adolescent mental health. Lessons from previous health crises such as HIV and Ebola were strongly suggestive that there would be traumatic impacts on young people's mental health, including post-traumatic stress disorder, higher levels of depression and aggression, poorer social outcomes and impacts on stigma and discrimination.^{22, 23}

Towards the end of 2020, as the first data began to emerge, the worst-case scenario of a massive spike in mental health difficulties had not materialised. In one study, 43% of children stated that their lives had got worse, yet at least a quarter stated that in fact their lives had got better.²⁴ Some of this may be explained by families and communities coming together to support each other in the immediate aftermath of a scary and unknown virus, and before the full effects of lockdown, school closures and job losses were felt.

In the medium and long term, a different picture has emerged. A 2021 meta-analysis²⁵ found that the prevalence of depression and anxiety for children and adolescents had increased two-fold. A more recent systematic review of global studies on child and adolescent mental health found a high prevalence of COVID-19-related fear, as well as increases in the symptoms of depression and anxiety.²⁶ Worryingly, children and adolescents living with neuro-diversities and/or chronic physical conditions had higher negative mental health outcomes.²⁶ In a UNICEF report focusing only on studies from Africa, rates of mental health burden (elevation of anxiety and depression levels) ranged from 5% to 74%. Unfortunately, many of these studies were of low quality with strong risks of bias, and therefore need to be interpreted with caution. However, they do suggest a complex picture with children and adolescents in some areas struggling considerably more than in others. Another finding from the same study was how vulnerability tended to cluster during the pandemic and in its aftermath, exacerbating existing vulnerabilities.²³ As is so often the case, the most negative impacts are

worst in families facing multiple onslaughts (violence, trauma, job losses, mental health difficulties).

In terms of the more delayed impacts, we have already seen – and continue to see – a 'hunger pandemic' (exacerbated by the Russian invasion of Ukraine), where tens of millions of children are falling into extreme poverty,²⁷ with concomitant severe food insecurity. Hundreds of millions of children have missed significant amounts of schooling, many have not returned to school, and a significant proportion will never return. Increased levels of stunting due to food insecurity will affect school performance and increase the likelihood of later school dropout. When children drop out of school, they are more likely to become involved with gangsterism, violence and be vulnerable to substance abuse. In households living in poverty and food insecurity, parental stress may become severe with implications for violence against, and violence by, children.

COVID-19 and its ongoing ramifications are of significant concern for child and adolescent mental health in the short and long term. There is, however, a positive (perhaps the only positive from the pandemic) and that is the new openness to conversations about mental health globally. Mental health is now a priority for governments, donor agencies and international agencies such as the World Health Organization and UNICEF. It has enabled a fresh awareness of psychosocial well-being and has, in many communities, resulted in a new ethics of care for one another. We have recently seen this in South Africa when, at the beginning of May 2022, the Ministerial Advisory Committee (MAC) on COVID-19 within the Department of Health released an advisory entitled, 'The Mental Health Impact of COVID-19 on South African Society: How to Build Back Better'²⁸. The advisory makes specific mention of children, adolescents and youth, as well as economically disadvantaged people. This high-level focus and attention is a key achievement of many years of advocacy. We must harness this moment to ensure that we place children and adolescents and their well-being at the centre of our build back plans and ensure that mental health is never ignored.

ⁱ Institute for Life Course Health Research, Stellenbosch University, and School of Nursing and Midwifery, Queens University

Box 4: 10 central human capabilities

1. **Life.** Being able to live a complete and satisfying life into old age. Not having life cut short or being made such that it hardly seems worth living.
2. **Bodily health.** Being able to have good health, nourishment and shelter.
3. **Bodily integrity.** Being able to move freely from place to place; protected from violence and abuse; and having choice in matters of sex and reproduction.
4. **Senses, imagination, and thought.** Being free to use the senses to imagine, think, and reason; having the freedom to express political, artistic and religious views; being able to experience pleasure and avoid unnecessary pain.
5. **Emotions.** Being able to experience love, grief, longing, gratitude, and justified anger, without having one's development blighted by fear and anxiety.
6. **Practical reason.** Being able to engage in critical reflection and plan one's life.
7. **Affiliation.** Being able to live with and show concern for other human beings; and being treated as a dignified being whose worth is equal to that of others – without discrimination.
8. **Other species.** Being able to live with concern for and in relation to animals, plants, and the world of nature.
9. **Play.** Being able to laugh, to play, to enjoy recreational activities.
10. **Control over one's environment.** Being able to participate in the political choices that govern one's life; having the right to free speech and association; and being able to hold property and seek employment on an equal basis with others.

Adapted from: Nussbaum M. Human rights and human capabilities. *Harvard Human Rights Journal*, 20: 21-24.

citizenship and to challenge and transform the social and material conditions that continue to prevent the majority of South Africa's children from realising their potential.

Recommendations

Our recommendations strive to create enabling environments that promote children's mental health and ability to act with agency, reach their potential, engage in meaningful relationships, cope with adversity and contribute to their communities.⁶ Ensuring that children are thriving is not an event, an early intervention, a late intervention, a cash transfer or a behavioural programme. These interventions must be embedded in a long-term multidimensional approach, rooted in addressing poverty and inequality, providing opportunities for learning and for family, peer and social relationships, safe communities, quality education and the development of creativity, empathy and resilience.⁸ In the context of climate breakdown, it will require a long-term strategy, instead of short-term thinking informed by the dictates of election cycles.

1. Put children at the centre

Children and adolescents are at the forefront of experiencing the negative mental health impacts of the COVID-19 pandemic, and they and their children are the ones who are going to experience the real impacts of climate breakdown. A global movement with children at the heart of it is key. The

WHO/UNICEF/Lancet Commission 'A future for the world's children?'²¹ as well as Children in All Policies (CAP2030) (<https://cap-2030.org/>) are recent initiatives to ensure we place children at the centre of all policies. Children must be engaged with as the active citizens they are. Internationally, young people are urging country leaders, government and civil society to take action to preserve their future by acting decisively to curb the impact of climate change on the planet's dwindling capacity to sustain future generations. Their insights into the mental health challenges they face, and the solutions that are needed, are critical. They must be engaged with meaningfully, and we must ensure they are key stakeholders in decision-making and policymaking. In South Africa, efforts to actualise this are in their infancy. For example, the expert committees that monitor the implementation of the United Nation Convention on the Rights of the Child and the United Nations Convention of Persons with Disabilities have urged states and civil society not only to report on progress towards the realisation of children's rights, but to also include direct representation from children and adolescents. The appointment of a Children's Commissioner and Child Government Monitors in all provinces offers another important mechanism for increasing the direct participation of children in the design and implementation of policies and programmes (see Case 3 on p38), as is the involvement of Media Monitoring Africa's Web Rangers in the development of information and communication technology policies (see Case 22 on p109).

