Chapter 19

The First 1000 Days and Clinical Practice in Infant Mental Health

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19.1 Introduction

The chapter begins with two premises. First, infancy is a crucial time in human development, both physically and cognitive-affectively. During the first three years of life, the infant develops from being helpless and absolutely dependent to being able to move independently and make its needs known through language. In this time, the foundations are laid for socio-emotional and cognitive development. These premises are confirmed in DOHaD research, where the earliest period of life has clearly been demonstrated to be significant in shaping individual health over the life cycle and intergenerationally, and thence shaping population health over time. The second premise arises from the recognition by the World Health Organization (WHO) that mental health is a right. It is included in the United Nations Sustainable Development Goals (SDGs), where Goal 3 makes explicit its significance for the accomplishment of other goals [1]. The latest State of the World's Children Report [2] specifically focuses on children's mental health.

A large body of research suggests that some aspects of mental health and illness may be heritable. There is also clear evidence that environmental factors in the perinatal period can have durable effects on cognitive and emotional development and function and that infancy and the perinatal period offer opportunities to identify and ameliorate such effects [3]. The DOHaD-inspired 'first 1000 days of life' campaigns, for example, indicate the potential to alter developmental trajectories and protect children against environmental risk factors through early intervention. There is also growing recognition that supportive social relations in the early period promote adaptive cognitive and emotional functioning over time and potentially through the generations. The WHO et al.'s [4] endorsement of 'nurturing care' is a recognition of how material and emotional care produce improved long-term individual and social outcomes. These include better social relationships and psychological stability and improved schooling outcomes. In the longer term, they are assumed to result in greater work productivity and economic stability. So compelling are the findings that the Lancet Commission on Mental Health identifies child and youth mental health as 'a moral imperative' (1 p1578). This gives impetus to work that seeks to support caring relations and ameliorate the conditions under which human development takes place.

19.2 Why Infants? Infant Mental Health and Well-Being

Infant mental health refers to the 'young child's capacity to experience, regulate, and express emotions, form close and secure relationships, and explore the environment and learn' [5, p. 6].

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Like DOHaD, infant mental health (IMH) is a convergent field of study, informed by multiple disciplines, including paediatrics, allied medical disciplines, developmental psychology, psychiatry, neuroscience, clinical practice, and public mental health advocacy. As such, it cuts across disciplines, giving it a broad and inclusive foundation for research and implementation. Its aim is to identify and enable positive developmental trajectories for children [5]. Its central tenet is that the human infant is born with a capacity to explore the environment, learn, experience, and express emotions. While learning is lifelong, the plasticity of the developing brain makes early childhood critical. From the start, in utero, the infant takes in and absorbs the stimuli from its environment and gradually forms internal images and representations in its mind of what it means and what it requires to be a member of a particular community. Far from being a blank slate or *tabula rasa*, the infant comes into this world with a 'story' and sensory experience [6].

Cognitive well-being and affective stability are critical to adaptive responses to the world and, in addition to their individual effects, are seen by developmental practitioners as central to the making of stable societies and productive workforces. For these capacities to unfold, the baby requires human relationships. Infant mental health thus takes as its central concern the relationship between infants and caregivers. The emphasis on *relations* is vital, marking an important shift away from the focus on individual psychological disturbance to a concern with the promotion of infant well-being and flourishing within the networks of relations that comprise their lives. To theorise this, IMH draws on developmental psychology, particularly attachment theory, in explaining well-being and promoting secure relationships that form the basis of social and intellectual functioning.

While it is not always thought of as DOHAD research, there is considerable evidence from multiple fields that demonstrates that the early social environment is an important shaper, sometimes determinant, of early child psychological development, which in turn influences long-term child health outcomes [7, 8]. A robust body of scholarship shows that stressors during early development (including prenatally) can affect cognitive and emotional development and generate mental health problems that endure into or may only fully materialise in adulthood [9]. Stressors produce neuro-biological effects that have lasting, potentially heritable effects on mental health [10]. Different kinds of stressors at different times in development may have different effects and different outcomes [11]. Specific biological and chemical pathways are disputed [12] and are still under investigation [13]. Some of these findings are also attributable to the broader socio-economic circumstances under which children are raised. In addition to these influences, there is growing attention to the possibilities of transgenerational transmission of mental health risks and illness. This may be a result of genetic inheritance, epigenetic processes [14], and/or because affected adults may be less able to provide secure environments for raising children, particularly where social-political-economic circumstances are inhospitable.

