

Culture Clash in Early Intervention Services

Margaret Ritchey

UCSF Benioff Children's Hospital Oakland
Oakland, California

Abstract

This article discusses how increasing diversity within a community requires health care professionals to reassess the developmental assessment tools being used, or at the least, what implications one can derive from resultant identification of delays. The author describes a culture clash between her training and developmental expectations as a physical therapist practicing in the San Francisco Bay Area and the upbringing and cultural expectations of a recently immigrated young Guatemalan Maya Mam mother and her medically fragile infant. The author explores the concepts of cultural humility and mentalization as strategies to aid in development of a therapeutic relationship when working with families from diverse cultural backgrounds.

Most of the world's developmental assessments, such as the Bayley Scales of Infant and Toddler Development (Bayley, 1969), are based on a century of research with resourced, if not wealthy, White children (Adolph et al., 2009; Bayley, 1969; Gupta, 2019). In the latter half of the 20th century several studies identified different rates of developmental milestone achievement around the world (Brazelton, 1972; Brazelton et al., 1969; Hopkins & Westra, 1988; Super, 1976), but these findings were not reflected in the assessment tools used worldwide. In the early 2000s the World Health Organization (WHO) attempted to formally broaden research on infant development with data from five countries: Ghana, India, Norway, Oman, and the US, with an eye to establishing more universal developmental milestone expectations (Martorell et al., 2006). However, they based their observations on the Bayley tool which primarily held the development of White U.S. infants as the standard.

Researchers have come to refer to this standard as WEIRD—Western, Educated, Industrialized, Rich, and Democratic. This acronym was coined in a 2010 article by three Canada-based psychologists who questioned the assumption that there are universal norms of development and laid bare the fact that

these “norms” were based on a finite and unique population of White subjects (Heinrich et al., 2010). They emphatically declared that these “norms” were not representative of all cultures. So one has to ask: Whose developmental expectations are being assessed?

A Closer Look at Motor Development

As a pediatric physical therapist, my primary focus is on motor development. As perhaps the most visible developmental domain, it is well-studied and provides a case in point for examining developmental differences in a cultural context. The developmental labs of Karen Adolph at New York University and Lana Karasik at City University of New York have investigated varying milestone onset timelines, trajectories, and variations of motor patterns among infants and the resultant impact on the emergence of skills in other developmental domains through “cascades” both in the US and abroad. Adolph and colleagues present an alternate way to consider development, not through milestones per se, but emphasizing the “4 E’s” (embodiment, embeddedness, enculturation, and enablement) to look at external sources of influence on developmental trends.

The 4 E's Perspective

The 4 E's perspective recognizes how the rate and trajectory of individual skill acquisition can be impacted by specific aspects of *embodiment* (constraints related to the body including but not limited to impact of clothing and physical deformities),

Competencies for Prenatal to 5 (P-5) Professionals™

P-5 1 **P-5 2** **P-5 3**

For more information see page 4, or visit www.zerotothree.org/p-5

embeddedness (environmental affordances or restrictions), *enculturation* (child rearing and social influences), and *enablement* (new motor skills open up new opportunities in other domains); all of these can be culturally informed practices and experiences (Adolph, 2019; Adolph & Hoch, 2019). Caregiving practices can facilitate or impede the rate of development. Two assumed salient aspects include (1) the recognition that opportunities and restrictions delivered through caregiving are neither good nor bad, and (2) *equifinality*, or the principle that a similar end result can be achieved through different paths at different speeds under different conditions to eventually net a fully functioning individual relevant to the society in which he or she was raised (L. Karasik, personal communication, April 20, 2021).

The research of Adolph, Karasik, and others has demonstrated that development “doesn’t rely on a schedule, or occur with a strict linear path, or happen in isolation” universally (Adolph, 2019). It is culturally bound through caregiving practices influenced by spiritual beliefs, geography, environmental hazards, and access to resources; even weather and public health policies contribute to caregiving and the pace of development. The following are some examples representing the 4E’s; most of these examples reflect enculturation; some reflect other 4E’s categories and are so noted:

- Anthropologist Alma Gottlieb described that, despite early sitting skills, Ivory Coast Beng infants are discouraged from walking before 1 year due to a belief that grandparents would suffer an early death. In addition, Beng infants are believed to be reincarnations of ancestors and as such it is thought that they are inclined to return to the afterlife; therefore they are carried on a mother’s body throughout infancy so they can’t “leave” (Gupta, 2019).
- The Ache in Paraguay are nomadic foragers and spend much of their time moving through dangerous forests where mothers rarely put their children down, resulting in significant motor impact such that the onset of walking is delayed until 24 months (Kaplan & Dove, 1987).
- In mountainous Tajikistan, the men are gone for long stretches of time for work. The women who are left behind collectively care for many children from one-room clay huts that surround an outdoor communal space. A traditional covered cradle called a *gahvora* is used, in which an infant is tightly swaddled and restrained on his back, restricting movement for hours at a time for up to 2 years. Infants are kept safe from insects and the elements and clean via an external catheter system (Gupta, 2019; Karasik, 2018). The *gahvora* is implicated in statistics showing just over half of these infants crawl and only 9% are walking at 1 year with “20% of 12–24-month-old remaining in the *gahvora* for more than 15 hours a day” (Karasik, 2018, p. 1).
- Another example addressing resource scarcity and interruption of developmental milestones comes from rural northern China where “sandbag rearing” has been a tradition and likely continues to occur among the poorer and less educated areas into this century (Xie & Young 1999). This practice places infants immobilized on their backs “up to their armpits” in sandbags for more than 16 hours a day for the first 12–24 months of life. The sandbags serve as “diaper” and “babysitter,” absorbing urine and feces while parents work in the field. This practice has resulted in significant long-term delays in physical, cognitive, and emotional development (Adolph et al., 2009; Mei, 1994; Xie & Young 1999).
- Berry Brazelton and colleagues found development lagging about a month behind American counterparts among Maya descendant infants in the highlands of southern Mexico. While working in the field, mothers carried their babies in rebozos on their body for warmth and access to lactation but with minimal visual or interactive stimulation. (Brazelton, 1972; Brazelton et al., 1969).
- A change in U.S. public health policy delivered unintended consequences with the 1990s Back to Sleep campaign to combat sudden infant death syndrome resulting in delayed prone progression among supine sleeping infants (Dudek-Shriber & Zelazy, 2007).
- Conversely, African and Caribbean practices of vigorous massage and, by Western standards, rough handling with tossing and dangling infants by an extremity from birth on contributed to early sitting and walking (Hopkins & Westra, 1988, 1990). In Kenya, the maternal practice of “air walking” used among Kowket babies led to infants meeting standing and walking milestones a month earlier than Western infants, yet they were slower to master rolling and crawling—partially because they were restricted from being on the ground for fear of injury from open fire pits and snakes (Super, 1976).
- On an experimental level, Lobo and Galloway (2012) demonstrated earlier sitting, prone progression, and



Photo: Oksana Kuzmina/shutterstock

Most observations that were used to set developmental milestone expectations were based on populations that were WEIRD—Western, Educated, Industrialized, Rich, and Democratic.

Photo: davide bonaldo/shutterstock



Caregiving practices can facilitate or impede the rate of development.

walking skills after 3 weeks of a few minutes of daily postural training in the second month of life with U.S. babies. This experiment and results were reproduced with Egyptian babies (Ayad et al., 2015). A similar outcome was netted in Zelazo's (1983) experiment with his infant twins in which daily upright practice resulted in walking before 9 months, and previously with his son who walked at 7.5 months (Zelazo et al., 1972).

- In a 2012 study, Cole, Lingeman, and Adolph demonstrated infant gait was susceptible to an aspect of parental caregiving—the type of diaper the child wore. Cumbersome cloth diapers delayed skilled walking mechanics the most, disposable diapers had slightly less impact, and—among many of the same diaper wearing infants—wearing no diapers caused less biomechanical interference, permitting more mature gait parameters. For a historical context, infants today walk sooner than those of previous generations when all infants wore cloth diapers (Shirley, 1931). (embodiment)
- Several researchers around the world have identified seasonal influences on motor skill acquisition with infants born in the summer developing slower during winter months when gross motor skills are expected to emerge, ostensibly because of cooler temperatures and the need for heavier, more restrictive clothing with less floor or outdoor time (Bai et al., 2018; Benson, 1993). (embodiment and embeddedness)
- The changes in postural orientation from supine or prone to independent sitting or to standing positions open up multiple opportunities to visually appreciate the world from a new vantage point that beckons an infant to explore in new ways previously not independently known or possible. Consider how early placement in a walker or saucer provides the same visual exposure but without the postural capacity for agency. Hands are increasingly free to manipulate and become more dexterous. Improved postural control that permits independent upright postures and mobility also permits climbing and

access to previously inaccessible experiences. As I discuss later, these changes usher in new skills in other domains through developmental cascades. (enablement)

Developmental cascades do occur universally when new skills in one domain induce advances across other domains (Campos et al., 2000; Harbourne et al., 2021; Kretch et al., 2014). For instance, there is a direct relationship between the onset of bipedal mobility and the emergence of language across cultures as infants explore wider territory and access a greater number of objects to which parents assign a “name” (He et al., 2015; Walle & Campos, 2014). Mobility increases exposure to and expression of a greater range of emotions as parents praise or admonish their toddlers who have increased access to and action on environments that pose more opportunity or threat (Biringen et al., 1995; Green et al., 1980; Karasik et al., 2014). Researchers have also demonstrated acquisition of psychological or cognitive concepts such as spatial awareness and coding linked to self-initiated mobility (Anderson et al., 2013; Campos et al., 2000; Clearfield, 2004; Karasik et al., 2011).

Changing U.S. Demographics Calling for New Education

Historically, the increasingly diverse cultural population across the US prompted national mandates for “multicultural education” to develop “cultural competence” in health care institutions. In the 1990s, this effort propelled pediatrician Melanie Tervalon and others at Children's Hospital Oakland (now University of California San Francisco Benioff Children's Hospital Oakland [UCSF BCHO]) to re-examine the clinical training offered in the hospital's residency program that prepared physicians to enter community practice for this changing population. In a groundbreaking 1998 article, Drs. Tervalon and Jann Murray-Garcia argued that multicultural education implied that one had mastered a discrete body of information which one would go forth and apply, and suggested cultural competence bore a degree of certitude in application of that finite body of information without need for continued curiosity, appraisal, and recalibration of one's working knowledge as one encountered novel situations. Instead, Tervalon and Murray-Garcia suggested *cultivating cultural humility* which they defined as: “a lifelong commitment to self-evaluation and critique, to redressing the power imbalances in the physician [provider]-patient dynamic, and to developing mutually beneficial and non-paternalistic clinical and advocacy partnerships with communities on behalf of individuals and defined populations” (Tervalon & Murray-Garcia, 1998, p. 123).