2. Strengthen child and adolescent mental health services

Calls to address the high levels of adversity experienced by children and adolescents date back several decades,¹⁰ yet the South African Human Rights Commission report¹¹ still points to systemic neglect and lack of resourcing of the South African mental health care system, identifying children and adolescents as a priority group for service resourcing and provision.

Investment is urgently needed to enable a progressive shift from a solely hospital-based, highly-specialist child and adolescent mental health (CAMH) service to a more integrated CAMH system that spans all three levels of care and is more widely accessible to children and adolescents in South Africa. This process should commence with a commitment to equip each province with a CAMH team in the medium term, and health districts with appropriate resources for child-friendly primary mental health care.

CAMH services should be offered across multiple services, systems and levels of care, recognising that specialist CAMH services will be most fully effective when embedded in a well-coordinated, intersectoral system that supports the mental health and well-being of children and adolescents. A Strategic Mental Health Service Plan for the country must therefore ensure that these services are available across the care pathway. At community level, child and adolescent mental health can be promoted by ensuring that the public and non-governmental workforce are equipped with knowledge and skills to promote mental health and well-being, identify signs of mental ill health and offer psychological first aid in response to crises and trauma¹² and, when necessary, knowledge of how and where to refer the child and family to CAMH specialists for more intensive care. Following these specialist health interventions, children and adolescents with serious episodic or ongoing mental health problems or disorders should continue to receive care from their families, and from a well-capacitated mental health team which is easily accessible through local clinics, district hospitals and/or school health services. These services should be complemented by community-based mental health and well-being programmes.

In addition, the scarcity of dedicated specialist health care teams needs to be urgently addressed so that it does not limit their crucial role in reaching out and capacitating district-based health and community services to provide care and support to children, adolescents and their families. It is therefore essential that the proposed package of CAMH services is incorporated into the proposed baskets of care offered by accredited public and private providers under the

National Health Insurance system.¹³ In addition, financing mechanisms must enable formal collaboration between key sectors addressing child and adolescent health, to ensure that the mental health needs of children and adolescents are adequately addressed and resourced in the Health Benefits Package.

3. Address the social determinants of mental ill health

A consideration of enabling environments is key, one that delivers for the individual in the context of community, but one that goes further and tackles the social determinants of well-being, such as inequality. Young people and families experiencing mental health problems or mental disorders are particularly at risk for drifting into or remaining in poverty as a result of reduced productivity, loss of employment, and increased health expenditure. Poverty eradication programmes that enable families to meet their own needs and foster trade and community security can have a direct impact on mental health and well-being and on families' abilities to thrive and contribute to their own and others' health and well-being. Economic and social development is crucial to create the predictable, enriched and nurturing environments needed to meet the physical, emotional and social needs of children of all abilities, including those with special health care needs, and enable them to flourish.¹⁴ At the same time, we need to address the commercial determinants of health that are fuelling overconsumption and challenge the marketing machinery that makes us think that our happiness and self-worth can be found in the latest fashion or the purchase of material things.

4. Strengthen intersectoral collaboration

Any agenda that has child and adolescent thriving at its core must be ambitious and multisectoral. A comprehensive approach to the systemic disablers of mental health requires a multisectoral approach that extends beyond the departments of health, social development and education to develop an ecosystem of support as outlined in Figure 32. Sectors such as labour, energy, agriculture, water and sanitation, roads, community safety and the built environment can make a tangible difference in promoting mental health by addressing spatial inequalities, improving living conditions, and easing the daily life tasks of children, adolescents and their families. Finally, tackling the commercial determinants of ill-health is vital. From the earliest years across the first two decades of life, children and adolescents are exposed to a tsunami of marketing and advertising for junk food, alcohol and gambling.¹⁵

Case 33: An ecosystem of support for youth and pathways to education and employment

Mario Meyer and Anwar Parker

YearBeyond was established in 2014 as a Youth Service partnership between the Western Cape Government, the Community Chest of the Western Cape, the Michael and Susan Dell Foundation, and numerous non-governmental organisations (NGOs). The programme offers 18–25-year-olds who are not in employment, education or training (NEET) a meaningful work experience and a pathway to further studies and work, while encouraging a culture of active citizenship and volunteerism.

The programme is designed to develop participants' professionalism, emotional intelligence, and agency. Which have been identified as core competencies for first-time employees, based on feedback from alumni and corporates.

During their time on the programme, participants engage in a work experience opportunity, for which they receive a stipend, in an organisation that provides public benefit in the local community. Participants develop their competencies through curated personal and professional development training. At the end of the programme, they are supported to identify and action their 'next step' – the objective being a minimum of 75% of participants progressing to further study or work opportunities.

Participants come from communities that face multiple and complex challenges that undermine their ability to self-actualise. This learning is not unique to YearBeyond. The Presidential Youth Initiative has piloted a Basic Package of Support that targets 18–24-year-olds who are NEET and offers them holistic support and refers them to existing support services so that they are able to find pathways (back) into education, training and work.

YearBeyond's solution for this dilemma was to provide young people with an ecosystem of support that caters for their social, emotional, mental, physical, intellectual, spiritual, financial, and occupational well-being. This is offered through a curated youth development curriculum, mentors, and pathway and progression support.

But this core offering is not always sufficient to unlock the potential of all youth. The programme therefore also offers referrals to specialised or crisis services, leveraging a network of NGOs and state providers.

Eighty percent of requests for support have been focused on trauma support, including trauma debriefing, crisis counselling, social work intermediation, life coaching, as well as depression and anxiety management.