The interplay between genetic predispositions and the physical and psycho-social environment thus lays the foundations for mental and physical health [15]. Infant mental health understands that these are mediated by *relations in context*. The emphasis on relations is critical. Relationships are embedded in context, and we suggest that more attention needs to be paid to the latter. In the remainder of the chapter, we explore contextual factors significant for infant mental health before turning to our work on

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localising the model of IMH, a process we characterise as *attunement* to context. The latter seeks to enable a picture of well-being that has resonance and efficacy in the contexts in which we work in southern Africa and that has the potential to shift the gamut of social relations to enable better support of infants and their relational worlds.

19.3 Exposure and Resilience

While the epigenetic and neurobiological processes that shape outcomes are still under investigation, knowledge of the effects of psycho-social stressors in infancy on child and adult mental health has a history that predates DOHaD. Socio-economic factors are particularly significant. There is a substantially higher prevalence of common perinatal mental health disorders in low- and middle-income countries (LMICs) than in higher income countries, particularly in poorer peri-urban and rural areas [16, 17]. Mother–infant dyads in LMICs may be exposed to multiple cumulative environmental factors that may confer risk on infant outcomes. Parental capacity to provide the kind of care that promotes security in infancy and good developmental outcomes can be severely compromised in adverse conditions such as poverty, particularly when mothers are themselves at risk for mental health disorders [18]. Concern has been raised about the links between maternal stress and later mental health disorders in children, including, among others, attention deficit hyperactivity disorders (ADHD), depression, and poor development of linguistic, cognitive, and socio-emotional skills [9].

In South Africa, for example, poverty, inequality, insecurity, and gender-based violence produce and compound very high rates of perinatal depression and anxiety and mental illness [19, 20]. Risks appear to be cumulative: for example, shocks in early childhood are correlated with a greater risk of mental illness in adulthood [2, 21]. Research on Adverse Childhood Experiences suggests that there is a 'graded relationship' between early exposure to emotional, physical, and sexual abuse and later disease and risk behaviours [22]. More recent cohort studies in South Africa have suggested that there is a graded relationship between ACEs, adult ill health, and adult risk behaviours including antisocial behaviours.

Longitudinal studies are increasingly showing the effects of early life experiences, particularly toxic stress, on development [23, 24]. There is robust evidence pointing to the transmission of maternal (and some paternal) factors in mental ill health, especially regarding the links between maternal depression and stress and child development. However, the precise mechanisms remain complex. In a review, Wan and Green [25] highlighted that most children of mothers with mental health problems do not inevitably develop lasting attachment difficulties. While children in settings of vulnerability (social adversity and caregiver mental illness) may be at higher risk of developing relational difficulties, many go on to develop positive developmental outcomes and secure attachments, indicating that childhood resilience may be facilitated by the efforts of mothers and others to mitigate the immediate and potential impact of maternal mental illness [26].

Indeed, evidence from the cognate fields of psychiatry, psychology, and child development [5] clearly demonstrates that the kinds of insults described above can be partially offset by attentive care practices. These are presumed to provide the grounds for secure relating that in turn sets in motion processes of resilient adaptation shown to be critical in long-term health. A large body of evidence demonstrates that attachment relations

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between the infant and the caregiver are critical for physical survival, optimal development of the brain, and resilience through the lifecourse. Interventions in this early sensitive phase of life have been shown to promote well-being in a more effective way than interventions later in the life cycle.

This is a critical concern for international organisations such as UNICEF, Save the Children, and the WHO, among others, which have become increasingly focused on 'parenting' to ameliorate or offset social shocks and promote resilience and social competence. It is important that 'parenting' be understood as a component of the infant's environment and not as the solution for factors that lie well beyond parental control. This suggests that we need to pay critical attention to how to theorise the contexts and environments that shape exposures and resilience. Given the emphasis on 'environment' in DOHAD research, this should not come as a surprise.