Similarly, another call for change in health care practices during the 1990s was Dr. David Sackett's focus on the importance of conducting and disseminating unbiased foundational medical research to support broader use of evidence-based practices (EBP) and discouragement of continued practices in a “business as usual”, “we've always done it this way” manner. In other words, it was a denouncement of the “Simmelweis reflex” or the tendency to neglect/reject new evidence or knowledge

because it contradicts established norms, beliefs, or paradigms. EBP has been represented schematically as a three-legged stool acknowledging the equal importance of (1) the most accurate level of research available, (2) the provider's clinical expertise, judgment, and experiences, and (3) the patient's rights, religious beliefs, cultural practices, and expectations in guiding one's medical practice. Sackett highlighted that this last element is often the biggest challenge for medical providers (Sackett et al., 1996).

A final concern is that the educational systems producing the professional health care workforce, which must address development and serve the changing demographics across communities, continues teaching universal developmental norms bolstered by an established assessment tool industry—tools based on data from 5% of the world's children (Gottlieb, 2018). Consider the examination of physiological ailments in which body organs are expected to behave the same, making diagnoses of lung ailments, diabetes, or stroke more or less universal, even as different cultures might assign various sources—diet, environmental toxins, health care access disparities, structural racism, or spiritual beliefs—as the root cause, and so might maintain different ideas about appropriate treatment. When it comes to identification of developmental delays, what happens when an immigrant family's culturally ingrained practices influence different rates of development or motor patterns and their expectations of their child's behavior deviate from the professional's assessment training and intervention goals? Are the observed "delays" a result of cultural caregiving, therefore from the family's perspective "not a delay?" Or from the provider's perspective are the family's practices viewed as "neglect" and trigger a mandated response? Or does the child indeed have an organically mediated problem requiring intervention? Multicultural education isn't sufficient, and cultural competency falls short as well. The need to serve with cultural humility becomes critical.

Changing Demographics on a Local Level

Alameda County is home to one of the most ethnically diverse populations in the San Francisco Bay Area and the nation. The demographics continue to change, with the Asian population currently increasing more rapidly than other groups (Public Policy Institute of California, 2021). Over the past 2 decades the number of Black residents decreased by 11% while Asian and Latino populations increased by 31% and 23% respectively (U.S. Census Bureau, 2021). The 2021 estimate of Alameda County population is 1,682,115 with a net increase this past decade of 11.38% (Healthy Alameda County, 2021). The 2021 racial breakdown reveals 38.8% White, 10% Black or African American, 32.4% Asian, 10.9% Some Other Race, 0.6% Native American and Alaskan Native, 0.8% Pacific Islander, and 6.5% from two or more races (Healthy Alameda County, 2021). Alameda County's ethnic breakdown is listed as 22.8% Hispanic/Latino and 77.2 % non-Hispanic/Latino. (This imperfect system that has arisen largely through the U.S. Office of Management and Budget and the U.S. Census Bureau to count the various races/ethnicities contributing to population



Photo: Michal Knitli/shutterstock

A traditional covered cradle from Tajikistan called a *gahvora*.

diversity is highlighted in these statistics regarding Hispanics/Latinos. These individuals are also referred to in other tallies as Latinx. The commonality is a shared language but that negates the diversity represented by this population of individuals from dissimilar places and cultures such as the Caribbean nations to Central America to South America. This lack of specificity is repeated in the collapsing of all Asians, occasionally teasing out Pacific Islanders, who immigrate from equally widely different cultures and do not share a common language.) A March 2021 report from the Public Policy Institute of California identified 33% of Alameda County as foreign born. In addition, they reported that half of all Californian children have at least one immigrant parent. This changing population diversity of Alameda County has affected me in my role as a health care provider/consultant with the UCSFBCCHO Neonatal Follow-up Program (NFU).

As the influx of immigrants into the community continues to change and grow, generally speaking, their socioeconomic challenges and health care disparities remain unchanged and potentially contribute to the need for neonatal intensive care unit (NICU) hospitalization for many of these immigrant families' new babies. The medical and social complexities that face these families at NICU discharge are profound and many are referred to the NFU Special Start program for medical case management and to NFU High Risk Infant Follow-Up Clinic for periodic comprehensive developmental assessments and referrals as warranted. Special Start case management often includes aid in coordination and compliance with pediatricians and other medical specialists, assistance with transportation and access to special equipment and formulas, developmental monitoring and consultation, and psychosocial support and referrals.