After a year and a half of offering this broader service, approximately 10% of participants have requested access to support. However, based on mentor feedback and surveys, the pool of young people needing support is higher, at closer to 20%. But there are a number of barriers that need to be addressed to improve uptake of support:

- There is often stigma attached to reaching out for help. Consequently, many who need support opt not to seek it out. YearBeyond has found that providing young people with information about available support services at the start of the programme and encouraging discussions about well-being within a safe network of relationships results in a higher take up of support.
- Another reason why young people do not access support services is because they do not know where to find support or how to locate the right service. This calls for better information on what kinds of services are available.
- Many resources and services are available online or telephonically, where the associated communication and connectivity challenges of virtual engagements create additional barriers in accessing support. Those who do have mixed responses to the services received.
- Accessing face-to-face services presents additional challenges related to capacity, location, cultural fit, and opening hours of services. Often this requires going beyond public sector services and reaching out to a broader network of organisations.

Strengthening the focus on trauma and mental health

The demand for trauma-related support points to three areas for action. Firstly, there is a need for a multi-disciplinary, collaborative, trauma-informed approach to working with youth. Organisations that work with young people should consciously include trauma education and interventions in their programmatic work and staff training.

Secondly, building a continuum of support is important. Youth who require medical support for mental well-being are often failed by a system which does not adequately cater for outpatients. Notwithstanding the need to address public health system failures, the responsibility for providing support services to young people cannot rest with the public health system alone. Finally, every youth programme should provide information and navigational skills so that young people are able to access services.

5. Adopt a life-course approach

Interventions to prevent mental health problems and enhance mental health and well-being must start as early as possible and continue as needed across the life course. As children transition to adolescence, continued access to supportive parenting, psychosocial support, and the prevention of injuries, violence, harmful practices and substance abuse; and access to sexual and reproductive health information and services can enhance their mental health and well-being. Preventing negative events early in life must be coupled with targeted interventions further on in the life course that bolster early promotion and prevention efforts to ensure that these early gains are not eroded. What is needed is not only prevention and early intervention, but also sustained investment in child and adolescent mental health.

6. Take an intergenerational approach

A life-course approach should be expanded to account for the ways in which children and their family's mental health and well-being are interdependent and have an intergenerational impact on the mental health and well-being status of future generations. Supporting children and their families living under physically and psychologically adverse conditions provides the potential for improvements in mental health and well-being of both current and future generations.¹⁴ Key here is recognising the intersections between violence against children and violence against women, and how violence may beget violence across generations.

7. Proactively address discrimination and exclusion

Policy development, implementation and resourcing to promote the mental health and well-being of children and adolescents must mainstream responses to the mental health of marginalised young people, including those discriminated against on the grounds of race, class, sex, gender and ability. Actions should prioritise the transformation of our institutions and society to create more tolerant, welcoming, inclusive and enabling environments – where all children are treated with dignity and respect and given equal opportunity. For example, explicit attention to gender discrimination requires actions which break down harmful beliefs and practices that give rise to violent and toxic forms of masculinity. A gendered lens must also consider children's sexual orientation and gender identity and challenge the ways in which the mental and physical health of children, adolescents and adults self-identifying as LGBTQIA+ are threatened by discrimination, social ostracization and threat of incarceration.

8. Close the gap between policy and implementation

Laws and policies must actively address the deep-rooted structural inequalities that continue to compromise children's survival, health and optimal development. South Africa has some of the most progressive and powerful policies and laws in this regard, but all too often, implementation is compromised by a lack of resources and political will. Laws and policies are passed nationally but implemented locally. Therefore, efforts to build the capacity and commitment of local authorities, coupled with community demand and civil society advocacy, are essential to strengthen accountability and enhance the quality of services.

9. Strengthen the evidence base

Given the paucity of research into child and adolescent mental health in South Africa, a number of research avenues need to be explored. South Africa should invest in a national prevalence study to provide accurate information on the extent of child and adolescent mental disorders in the country. Such a study would provide accurate data that can be used to advocate for greater investment in CAMH, guide the planning of services, and assess their impact. Secondly, we need to invest in innovative studies using child participatory methods, human-centred design and programme evaluation. Thirdly, we urgently require research to enhance the design and delivery of state services. Finally, there is a paucity of data focusing on mechanisms linking economic conditions and mental health, related outcomes for children's mental health, and cost-effectiveness of interventions to prevent or treat childhood mental disorders.^{16, 17}

10. Be open, agile, responsive and resilient

Looking back at the COVID-19 pandemic and looking forward to a world undergoing rapid and unprecedented change, it is essential that we develop systems and services that are able to adapt and respond in agile ways to emerging shocks and crises. This focus on building resilient systems needs to extend beyond disaster preparedness to include efforts to build 'everyday resilience', and the leadership practices, organisational culture and social networks that enable people and systems to adapt well to acute shocks and more chronic forms of stress and adversity.¹⁸ To build resilient systems, we must recognise the role of the transformed, multidimensional, cross-sectoral approach we emphasise in this volume in preparing and enabling our children and adolescents to be able to lead their own and the next generations, responses to current and future crises. Ringfencing resources for children's services in times of crisis is an essential first step.

Case 34: Addressing the mental health impacts of climate change

Hanna-Andrea Rotherⁱ and Linda Theronⁱⁱ

Impacts of climate change for South Africa

South Africa faces many challenges linked to climate change. A major concern is the global increase of extreme weather events (EWEs) or natural disasters such as storms, droughts, flooding, heatwaves, high winds and wildfires. Figure 33 illustrates the EWEs' impact on physical, mental and community health. This includes direct impacts on health (e.g., extreme heat stress, malnutrition, mental health strain, violence, injury and disease), as well as indirect impacts (e.g., on water scarcity, agriculture, infrastructure such as schools and health facilities).²⁹

Climate change also intensifies social and economic inequalities,³⁰ and poor children and adolescents are predicted to carry the bulk of the negative climate change impacts³¹. For example, flooding of urban townships will destroy informal housing and increase children's exposure to mould and vector-borne diseases, while drought and water scarcity is likely to increase rural to urban migration. UNICEF describes the climate crisis as a child rights crisis, and South Africa is ranked as a medium- to high-risk country on the Children's Climate Risk Index which