19.4 Universalist Models and Local Contexts

As Zeanah and Zeanah note, 'One of the most distinctive features of the early years is the clear importance of multiple interrelated contexts (e.g. caregiver–infant relationship, family, cultural, social, and historical) within which infants develop' [5, p. 19]. How we theorise those relationships and their 'multiple, interrelated contexts' matters, as do the assumptions we make about their role in well-being. Much of what has been written on human development has been drawn from populations from Western, educated, industrialised, rich and democratic (WEIRD) societies [27]. This leaves out or ignores the majority of the world's infants and young children. It also means that much of what has been 'evidence-based' comes from a biased and limited sample. Work from South Africa, particularly from the Parent-Infant Mental Health Service in Cape Town [28] and the *Ububele Umdlezane* Parent-Infant Project in Johannesburg [29], and from ongoing practical work in parenting centres, child support services, and perinatal healthcare projects, suggests that care needs to be taken in how we understand the formative influences on babies of the specific social worlds around them. Contextual factors, including ongoing legacies of racism and social inequalities, combined with cultural variations in ideas about parenting, childrearing, and diverse family structures, make it difficult to apply a 'one-size-fits-all' approach to understanding IMH and the interventions needed to support and protect it. This is an important consideration for DOHaD scholarship, especially as questions about how to understand and investigate the 'environment' and its press on partly permeable bodies become more critical [30].

Take, for example, the assumptions about kinship embedded in theoretical models animating IMH. Attachment theory anticipates that a child learns the security from which to explore the world with confidence from its primary caregiver's arms. This caregiver is frequently posited to be the mother – as is often the case. But it is also the case that many people are involved in childcare, especially after an early period of seclusion. Some are recognised in the literature: female relatives such as aunts and grandmothers; people employed to offer care, such as nannies and workers in early childhood development centres [31, 32]. Much less recognised are the informal networks of adults and older children whose supportive care generates a wide social net for children – as Keller and Chaudhary [33] call it, 'cradles of care' – that can be endangered if it is not recognised as part of social and emotional well-being. While the responsibility of infant care rests mainly with adult caregivers, in many places, younger generations

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share in childcare roles. These in turn are dependent on the immediate and distal social environment in which they live. Economic hardship or ease, disadvantages, cultural norms and values, and political circumstances impact the parent and other caregivers and the relationship with the infant. As a common African proverb has it, 'It takes a village to raise a child'. Indeed, it was precisely this proverb that was used in South Africa to launch a Provincial First Thousand Days Campaign in 2016 that seeks to undo historical legacies of ill health, particularly stunting, through close attention to infant well-being.

The impact of historical factors on structures supporting infant well-being is particularly significant in the southern African context. For example, the migrant labour system that long characterised family life for many Black South Africans and those in neighbouring states has produced complex familial arrangements across the region. The HIV pandemic that, until relatively recently, produced mass illness and death in the absence of antiretro viral drugs, shifted caring practices to a wider range of kin and other networks, some of which became tightly stretched in impoverished contexts. Ongoing political instabilities and economic insecurities in the subregion generate considerable mobility in family life, including ongoing separations of mothers and babies. The resultant social forms are not the simple 'nuclear family' long presumed to be desirable and normative, but complex and shifting adaptations to changing circumstances. And indeed, there is growing evidence that the nuclear family itself, on which much developmental theory rests, makes caring effectively for children much more difficult than is the case in more complex households – the same households that have long been stigmatised for their deviation from the nuclear model [34]. There is therefore a need to factor into our models of well-being the diverse sources from which children receive nurturing care while still recognising and supporting the primary (dyadic) caregivers. Doing so presents a more accurate perspective on the environments that support children and complicates an overly simplistic equation of relations as solely dyadic and the 'woman as environment model' that has, until recently, beset DOHaD research [35, 36].

While DOHaD research has largely focused on the effects of maternal factors on epigenetics and neuropsychological development, there is growing interest in the paternal factors [37]. Similarly, in psychiatry, there is a small but growing body of research that explores paternal factors on infant well-being [38]. This suggests that a father(-figure)'s mental state affects infants directly (through inheritance and parenting practices) and indirectly (through the effects of mental illness on family stability and emotional tenor) and contributes to infants' internalising and externalising behaviours. Lasting consequences include the risk of child psychopathology [ibid.].

In psychology, although there was early recognition that infants attach to their fathers as well, most research has also focused on the mother–child dyad. More recent scholarship on paternity demonstrates that fathers affect the infant's well-being both indirectly and directly [39] and that positive infant–father relationships result in healthy emotional and social outcomes for the infant [40] and over the lifecourse [41, 42]. The father's relationship with the infant's mother indirectly affects the infant's well-being. Indeed, research conducted in Soweto, South Africa [43], concluded that father involvement may reduce postnatal maternal depression and improve maternal mental health, with important implications for infant well-being.