Moving Toward Implementation of Cultural Humility

As infants are referred to the NFU program there is an effort to provide services that might align with families' linguistic and/or



Photo: Bruno Adrian/shutterstock

The Maya people who speak Mam are also referred to as the Mam people.

cultural identities. The racial and ethnic breakdown of the NFU caseload in 2020 was: 51% Latinx, 23% African American/Black, 8% Asian, 3% Pacific Islander, 2% Caucasian, 9% Other, 4% Refused to state. NFU program direct service staff of 15 reflect, to some extent, the languages and the cultural backgrounds of many of the referred babies and families. There are five Spanish/English bilingual staff comprised of a mix of social workers, a nurse, and an infant development specialist, several of whom are bicultural. There are two nurses and one social worker who identify as Black and two Asian-Americans—one, the trilingual Chinese medical director of the NFU High Risk Infant Follow-Up Clinic who was raised in the Philippines and the other a Chinese-American bilingual nurse. The remainder of direct providers identify as White—a neonatologist, a nurse practitioner, a psychologist, a nutritionist, and a physical therapist. For NFU families that represent other ethnic and linguistic areas such as India, Pakistan, Middle Eastern region, and Northern and Western Africa, providers access interpreters to conduct the program's often weekly visits which were traditionally located in the home but have moved to a mostly telehealth model in the wake of COVID. Occasional face-to-face visits occur with deliveries of diapers and food and at in-person pediatric care and specialty follow-up appointments.

Practicing cultural humility and accessing all three elements of EBP might lead to “an isolated increase in knowledge [but] without a consequent change in attitude or behavior [that knowledge] is of questionable value” (Tervalon & Murray-Garcia, 1998, p. 119). While I still struggle with how to balance my developmental assessment perspective with immigrant families’ different experiences and expectations, my capacity to change my attitude, to become more curious, has expanded. It was nurtured by a profound professional “ah ha” moment as I comprehended Peter Fonagy’s concept of mentalization “To see *ourselves* from the *outside* and *others* from the *inside*” which goes beyond “walking in the other’s shoes” and gets to the heart of cultural humility’s self-reflection and empathic consideration of the other (Fonagy, 2016).

A Case in Point

My experience with a Maya Mam family illustrates my challenge with culture clash despite a rich sociocultural education that should have prepared me to handle the test I confronted. *Maya* as a noun and adjective describes the people and their culture. *Mayan* broadly refers to their languages, of which Mam is a specific language. The Maya are indigenous peoples, descendants of the ancient Maya culture, and are currently dispersed throughout southeastern Mexico and Central America, specifically Belize, El Salvador, Honduras, and in the western highlands of Guatemala where the majority of Maya descendants live. The Maya people who speak Mam are also referred to as the Mam people. The Maya Mam population (as they are referred to in the Bay Area) in the US generally, and Alameda County specifically, has gradually increased since the initial influx in the 1980s when people were fleeing their war-ravaged countries as oppressed indigenous peoples to the current migrations in which they are viewed as violence and climate refugees (Steffens, 2018). This increase is evidenced by an upward tick in frequency of Mam interpreter requests at UCSFBCCHO from 1,180 in fiscal year 2017–2018, rising to 1,377 for fiscal year 2019–2020. These numbers are considered undercounted as some Mam speakers are registered and scheduled for Spanish interpreters while other Mam families request Spanish interpreters for fear they will be turned away otherwise (personal communication, UCSFBCCHO Interpreter Services, April 2, 2021). Anecdotally, there has been a similar increase in Mam families referred out of the NICU to the NFU program. I am going to share my experiences, reflections, and growth after my WEIRD developmental expectations clashed dramatically with an immigrant family’s appreciation and expectation of developmental growth in the case of a teen Maya Mam mother and her very medically complex baby.

The infant was born without an anal opening and required a surgically created double ostomy—that is two sections of intestine protruded through his abdomen and were protected by a bag taped to his stomach. This bag collected his stool for the first 1.5 years of his life until his intestinal tract could be surgically corrected and the normal elimination route restored. In retrospect, the ongoing daily care this young mother performed to manage her baby’s condition was extraordinary.

Initially, I was brought in by the Spanish-speaking case manager when the baby was nearly 4 months old because he had developed a significant plagiocephaly, or flattening of his head on one side which either caused or was caused by observed asymmetrical postures and movement patterns. Furthermore, as time passed, he was intolerant of tummy time so he was not exploring prone progression and did not roll. His mother was reluctant to promote tummy time as she was encouraged to because of the inevitable disruption of the ostomy bag seal. (Their supply of ostomy bags ran out well before her next allotment arrived.) He did not reach for toys, was vocally quiet, and appeared emotionally subdued. His young mother presented as meek and minimally expressive, speaking barely above a whisper. At this point I should have

explored the source of her passivity. Was it her baseline personality? Or was she guarding against perceived or previously experienced age, status, or power dynamics? Or did her behavior hint at life experiences that influenced her self-appraisal? Did this passivity reflect a behavior that might have been adaptive in the context of origin but no longer served that purpose in the new setting? She appeared to manage her son's daily complex medical care but propped his bottles, and she was not observed to be affectionately interactive with him. The physical therapist in me was concerned about mild weakness and asymmetrical forces affecting how he moved and already apparent delays. The mental health developmentalist in me considered the possibility that his stay in the NICU and subsequent medical care interfered with bonding between this young mother and her baby, and/or there might be an emerging or exacerbated depression. In the early months of home visiting, it was unknown what traumas the mother might have experienced previously—in Guatemala as a child, during travel to the US, or even events after she arrived—that influenced her presentation and functioning. At the least, it wasn't hard to imagine that the ordeal of a month-long NICU stay and the continued medical complexity of her baby's condition, with the level of medical care she needed to provide him, created an ongoing traumatic experience.