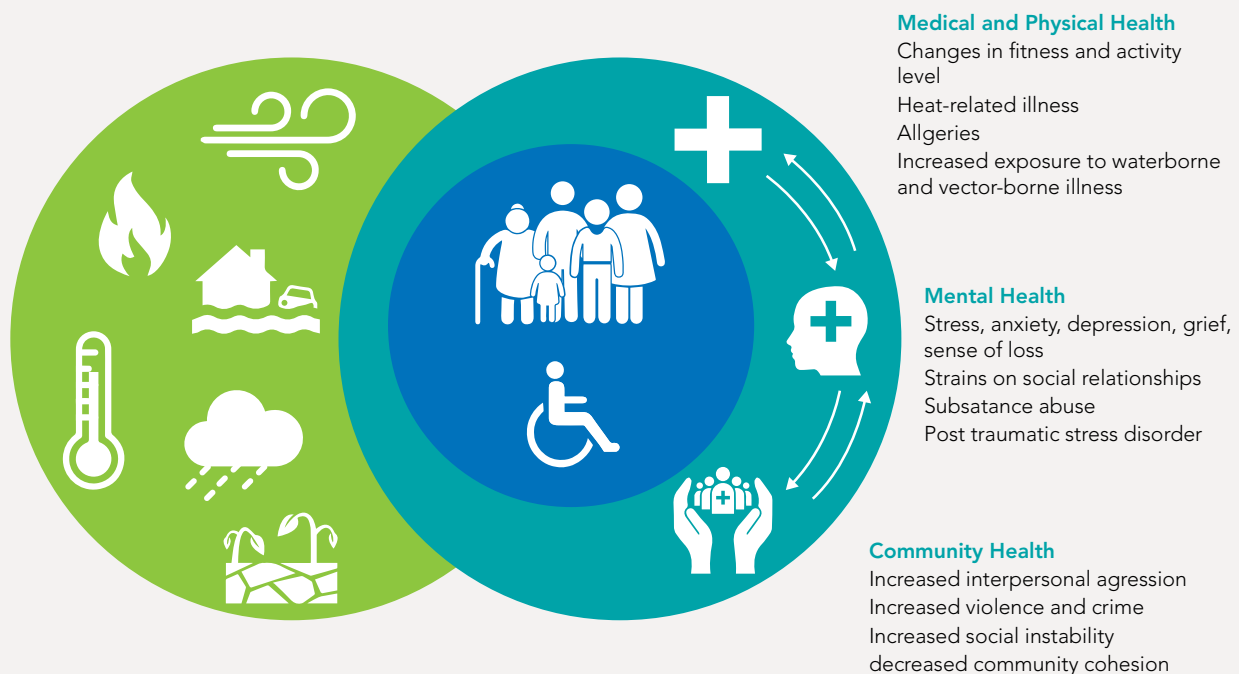
measures children's vulnerability to environmental and climate stresses, hazards and shocks.³²

Climate change impacts on mental health

Relatively few studies have investigated the effects of climate change on child and adolescent mental health,^{31,33} and more especially in African settings where children and adolescents constitute the majority of the population³⁴. These oversights are problematic as most mental health difficulties commence in childhood and adolescence, and young people living in these settings are least likely to have access to mental health services. The studies that have considered child and adolescent mental health in relation to climate change underscore how climate change effects put young people at high risk for psychological distress and mental illness.^{31,33,35-37} This includes risk for first onset, relapse, or aggravated mental health problems.

Direct impacts. Children and adolescents who are exposed to climate change effects, such as floods, droughts and other EWEs and hotter temperatures, are vulnerable to developing mental disorders including anxiety, depression, substance abuse, and post-traumatic

Figure 33: Impacts of climate change on physical, mental and community health



<https://www.psychiatry.org/patients-families/climate-change-and-mental-health-connections>

ⁱ Division of Environmental Health, School of Public Health and Family Medicine, Faculty of Health Sciences, University of Cape Town
ⁱⁱ Department of Educational Psychology, Faculty of Education, University of Pretoria

stress disorder.³⁸ Heat exposure is typically associated with increased aggression and violence. There are also concerns about young people's capacity to concentrate and make academic progress when poorly insulated and ventilated classrooms expose them to heat stress, as is typically the case in many South African schools.³⁹ Further, girls appear to be more prone to experience negative mental health impacts from exposure to EWEs.⁴⁰

Child and adolescent awareness of climate change threats often translates into psychological distress referred to as 'climate-anxiety' or 'eco-anxiety' – not to be confused with a 'pathological condition'.⁴¹ Eco-anxious young people report anger, fear, despair, and grief⁴² linked to perceptions of no hope for a future and being failed by governments and adults.⁴³ These emotions are more pronounced for young people exposed to high climate risk (e.g., the Philippines).⁴⁴ There is an indication that the enduring impacts on child and adolescent mental health will be felt for years to come as a result stress of climate change and the 'moral injury'⁴³ of governments' failure to put in place effective responses.

Indirect impacts. Often, child and adolescent mental health is indirectly affected by the negative impact of EWEs and rising temperatures on children's social and physical ecologies. For example, weather shocks can diminish caregivers' capacity for quality parenting, disrupt services and social networks, jeopardise livelihoods, and prompt displacement. Similarly, heat-exposed adults may struggle to regulate their emotion and behaviour thereby increasing the risk of domestic and other forms of violence.⁴⁵

Indirect effects can start in utero when the stress of EWEs or heat can compromise healthy prenatal development in ways that then give rise to mental health challenges in childhood and adolescence.³³

Mitigating harm and promoting resilience

Key is to put mechanisms in place to buffer children from climate impacts – this includes mitigating and adapting to the effects of climate change and building the resilience of children, families, and communities.

Resilience is the capacity to adjust well to significant stress (e.g., to sustain or regain mental health following exposure to severe floods). Youth climate justice activists take the responsibility on themselves to facilitate such adjustment. Their activism can have positive personal effects too, building mental health resilience³⁷ and helping young people experience mastery and feel less hopeless

about the future. Yet children's capacity for resilience is only partly shaped by their personal resources (e.g., agency; problem-solving skills). In addition, the capacity for resilience is shaped by resources that are distributed across the multiple systems that young people are connected to.^{46, 47} Examples include resources within young people's social and physical ecologies. For instance, caring, competent parents; functional, enabling schools and child-care facilities; opportunities to play with friends; well-insulated classrooms and homes; and disaster-ready built environments. Together, these multiple resources promote a sense of safety, calm, self- and collective efficacy, connectedness, and hope.^{37, 48} In short, child and adolescent resilience to heat or severe weather events depends on how well their social and physical ecologies respond to climate change threats or events.