Well-being needs to be broadly understood. In many parts of southern Africa, it is the father's responsibility to ensure the incorporation of the child into meaningful social

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worlds and secure wider sets of relationships. Andile Mayekiso describes this as 'social attachment': the work of enabling cultural identifications and securing social well-being through the rituals that identification enjoins [44]. In contexts where historical processes have shattered family life, the absence of a paternal figure whose kin can be relied on to structure belonging may have severe mental health consequences. And yet, despite the significance of the paternal role in an infant's life, men are still marginalised in both practices of parent–infant psychotherapy and psychoanalytic and IMH theory [45].

19.5 Translation to the Clinical Setting: Increasing Awareness and Increasing Knowledge

The reality for many South African infants and young children, and indeed children in much of the world – including in some of the world's richest countries – remains one of significant deprivation. Beyond the drivers of socio-economic disadvantage, access to quality healthcare and mental health services – in particular, for caregivers – remains neglected and under-resourced. Limited mental health resources (including both physical structures and human resources) impact clinicians' abilities to screen and offer support, referrals, and appropriate early interventions.

In South African public health, there has been tragically poor investment in mental health services and support at both community and district levels [46, 47]. While our IMH training programme (described below) responds to the need for awareness and upskilling of local care providers at a grassroots level, the ability to integrate screening and support of infants at risk remains out of reach. Health and family support network providers are faced with a difficult choice: to identify problematic or at-risk dyads early but be limited in what they can be offered or to continue to focus on purely physical and social risks that can be addressed within a resource-constrained system. With task shifting/sharing[1] being one of the key focus areas of the SDGs, we believe the answer may lie in innovative approaches that attempt to upskill existing allied and support workers to identify mental health risks in their standard practices of care and to adapt treatment models to this and similar settings. This has the potential to bring mental health into the mainstream of everyday clinical practice. So, if infants are routinely weighed, immunised, and assessed for physical health conditions at local clinics, an IMH-friendly approach would then include additional questioning around the relationship and interactions of the infant and caregiver. Caregiver mental health screening is then included as part of the infant health screening, true to IMH's relational underpinnings. Where health practitioners are attuned to cultural values, practices, and historical circumstances, this can also contribute to aligning scientific knowledge about infant well-being to specific contexts, helping to create the localised 'nurturing care' imagined in global health discourse.

To bring awareness of IMH into everyday clinical practice, we needed a simple screening tool that would blend in with existing local conditions and practices. Drawing from European work on caregiver and infant screening at the primary healthcare level, Puura, Berg, and Malek developed the Basic IMH Screen (BIMHS) [48], a five-

[1] Task shifting or task sharing refers to the re-allocation of healthcare tasks to non-traditional healthcare workers (HCWs) such as community HCWs and allied professionals. This is particularly important in low-resource settings.

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item tool that can be readily identified by a primary HCW. Items are 'basic' in the sense of being universally present or valid for infants and their caregivers. They are embedded in and form an implicit *sine qua non* in the World Association of Infant Mental Health Position Paper on the Rights of Infants [49].

The items consist of two simple questions for the mother/primary caregiver: *Are you worried about your infant/child*? *How have you been feeling?* The third item is the weight of the infant that is routinely plotted on a growth chart. The fourth and fifth items are simple observations of the infant's eye contact with the caregiver or health worker, and moments of shared pleasure between the infant and caregiver. The last item is the intuitive sense of the HCW about the dyad: is the relationship between the two of concern or not?

If there is concern about any of these items, the caregiver may be given an earlier appointment to determine whether the concern persists or not. Only after several such checks, should the infant be followed up at a more specialised clinic or service. The BIMHS is thus meant to 'flag' vulnerable dyads and to provide them with additional support, which, if given early enough, may prevent a less-than-optimal trajectory.

The BIMHS has been incorporated by the Western Cape Provincial Department of Health into existing maternal and infant screening tools as part of a DOHaD-inspired focus on the first thousand days of life.

In environments characterised by inequality, support in this respect can be significant, although it does not outweigh the importance of structural reform for population-level effects. This is particularly true where mental health challenges in the perinatal period continue to be overshadowed by complex systemic issues in health systems. These include a lack of resourcing, limited collaborative care between obstetric antenatal and psychiatric services, stigma, cultural misconceptions, and a lack of accessible and sustainable service delivery models. They can be partly addressed by general and mental healthcare professionals encouraging an awareness of the impact of perinatal mental health on early IMH, as well as early dyadic screening and intervention, and careful attention to cultural and social factors shaping infant potential and well-being.