This mother had immigrated to the US as a young teen to join her father who had gained political asylum from the violence occurring in their rural Guatemalan community. The maternal grandmother joined a few years later in anticipation of her grandson's birth but was no longer with the maternal grandfather. Despite family of origin living nearby, there were recurring housing instabilities with frequent address changes, recurring phone service disruption, and significant later-revealed traumas, including a history of intimate partner violence, calling to mind the iceberg metaphor: what we observed initially was only a fraction of the whole story. This adolescent mother also intermittently held a nighttime job and relied on extended family to care for her son. In addition, there were numerous and frequent specialty appointments with an array of siloed providers who were focused on the baby's many medical complications. The number of medical professionals involved in her son's care and the potential to experience power differentials may well have been overwhelming, adding additional layers of stress.

From the beginning there were challenges with ensuring that the mother understood the providers' concerns. These challenges emanated from numerous sources including her limited education level and health literacy, especially in the face of complex medical issues, and language barriers. Despite the mother's recent adoption of Spanish, it is likely that technical medical terms were not part of her vocabulary, and attempts at securing interpreters who spoke the correct Mam dialect were not always successful. Depending on the source, there are 21 or 22 officially recognized Mayan languages, plus Garifuna, spoken in Guatemala. Of these, four are considered main languages, Mam being one of them, but there are more than 50 dialects (Czerwinski et al., 2011; Elías, 2013; Wehr



Photo: iStock/shutterstock

In Guatemala, long-held beliefs that illness can have both a physical and a spiritual cause support the prevalent use of rituals, prayer, and herbal medicines.

et al., 2014). Even with the correct interpreter, the local Maya Mam community is insular and there are fears that privacy might be breached.

In Guatemala, long-held beliefs that illness can have both a physical and a spiritual cause support the prevalent use of rituals, prayer, and herbal medicines. Regardless, indigenous communities have minimal access to costly hospitals, and health care might be provided by *hueseras* (bone setters) or *curanderas* (herbalists and shamans/spiritual leaders), while childbirth is supported by *comadronas* (midwives; Czerwinski et al., 2011). Western medicine is often misunderstood if not mistrusted, as revealed in this case when mom procured traditional medicines from the local Mam community which she gave to her baby, even while he was under physician care and prescribed Western medicines, because she didn't think they were healing his medical problems. Despite the belief that folk medicines are "natural", there is always a concern with polypharmacy of drug interactions and negative side effects. In addition, her poor comprehension of "unseen" ailments affecting her baby's internal anatomy—which the Mam language lacks words to discuss—further complicated this mother's administration of prescribed care. For example, she made limited use of formula thickeners intended to prevent liquid aspiration into his lungs (demonstrated by video swallow studies). Using the thickeners might have prevented six intensive care hospitalizations due to respiratory illness in the first year. She also only infrequently offered inhaled bronchodilators to treat his reactive airway disease which might well have been exacerbated by the unrecognized, incomprehensible, recurring aspirations. NFU program case manager and consultants suspected these interventions were not often used, as was eventually confirmed when the mother donated untouched medications back to health care providers.

In the absence of obvious muscle tone or strength issues, when this child didn't roll until 11 months, wasn't sitting reliably



Photo: Marcos Casiano/shutterstock

The mother stated her son was like children in her Guatemalan village where they walked and talked “later,” even as late as 3 or 4 years.

until 14 months or crawling until 17 months, and wasn’t speaking or walking at 2 years, other developmental providers and I imagined one source to be “environmental”—lack of opportunity, rather than the family’s later-professed lack of expectation, which has been identified as a powerful driver of developmental outcomes (Brazelton 1972; Cintas 1995; Hopkins & Westra, 1989, 1990). There were no neurological signs warranting imaging. At each prolonged delay of milestone achievement, the mother did not see any problems beyond the medical issues which were resolved after successful surgery at 1.5 years old. When this child was not walking or talking at 2 years, the mother stated he was like children in her Guatemalan village where they walked and talked “later,” even as late as 3 or 4 years. This disagreement between the developmental expectations of the providers and the cultural expectations of the family created an unnegotiable chasm. Physical therapy written home programs with stick figures as illustrations were provided but disregarded. This mother eventually indicated she was unable to manage the numerous paper instructions collected from various providers. (Did we all presume she could read them?) Regardless of periodic interventions, and developmental referrals, this mother did not see a need to implement the suggested activities or participate regularly with the many time-consuming appointments.

Aftermath

To truly understand this mother’s worldview, I would have needed to exercise more sincere curiosity early in the relationship to establish trust before our meetings were experienced as a culture clash. However, as I employed Fonagy’s (2016) mentalization, I began to imagine how elated she was that her child had survived his earlier complex medical history and that his current gastrointestinal function appeared normal. She must have been relieved that daily life was no longer consumed with medical procedures and providers, and was ready to move ahead unencumbered. I can now see the child she sees and I can see her.