In South Africa, not only should every child be educated on climate change and the impacts on their health, but they should also be provided with interpersonal support to develop the skills to seek help, solve problems and soothe themselves to strengthen their resilience. However, the onus for resilience to climate change threats is not only on young people. Instead, resilience is a shared responsibility. Social ecologies that young people interact with daily (such as their immediate families or school communities) as well as more distant ecologies (such as government departments and policy makers) are key partners in building young people's resilience to climate change threats.⁴⁹ For example, caregivers, teachers and schools are typically the first to respond to young people impacted by EWEs. Because EWEs typically disrupt family and school functioning, a first step is to support families and schools to restore everyday routines.⁴⁹ In this regard, schools have a special responsibility to be disaster ready,⁵⁰ and practitioners have a special responsibility to prepare parents and teachers to support child and adolescent mental health in the face and aftermath of climate stress,⁴⁹ as well as to support parents and teachers to maintain their own well-being,⁵¹ while communities have a responsibility to safeguard and restore basic resources (such as electricity) that underpin family and school routines.

While it is important to activate resilience measures across multiple systems to protect children and adolescents' mental health, we should not lose sight of the root of the problem. Efforts to mitigate climate change and reduce CO₂ emissions in South Africa must be equally

prioritised through a just and rapid transition to clean energy sources, clean transportation and sustainable infrastructure and agricultural practices.

Adaptation plans in South Africa should provide guidance on how communities and health systems infrastructure can prevent EWEs effects⁵² and buffer potential mental health impacts. Building on current research, these plans should incorporate child and adolescence appropriate resilience and adaptation benchmarks that need to be achieved.⁴¹ This includes a commitment to improving mental health services in South Africa to ensure timely and adequate treatment to prevent the mental health effects of climate change persisting into adulthood. Adaptation strategies need to be guided not only by the extent of EWEs but should also recognise children and adolescents' particular vulnerability to mental health stressors. It is therefore vital

that South Africa's climate adaptation strategy makes specific reference to safeguarding child and adolescent mental health from the direct and indirect impacts of climate change, which is currently not the case.

Preventing and responding to climate stressors impact on children and adolescent's mental health requires a multidimensional approach that addresses young people's particular developmental vulnerabilities to the multiple impacts on physical, mental and community health. While these responses need to occur at the international, national, sub-national and community level, it is ultimately those in power who wield the means to make a significant impact. Youth climate activism – and the inclusion of youth in developing the policies that will impact their future – provide validating and empowering channels to advance youth resilience and climate justice. In South Africa, this has yet to become a reality.

But in these extraordinary times, Ann Masten's work reminds us that the secret to building resilience is rooted in 'ordinary magic', including 'close relationships with competent caring adults, committed families, effective schools and communities, opportunities to succeed, where belief in the self is nurtured by positive interactions in the world (p14).'¹⁹

Conclusion

The foundations of healthy adulthood are laid in childhood and adolescence, and the core of our humanity lies in our mental well-being and our capacity for healthy engagement with others. The COVID-19 pandemic has shone a harsh spotlight on our existing societal fissures and nowhere is this truer than in how we have treated children and adolescents. Despite being at considerably lower risk of infection and severe illness, children and adolescents have paid a massive cost in terms of schooling lost and missed opportunities for peer interaction. Crucially, decisions about school closures were made for children by adults without any consultation or engagement. No one would suggest children and adolescents would have sacrificed the lives of their parents and grandparents for a few extra days of school. But from time immemorial, we have failed to engage with children and

adolescents meaningfully about their lives, and in the decisions we have made for them and in their name.

We have failed to recognise their drive and creativity, and we have underestimated their resilience, creativity and capacity to persevere in times of challenge. Most profoundly, we have failed to fully grasp the clarity of thought of children and adolescents. This clarity, coupled with their curiosity and a willingness to take risks, is perhaps a function of their not having a vested interest in the status quo.²⁰ Increasingly, however, they are looking around their world and noting our failure as adults, leaders and policymakers to act in their best interests.

The pandemic is a minor dress rehearsal for what climate breakdown portends. The children and adolescents of today are going to have to live with the consequences of our actions – and our failures. We have a brief window of opportunity to act and put children at the centre of all that we do, to harness their energy, curiosity and clarity of thought, and to build resilient communities better able to withstand the challenges to come. Placing the well-being of children and adolescents at the centre of all our policies and actions, and providing opportunities for them to learn, grow and participate in decision-making, will ensure that our 'societies' soul' is one that Mandela – and our children – would be proud of.

Case 35: The global cost of inaction

Donela Besadaⁱ, Sumaiyah Docratⁱⁱ, Crick Lundⁱⁱⁱ

“Economists have estimated that mental, neurological and substance use (MNS) conditions will cost the global economy USD 16.3 trillion (USD 7.3 trillion from LMICs) in the period 2010–30 – more than cancer, diabetes, and respiratory diseases combined.”⁵³

Global estimates reveal that approximately half of mental health conditions have their onset in the mid-teens, rising to nearly three quarters by the mid-twenties.⁵⁴ Amongst those between 10 – 24 years, MNS conditions represent the largest cause of disability, and among the five leading contributors to the global disease burden.⁵⁶ Countries reporting the largest proportion of children and adolescent populations are amongst those most likely to lack the inclusion of child and adolescent health services within mental health policy.⁵⁷ Furthermore, child and adolescent mental health (CAMH) receives approximately 0.1% of overseas development health financing, intensifying the continued neglect of mental health care, in particular, amongst this population.⁵⁸

Low-and middle-income countries face a myriad of challenges in tackling their MNS, including the CAMH burden, particularly in the context of high levels of public debt and additional pressures imposed by the COVID-19 pandemic on all major sources of development finance, inefficiency of public health spending, and competing disease priorities. The synergies that exist between CAMH and other health and development priorities call for an integrated response by governments to address the common risk factors and systems barriers that exist.

What is the role of investment cases?