19.6 Developing Comprehensive Approaches to IMH

In stark contrast to international standards of care espoused by high-income countries (HICs) and international organisations such as the WHO and UNICEF, the African continent offered no professional postgraduate degrees focusing on IMH until the development of a structured master's degree programme at Stellenbosch University to attempt to address this need [50]. This programme applies social medicine principles to train interdisciplinary practitioners to enter a diverse workspace, with the intention of integrating IMH-specific approaches into existing clinical offerings. Its diverse curriculum addresses human development, social and mental health influences on parenting practices, and accommodates both professional diversity and cultural diversity. It aims to develop interdisciplinary practitioners skilled in clinical observation and screening while also contributing to the critical local research agenda in the IMH field.

The ways that care, attachment, and relationships form and are understood in everyday practices are not universal. This raises the challenge of developing teaching models and course content to reflect local practice while remaining true to the core principles of the field of IMH. The ambitious degree programme has navigated

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pedagogic and logistical challenges in training and assessment methods, content applicability, and competency evaluation. Legacies of economic, social, and political disadvantage in South Africa continue to impact higher education and training, especially in multiculturally diverse classrooms such as ours. Teaching faculty has to navigate sensitively, with awareness of an underlying English language and Eurocentric bias on pedagogy and outcome assessments. A critical stance is required when evaluating students within the field of their own training background (such as allied health and humanities) while integrating a new field of IMH (relying on psychological and biological health origins). The programme integrates alternative blended teaching methods with traditional coursework to accommodate students' academic and professionally diverse backgrounds. The result has been a rich and evolving offering of a complex and diverse learning environment that speaks to the true cultural and ethnic diversity of South African students and the health-seeking population of its children.

Graduates of the MPhil programme integrate their learnings in context-specific health and psychological settings, including infant feeding clinics, well-baby immunisation visits, and mothers attending routine antenatal or assisted fertility services. This demonstrates the relative ease with which IMH can be included in standard packages of care, without requiring greater specialisation. This speaks to the true nature of IMH and its influence across sectors. Such findings can be applied to DOHaD interventions also.

There has been resistance. One of the main challenges in approaching an established subject field in Africa is the ability to share and contribute to the existing international literature. 'Publish or perish' has never been more relevant than in the current climate. Yet there is resistance from peer-reviewed publication avenues to specific contextual offerings that are not considered favourably by or as being of interest to 'global' (i.e. American-Eurocentric) audiences [51]. The field of IMH disproportionately favours a Eurocentric approach [52]. This is a contentious issue for researchers in LMIC settings who struggle to balance the desire to produce locally relevant and culturally sensitive research with the need to accommodate Euro-American expectations and HIC contexts. Infant mental health work in Africa challenges that norm, desiring to develop a field and produce academic offerings originating in Africa and for Africa; offerings that are sensitive to the manifold ways people produce well-being in different contexts. In localising the model of health, then, we seek to enable a picture of well-being that has resonance and efficacy in the contexts in which we work and may shift the gamut of social relations to enable better support of infants and their relational worlds. The model we have described here may be useful to DOHaD practitioners seeking to do the same.

19.7 Conclusion

Broad environmental factors – poverty, malnourishment, racism, interpersonal and structural violence, and inequality – are critical factors shaping mental well-being. Such environmental insults have lasting, possibly heritable effects. Research on brain development and plasticity suggests that early experience of positive dyadic and broader relational ties is critical in supporting infant well-being, promoting resilience, and potentially reducing rates of mental illness later in life. Relationships are not only outer social connections but are also evident as inner neural brain circuitry in every individual. The context and relationships that each infant is born into give meaning and voice to this complex matrix of inner and outer and bind the subjective with the objective. There is

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here an important project in bridging the divide between the sciences of the brain and heredity and those of the psyche and relationship. Drawing from the literature and southern African experience, we suggest that approaches to human well-being that centre relationality both enable optimal outcomes and may map onto ontologies in much of the non-Western world. This in turn enables knowledge to be localised to specific conditions, something that is critical in DOHaD research. In southern Africa, understanding and supporting infant well-being requires attunement to the damaging effects of colonialism and postcolonial economic formations on family life and an effective training infrastructure. Southern scholarships, concerned with the interplay of power, history, and everyday life, can help to illuminate some of the more problematic assumptions about social environments and generate interventions that are reflective and responsive to local conditions. The result will be the culturally and socially adaptive approaches called for in the WHO's Nurturing Care Framework, with particular emphasis on promoting secure relationships that are essential for future social and cognitive functioning.

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