While a solution evaded me prior to the end of my service with this family, the lack of resolution weighed on me and has me still searching for answers. My efforts included literature searches, personal communication with other authors writing about similar topics, contacting editors of the *National Geographic* and the *Infant Mental Health Journal*, and interviews with local agencies and Mam interpreters looking for current descriptions of maternal caregiving practices that might influence infants’ experiences. I was searching for references about Guatemalan developmental milestone achievements to either corroborate this mother’s expectations or to provide a competing reality rooted in her culture, not mine. I stumbled onto a telling statement from a 2016 World Association of Infant Mental Health report in which the writers lamented that in rural Guatemala the stunting (short stature resultant from malnutrition) and associated developmental delays are so significant and pervasive that “there are often no children... in a given community who are developing normally” (Martinez et al., 2016). It seems that the conjoined conditions of endemic malnutrition, susceptibility to disease, and presence of developmental delay are the “norm” (Chary et al., 2013), eerily echoing my patient’s mother’s statement. The effects of generations of malnutrition such as stunting, frequent bouts of diarrhea and vomiting, as well as developmental delays go unrecognized in communities where these are so common as to seem normal (Chary et al., 2013; Dewey & Begum, 2011). And yet in a communication with psychologist Barbara Rogoff (April 5, 2021) who has studied Guatemalan society and its children’s general development extensively, she did not think the delays in language and ambulation were as severe as my patient’s mom reported.

This avenue of inquiry around mother’s and baby’s nutritional status and the gut microbiome-brain axis was altogether missed with this case. After the fact, I considered research about the long-term effects of malnutrition observed in Guatemala and this child’s long-interrupted digestive system. Documentation abounds regarding the impact of malnutrition affecting pregnant women and their infants and children, especially the Maya Mam in Guatemala (Brown et al., 2016; Chary et al., 2013; Dewey & Begum, 2011; Gatica-Dominguez et al., 2019; Lander et al., 2019; Mattei & Pietrobelli, 2019; Nagata et al., 2016; Santos et al., 2018; Solomons et al., 2015; USAID, 2018). Guatemala has the 4th highest level of chronic malnutrition, or stunting, in the world with nearly 50% of children under 5 years old considered chronically malnourished, with that number rising to more than 90% in rural areas (Brown et al., 2019; Chary et al., 2013; Gatica-Dominguez et al., 2019; Martinez et al., 2016; Nagata et al., 2016; Solomons et al., 2015; Steffens, 2018; USAID, 2018). Stunting is associated with impaired cognition, reduced activity, delayed achievement of developmental milestones, and increased vulnerability to infectious diseases, as well as low economic productivity in adult life (Brown et al., 2016; Dewey & Begum, 2011; Gatica-Dominguez et al., 2019; Lander et al., 2019; Martinez et al., 2016; Mattei & Pietrobelli, 2019; Santos et al., 2018). One wonders if this mother’s childhood nutritional status was

inadequate and exerted a long-lasting influence on her after she arrived in the US and became pregnant. Mother is “short” and her baby’s birth weight and length were both under the 1st percentile for gestational age on the WHO growth chart. At the 2-year well-child pediatric visit, this boy’s growth was at the 2nd percentile for head circumference and weight and below the 1st percentile for height on the WHO chart. And as the gut microbiome-brain connection is becoming better understood (D’Agata et al., 2019; Firestone & Callaghan, 2019; Groer, 2020), did the stress of the NICU experience on the baby and the lengthy interruption of his gastrointestinal functioning play a negative role in his neurodevelopment beyond the lack of experience in prone due to the ostomy?

The challenge remains how any provider develops a therapeutic alliance to help a parent see the child the provider sees and appreciate the provider’s concerns. It starts with recognizing that a mother wants the best for her child and that her parenting is culturally based. In this case, the mother does not have a phenomenological perspective that allows her to comprehend that her child’s gross motor delays are impacting how he thinks, communicates, and problem solves through missed developmental cascades. Yet these are important considerations as he prepares to straddle two worlds to function in both his family’s cultural world and to succeed in this Western world in which he will grow up. Relevant to Tervalon and Murray-Garcia’s (1998) concept of cultural humility, the time to self-educate presented itself at the initial visits. Pertaining to Sackett’s EBP (Sackett et al., 1996), clinicians must recognize that family’s cultural practices, expectations, and desires are equipoised with the established EBPs and clinical experiences guiding providers’ goals.

Next Steps

The standardized tests used in U.S. developmental screening and assessment are not inherently sympathetic to culturally mediated differences affecting a child’s rate and sequence of milestone achievement and could potentially lead to labeling a child as precocious or, more often, delayed. In the past decade, increasing attention has been paid to investigating whether cross-cultural validity can be assumed with these tests. Mendonca, Sargent, and Feters did an exhaustive systematic review in 2016 looking at Ages and Stages Questionnaire, 3rd edition; Alberta Infant Motor Scales; Bayley Scales of Infant and Toddler Development, 3rd edition; Denver Developmental Screening Test, 2nd edition; Harris Infant Neuromotor Test; Peabody Developmental Motor Scales, 2nd edition; and Test of Infant Motor Performance. They determined that “standardized motor development assessments have limited validity in cultures other than that in which the normative sample was established” (p. 1213) and by virtue of the universality of developmental cascades, assessment of progress in other domains is implied. This finding has led some countries to establish their own population norms, that is to standardize some of these tests referencing their own culture (Mendonca et al., 2016).



Photo: Rawpixel.com/shutterstock

The standardized tests used in U.S. developmental screening and assessment are not inherently sympathetic to culturally mediated differences affecting a child’s rate and sequence of milestone achievement.