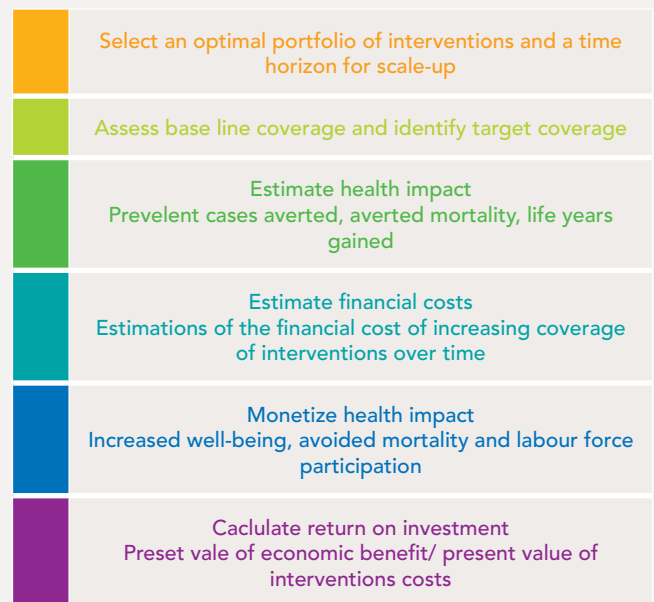
“An investment case provides a compelling argument to potential investors on the desired impact, benefits and/or returns accruing from targeted allocation, release and utilization of resources for key priorities in a given context.”^{59(p. 13)}

Commitments to accelerate global progress towards the Sustainable Development Goals have spurred a series of collaborative efforts between the World Health Organization (WHO), the United Nations Development Programme (UNDP) and national ministries of health to

develop economic arguments to motivate for investment action to address the burden of non-communicable disease. At best, the generation of locally relevant evidence may prompt national governments to increase expanded access to effective clinical interventions for CAMH through enacting bold fiscal, regulatory and policy measures.

The investment case involves a series of six steps as illustrated in Figure 34.

Figure 34: Steps for developing a mental health investment case



Adapted from: World Health Organization, United Nations Development Programme. *Mental health investment case: A guidance note*. Report No.: 9240019383. 2021.

Economic benefits hold instrumental value (through improved educational attainment and an available productive workforce later in life) because of avoided mortality, whilst broader social benefits carry intrinsic value (through increased well-being). The return on investment, presented as the benefit-to-cost ratio, accounts for both, with a ratio greater than 1 indicative of a valuable investment.

$$\text{Benefit – cost ratio} = \frac{(\text{value of increased well-being} + \text{value of increased productivity})}{\text{intervention costs}}$$

i Health Systems Research Unit, South African Medical Research Council

ii Alan J. Flisher Centre for Public Mental Health, Department of Psychiatry and Mental Health, University of Cape Town

iii Alan J. Flisher Centre for Public Mental Health, Department of Psychiatry and Mental Health, University of Cape Town; and Centre for Global Mental Health, Health Service and Population Research Department, Institute of Psychiatry, Psychology and Neuroscience, King’s College London

Adapting interventions to local needs

A South African mental health investment case was undertaken to adapt global treatment recommendations to the national context.⁶⁰ The investment case included a number of important additional innovations, including: (1) strong collaboration with provincial departments of health to contextualize the analysis within implementation realities, (2) a broad consultation with a panel of experts through a Delphi study to obtain consensus across intervention priorities, (3) increased focus on primary health care and redistribution of resources towards the development of community mental health services, and (4) consideration of programmatic enablers, including governance arrangements in the health system and broad sectoral responsibilities, amongst others.

Results of the South African mental health investment case for children and adolescents

The investment case included the following interventions targeted at children and adolescents:

- universal and indicated social-emotional learning programmes for learners;
- psychosocial support and treatment for anxiety and depressive disorders;
- diagnosis and management of behavioural disorders, including conduct disorder and ADHD through family psychoeducation; and
- diagnosis and management of intellectual disabilities, including through the provision of community-based services.

The analysis demonstrates returns on investment of R2.30 and R3.60 for every R1.00 invested, for universally provided socio-emotional learning programmes, and intensive psychosocial interventions and medication for

children with moderate-severe depression, respectively. Modelled returns on investment for child and adolescent populations are likely to be much larger than current methodologies allow for, as immediate productivity gains from this population group could not be included. This is mainly because there is not yet an established methodology for translating educational improvements to increased job and earning potential later in life. This has likely contributed to an underestimate of the returns on investment modelled for interventions for childhood behavioural and conduct disorders, anxiety, and intellectual disability. Estimated returns are further limited by extremely high rates of unemployment, exacerbated by the COVID-19 pandemic. Despite these limitations, investments in CAMH are recognised as key to global development and economic recovery.

Making an economic case for investment is a strong advocacy tool but has been criticised for its narrow focus on productivity as the primary outcome, and its failure to consider additional benefits (including improvements in inequality, discrimination and human dignity).⁶¹ Consequently, these economic arguments should be considered in tandem with broader public health and health system goals and a nation's human rights obligations. The principles underlying the South African Mental Health Investment Case were therefore not only guided by cost-containment objectives, but also by the moral imperatives for rights-based, quality care.

In summary, both global^{62, 63} and local adolescent investment cases focusing on the risk factors associated with CAMH and early interventions to address these conditions, provide a strong, quantifiable justification for child and adolescent health to be made an explicit priority in national and international policy.

References

1. Klein N. *This Changes Everything: Capitalism vs the climate*. New York: Simon & Shuster; 2014.
2. Andri Snaer Magnason. *On Time and Water: A History of Our Future*. London: Serpents Tail. 2020
3. World Health Organization. *Nurturing Care for Early Childhood Development: A framework for helping children survive and thrive to transform health and human potential*. Geneva: WHO; 2018.
4. Black RE, Liu L, Hartwig FP, Villavicencio F, Rodriguez-Martinez A, Vaidetti LP, et al. Health and development from preconception to 20 years of age and human capital. *Lancet*. 2022;399(10336):1730-40. 10.1016/S0140-6736(21)02533-2.
5. Bhutta ZA, Boerma T, Black MM, Victora CG, Kruk ME, Black RE. Optimising child and adolescent health and development in the post-pandemic world. *Lancet*. 2022. 10.1016/S0140-6736(21)02789-6.
6. Tomlinson M, Hunt X, Daelmans B, Rollins N, Ross D, Oberklaid F. Optimising child and adolescent health and development through an integrated ecological life course approach. *BMJ*. 2021;372:m4784. 10.1136/bmj.m4784.
7. Desmond C, Watt K, Tomlinson M, Williamson J, Sherr L, Sullivan M, et al. Other people's children and the critical role of the social service workforce. *Vulnerable Children and Youth Studies*. 2022:1-13.
8. Tomlinson M, Ross DA, Bahl R, Rollins N, Daelmans B, Simon J, et al. What will it take for children and adolescents to thrive? The Global Strategy for Women's, Children's, and Adolescents' Health. *The Lancet Child & Adolescent Health*. 2019;3(4):208-9. 10.1016/S2352-4642(19)30004-5.
9. Nussbaum MC. *Creating Capabilities: The human development approach*. Cambridge, MA: Harvard University Press; 2011.
10. Reynolds P, Dawes A. *Truth and Reconciliation Commission: Focus on children and youth*. May 1997. *Truth and Youth: Pain and blame*. 1997.
11. South African Human Rights Commission. *Report of the National Investigative Hearing into the Status of Mental Health Care in South Africa*. 14 and 15th November 2017. Pretoria: SAHRC; 2017.
12. Kriel E, Rademeyer M. *Psychological trauma for children, adolescents and their families*. A guide for first responders. 2021. <https://www.unicef.org/southafrica/media/5731/file/ZAF-psychological-first-aid-children-adolescents-families-experiencing-trauma-2021.pdf>.
13. Department of Health. *Government Gazette no. 42598, National Health Insurance Bill, 2019*, 26 July 2019. 2019.
14. United Nations. *Every Woman, every Child: The global strategy for women's, children's and adolescents' health (2016-2030)*. 2015. <https://www.who.int/life-course/partners/global-strategy/globalstrategyreport2016-2030-lowres.pdf>.
15. Clark H, Coll-Seck AM, Banerjee A, Peterson S, Dalgligh SL, Ameratunga S, et al. A future for the world's children? A WHO-UNICEF-Lancet Commission. *Lancet*. 2020;395(10224):605-58. 10.1016/S0140-6736(19)32540-1.
16. Golberstein E, Gonzales G, Meara E. How do economic downturns affect the mental health of children? Evidence from the National Health Interview Survey. *Health Economics*. 2019;28(8):955-70.
17. Schmidt M, Werbrouck A, Verhaeghe N, Putman K, Simoens S, Annemans L. Universal mental health interventions for children and adolescents: A systematic review of health economic evaluations. *Applied Health Economics and Health Policy*. 2020;18(2):155-75.
18. Barasa E, Mbau R, Gilson L. What is resilience and how can it be nurtured? A systematic review of empirical literature on organizational resilience. *International Journal of Health Policy and Management*. 2018;7(6):491-503.
19. Masten AS. *Ordinary Magic: Resilience in development*. New York The Guilford Press 2014.
20. Hershovitz S. *Nasty, Brutish, and Short: Adventures in Philosophy with my Kids*. London: Penguin Press; 2022.
21. Clark H, Coll-Seck AM, Banerjee A, Peterson S, Dalgligh SL, Ameratunga S, et al. A future for the world's children? A WHO-UNICEF-Lancet Commission. *Lancet*. 2020;395(10224):605-58.
22. Sherr L, Cluver L, Tomlinson M, Idele P, Banati P, Anthony D, . . . Hunt X. *Mind Matters: Lessons from past crises for child and adolescent mental health during COVID-19*. . Innocenti, Florence: UNICEF Office of Research. 2021.
23. Sherr L, Cluver L, Tomlinson M, Laurenzi C, Roberts K. *Everybody Knows: COVID-19 Mental health and Psychosocial support needs for adolescents and young adults in the ESAR region*. Nairobi: UNICEF ESARO. 2022.
24. Vizard T, Sadler K, Ford T, Newlove-Delgado T, McManus S, Marcheselli F, Cartwright C. *Mental Health of Children and Young People in England, 2020*. London: NHS: Health and Social Care Information Centre. 2020. [mhryp_2020_rep.pdf (digital.nhs.uk)]
25. Racine N, McArthur BA, Cooke JE, Eirich R, Zhu J, Madigan S. Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: A meta-analysis. *JAMA Pediatrics*. 2021;175(11):1142-1150.
26. Samji H, Wu J, Ladak A, Vossen C, Stewart E, Dove N, . . . Snell G. Review: Mental health impacts of the COVID-19 pandemic on children and youth - a systematic review. *Child and Adolescent Mental Health*. 2022;27(2):173-189.
27. Tomlinson M, Richter L, Slemming W. What the science of child and adolescent development contributes to understanding the impacts of COVID-19. *South African Journal of Science*. 2021;117:1-2.
28. Ministerial Advisory Committee. *The Mental Health Impact of COVID-19 on South African Society: How to Build Back Better*. Pretoria: Department of Health: Ministerial Advisory Committee (MAC) on COVID-19. 2022. [https://sacoronavirus.b-cdn.net/wp-content/uploads/2022/05/MAC-Advisory_Mental-Health_04-May-2022_final.pdf]
29. Rother H-A, Wijesekere S, Ward F. The impact of the environment on South Africa's child and adolescent health: An overlooked health risk. In: Shung-King M, Lake L, Sanders D, M H, editors. *Child and adolescent health - Leave no one behind South African Child Gauge 2019*. Cape Town: Children's Institute, University of Cape Town; 2019. p. 161.
30. Hoffman JS, Shandas V, Pendleton N. The effects of historical housing policies on resident exposure to intra-urban heat: A study of 108 US urban areas. *Climate*. 2020;8(1):12.
31. Burke SE, Sanson AV, Van Hoorn J. The psychological effects of climate change on children. *Current Psychiatry Reports*. 2018;20(5):1-8.
32. Rees N. *The climate crisis is a child rights crisis: Introducing the Children's Climate Risk Index*. New York: United Nations Children's Fund (UNICEF); 2021.
33. Vergunst F, Berry HL. Climate Change and Children's Mental Health: A Developmental Perspective. *Clinical Psychological Science*. 2021:21677026211040787.
34. Rother H-A, Hayward RA, Paulson JA, Etzel RA, Shelton M, Theron LC. Impact of extreme weather events on Sub-Saharan African child and adolescent mental health: The implications of a systematic review of sparse research findings. *The Journal of Climate Change and Health*. 2021:100087.
35. Clemens V, von Hirschhausen E, Fegert JM. Report of the intergovernmental panel on climate change: Implications for the mental health policy of children and adolescents in Europe—a scoping review. *European Child & Adolescent Psychiatry*. 2020:1-13.
36. Rataj E, Kunzweiler K, Garthus-Niegel S. Extreme weather events in developing countries and related injuries and mental health disorders: A systematic review. *BMC Public Health*. 2016;16(1):1-12.
37. van Nieuwenhuizen A, Hudson K, Chen X, Hwong AR. The effects of climate change on child and adolescent mental health: Clinical considerations. *Current Psychiatry Reports*. 2021;23(12):1-9.
38. Clayton S, Manning C, Speiser M, Hill A. *Mental health and our changing climate: Impacts, inequities, responses*. Washington DC. 2021.
39. Chersich MF, Scorgie F, Wright C, Mullick S, Mathee A, Hess J, Rees H. Climate change and adolescents in South Africa: The role of youth activism and the health sector in safeguarding adolescents' health and education. *South African Medical Journal*. 2019;109(9):615-619.
40. Taukeni S, Chitiyo G, Chitiyo M, Asino I, Shipena G. Post-traumatic stress disorder amongst children aged 8-18 affected by the 2011 northern-Namibia floods. *Jambá: Journal of Disaster Risk Studies*. 2016;8(2):1-6.
41. Hurley EA, Dalgligh SL, Sacks E. Supporting young people with climate anxiety: Mitigation, adaptation, and resilience. *The Lancet Planetary Health*. 2022;6(3):e190.
42. Lee K, Gjersoe N, O'Neill S, Barnett J. Youth perceptions of climate change: A narrative synthesis. *Wiley Interdisciplinary Reviews: Climate Change*. 2020;11(3):e641.
43. Hickman C, Marks E, Pihkala P, Clayton S, Lewandowski RE, Mayall EE, van Susteren L. Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *The Lancet Planetary Health*. 2021;5(12):e863-e873.
44. Aruta JJBR, Simon PD. Addressing climate anxiety among young people in the Philippines. *The Lancet Planetary Health*. 2022;6(2):e81-e82.
45. Sanz-Barbero B, Linares C, Vives-Cases C, González JL, López-Ossorio JJ, Diaz J. Heat wave and the risk of intimate partner violence. *Science of the Total Environment*. 2018;644:413-419.
46. Masten AS, Motti-Stefanidi F. Multisystem resilience for children and youth in disaster: Reflections in the context of COVID-19. *Adversity and resilience science*. 2020;1(2):95-106.
47. Ungar M, Theron L. Resilience and mental health: How multisystemic processes contribute to positive outcomes. *The Lancet Psychiatry*. 2020;7(5):441-448.
48. Masten AS, Narayan AJ. Child development in the context of disaster, war, and terrorism: Pathways of risk and resilience. *Annual review of psychology*. 2012;63:227-257.
49. Masten AS. Resilience of children in disasters: A multisystem perspective. *International journal of psychology*. 2021;56(1):1-11.