However, that is not the case for immigrant or first-generation infants tested in the US. While immigrants account for 13.7% of today’s U.S. population (Budiman, 2020), it is projected that by 2060 1 in 5 individuals or 20% living in the US will be foreign born (Colby & Ortman, 2015). To create a society that embraces diversity, an important step to consider is how to foster recognition and support through institutional infrastructures? The NFU program has conducted a monthly sociocultural meeting for almost two decades to offer a safe and nurturing space for coworkers to share their curiosities about cultural practices and related health and developmental implications, to explore challenging situations on their caseloads, and reflect on how one might reframe and approach those challenges with a lens of curiosity rather than an authoritative one. Obviously, the range of countries and cultures represented by the increasingly diverse immigrant population in the US make it impossible to accommodate each different ethnic and cultural group, but some concrete steps might include (1) establishing formal partnerships with “cultural brokers” in the immigrant community to assist providers with interpreting cultural practices impacting patients’ health and development, and (2) procedures acknowledging differences in caregiving practices that alter developmental outcomes such as a supplemental questionnaire that could capture the 4 Es’ sources of influence—whether there are physical interactions or restrictions; philosophical differences affecting motor, cognitive, or social responses; or lack of exposure to various experiences, objects, or concepts would be a start. A collaboration between the American Academy of Pediatrics, universities training the professionals assessing development, and the assessment tool industry could work toward a more culturally informed approach. This collaboration could support all the infants and children that will make the US their home, ensuring they become emotionally, mentally, and physically healthy productive residents able to participate and contribute to a shared society.

Margaret Ritchey, MA, RPT, DPT, has worked at Children's Hospital Oakland for 42 years in various capacities and departments. She has been the physical therapist consultant with the Neonatal Follow-up Program since its inception in 1982. Dr. Ritchey supplemented her 1979 master's degree in physical therapy with a clinical doctoral degree in physical therapy in 2013 and after participating in three cohorts of

the Infant Parent Mental Health Fellowship, now part of University of California Davis, she is on faculty and presents on the integration of infant parent mental health and physical therapy with infants. Living in a remarkably diverse community, her interest in cultural influences on parental caregiving and an infant's development and the impact on developmental cascades deepened with this case.