50. Theron L. Learning about systemic resilience from studies of student resilience. *Multisystemic resilience*. 2021;232-252.
51. Matsopoulos A, Luthar SS. Parents, caregivers and educators: The forgotten stakeholders in the discussion of resilience—An international perspective. *International Journal of School & Educational Psychology*. 2020;8(2):75-77.
52. Chersich MF, Wright CY. Climate change adaptation in South Africa: A case study on the role of the health sector. *Globalization and Health*. 2019;15(1):1-16.
53. Bloom DE, Cafiero E, Jané-Llopis E, Abrahams-Gessel S, Bloom LR, Fathima S, Mowafi M. *The Global Economic Burden of Noncommunicable Diseases*. Program on the Global Demography of Aging. 2012.
54. Ryan G, Lemmi V, Hanna F, Loryman H, Eaton J. *Mental Health for Sustainable Development: A topic guide for development professionals*. 2020. [<https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/14908>]
55. Kessler RC, Amminger GP, Aguilar-Gaxiola S, Alonso J, Lee S, Ustun TB. Age of onset of mental disorders: A review of recent literature. *Current Opinion in Psychiatry*. 2007;20(4):359.
56. Erskine H, Moffitt TE, Copeland W, Costello E, Ferrari A, Patton G, Scott J. A heavy burden on young minds: The global burden of mental and substance use disorders in children and youth. *Psychological Medicine*. 2015;45(7):1551-1563.
57. World Health Organization. *Atlas: Child and adolescent mental health resources. Global concerns: implications for the future*: WHO; 2005.
58. Lu C, Li Z, Patel V. Global child and adolescent mental health: The orphan of development assistance for health. *PLoS Medicine*. 2018;15(3):e1002524.
59. Carvalho N MA, Rasmussen B, Stover J Dieleman J L, Weiberger M, Sanders R, Chou V, Winfrey W. *Developing Investment Cases For Transformative Results: Toolkit* New York, U.S.A: United Nations Population Fund (UNFPA). 2021 [https://www.unfpa.org/sites/default/files/pub-pdf/Developing_Investment_Cases_for_Transformative_Results_Toolkit.pdf]
60. Besada D, Docrat S, Lund C. *Mental Health Investment Case for South Africa. Final report of the Mental Health Investment Case Task Team*. Pretoria: Department of Health. 2021.
61. Cosgrove L, Mills C, Karter JM, Mehta A, Kalathil J. A critical review of the Lancet Commission on global mental health and sustainable development: Time for a paradigm change. *Critical Public Health*. 2020;30(5):624-631.
62. Sweeny K, Friedman HS, Sheehan P, Fridman M, Shi H. A health system-based investment case for adolescent health. *Journal of Adolescent Health*. 2019;65(1, Supplement):S8-S15.
63. Watkins D, Hale J, Hutchinson B, Kataria I, Kontis V, Nugent R. Investing in non-communicable disease risk factor control among adolescents worldwide: A modelling study. *BMJ Global Health*. 2019;4(2):e001335.