References

- Adolph, K. E. (2019, November 14). *The power of video to understand, capture, and quantify motor behavior* [Conference session]. Academy of Pediatric Physical Therapists Annual Conference, Anaheim, CA, United States.
- Adolph, K. E., & Hoch, J. E. (2019). Motor development: Embodied, embedded, enculturated, and enabling. *Annual Review of Psychology*, 70, 141–64.
- Adolph, K. E., Karasik, L. B., & Tamis-LeMonda, C. S. (2009). Motor skill. In M. Bornstein (Ed.), *Handbook of cultural developmental science* (pp. 61–88). Psychology Press.
- Anderson, D. I., Campos, J. J., Witherington, D. C., Dahl, A., Rivera, M., He, M., Uchiyama, I., & Barbu-Roth, M. (2013). The role of locomotion in psychological development. *Frontiers in Psychology*, 23.
- Ayad, M. N., El Tohamy, A. M., & Kamal, H. M. (2015). Influence of enhanced handling and positioning on motor development in full term versus preterm infants. *Trends in Applied Sciences Research*, 10(2), 88–98.
- Bai, Y., Shang, G., Wang, L., Sun, Y., Osborn, A., & Rozelle, S. (2018). The relationship between birth season and childhood development: Evidence from northwest rural China. *PLoS ONE*, 13(10).
- Bayley, N. (1969). *Bayley scales of infant development*. The Psychological Corporation.
- Benson, J., B. (1993). Season of birth and onset of locomotion: Theoretical and methodological implications. *Infant Behavior and Development*, 16, 69–81.
- Biringen, Z., Emde, R. N., Campos, J. J., & Applebaum, M. I. (1995). Affective reorganization in the infant, the mother, and the dyad: The role of upright locomotion and its timing. *Child Development*, 66(2), 499–514.
- Brazelton, T. B. (1972). Implications of infant development among the Mayan Indians of Mexico. *Human Development*, 15, 90–111.
- Brazelton, T. B., Robey, J., & Collier, G. (1969). Infant development in the Zinacanteco Indians of southern Mexico. *Pediatrics*, 44, 274–290.
- Brown, K., Henretty, N., Chary, A., Farley Webb, M., Wehr, H., Moore, J., et al. (2016). Mixed methods study identifies key strategies for improving infant and young child feeding practices in a highly stunted rural indigenous population in Guatemala. *Maternal and Child Nutrition*, 12, 262–277.
- Budiman, A. (2020). *Key findings about U.S. immigrants*. Pew Research Center. <https://www.pewresearch.org/fact-tank/2020/08/20/key-findings-about-u-s-immigrants>
- Campos, J. J., Anderson, D. I., Barbu-Roth, M. A., Hubbard, E. M., Hertenstein, M. J., & Witherington, D. C. (2000). Travel broadens the mind. *Infancy*, 1, 149–219.
- Chary, A., Messmer, S., Sorenson, E., Henretty, N., Dasgupta, S., & Rohloff, P. (2013). The normalization of childhood disease: An ethnographic study of child malnutrition in rural Guatemala. *Human Organization*, 72(2), 87–97.
- Cintas, H. L. (1995). Cross-cultural similarities and differences in development and the impact of parental expectations on motor behavior. *Pediatric Physical Therapy*, 7(3), 103–111.
- Clearfield, M. W. (2004). The role of crawling and walking experience in infant spatial memory. *Journal of Experimental Child Psychology*, 89, 214–241.
- Colby, S. L., & Ortman, J. M. (2015). Projects of the size and composition of the U.S. population: 2014 to 2060. *Current Population Reports*. www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf
- Cole, W. G., Lingeman, J. M., & Adolph, K. A. (2012). Go naked: Diapers affect infant walking. *Developmental Science*, 15(6), 783–790.
- Czerwinski, K., LeBaron, A., & McGrew, M. (2011). *Maya toolkit*. Produced by Bridging Refugee Youth and Children's Services of the US Conference of Catholic Bishops, Migration, and Refugee Services, Pastoral Maya Inc. & the Maya Heritage Community Project.
- D'Agata, A. L., Wo, J., Welandow, M. K. V., Duba, S. V. O., Kane, D., & Groer, M. (2019). Effects of early life NICU stress on the developing gut microbiome. *Developmental Psychobiology*, 61(5), 650–660.
- Dewey, K. G., & Begum, K. L. (2011). Long-term consequences of stunting in early life. *Maternal and Child Nutrition*, 3(3), 5–18.
- Dudek-Shriber, L., & Zelazy, S. (2007). The effects of prone positioning on the quality and acquisition of developmental milestones in four-month-old infants. *Pediatric Physical Therapy*, 19(1), 48–55.
- Elias, S. (2013). Guatemala. In C. Mikkelsen (Ed.), *The indigenous world* (pp. 78–87). The International Working Group for Indigenous Affairs.
- Firestone, M., & Callaghan, B. (2019). The brain-gut connection: Environmental influences on gastrointestinal biology and neurobehavior across development. *Developmental Psychobiology*, 61(5), 639–639.
- Fonagy, P. (2016, May 10). *Tracing the roots of mentalization*. UC Davis Infant Parent Mental Health Fellowship lecture. Napa, CA, United States.
- Gatica-Dominguez, G., Victora, C., & Barros, A. J. D. (2019). Ethnic inequalities and trends in stunting prevalence among Guatemalan children: An analysis using national health surveys 1995–2014. *International Journal for Equity in Health*, 18(110).
- Gottlieb, A. (2018). The new childhood studies: Reflections on some recent collaborations between anthropologists and psychologists. *AnthropoChildren Perspectives in Children and Childhood*. <https://popups.utiege.be/2034-8517/index.php?id=3162>
- Green, J. A., Gustafson, G. E., & West, M. J. (1980). Effects of infant development on mother-infant interactions. *Child Development*, 51, 199–207.
- Groer, M. (2020, November 30). *Gut microbiome dysbiosis in low birthweight infants: Consequences in neurodevelopment, behavior and lifelong health*. Academy of Pediatric Physical Therapist Annual Conference (virtual).
- Gupta, S. (2019). Culture helps shape when babies learn to walk: Motor development models based on Western standards are too narrow. *ScienceNews*. <https://www.sciencenews.org/article/culture-helps-shape-when-babies-learn-walk>

- Harbourne, R. T., Dusing, S. C., Lobo, M. A., McCoy, S. W., Koziol, N. A., Hsu, L.-Y., Willett, S., Marciniowski, E., L., Babik, I., Cunha, A. B., An, M., Cheng, H.-J., Bovaird, J. A., & Sheridan, S. M. (2021). START-Play physical therapy intervention impacts motor and cognitive outcomes in infants with neuromotor disorders: A multisite randomized controlled trial. *Physical Therapy*, 101(2), pzaa232.
- He, M., Walle, E. A., & Campos, J. J. (2015). A cross national investigation of the relationship between infant walking and language development. *Infancy*, 20, 283–305.
- Healthy Alameda County. (2021). 2021 demographics dashboard. <http://www.healthyalamedacounty.org/index.php?module=demographicdata&controller=index&action=index>
- Heinrich, J., Heine, S., & Norenzayan, A. (2010). The weirdest people in the world. *Behavioral and Brain Sciences*, 33, 61–135.
- Hopkins, B., & Westra, T. (1988). Maternal handling and motor development: An intracultural study. *Genetic, Social, and General Psychology Monograph*, 114, 379–408.
- Hopkins, B., & Westra, T. (1989). Maternal expectations of their infants' development: Some cultural differences. *Developmental Medicine & Child Neurology*, 31(3), 384–390.
- Hopkins, B., & Westra, T. (1990). Motor development, maternal expectations, and the role of handling. *Infant Behavior and Development*, 13, 117–122.
- Kaplan, H., & Dove, H. (1987). Infant development among the Ache of eastern Paraguay. *Developmental Psychology*, 23, 190–198.
- Karasik, L. (2018). Mobility: Crawling and walking. In T. Shackelford & V. Weekes-Shackelford (Eds.), *Encyclopedia of evolutionary psychological science*. Springer. https://doi.org/10.1007/978-3-319-16999-6_2370-1
- Karasik, L. B., Tamis-LeMonda, C. S., & Adolph, K. E. (2011). Transition from crawling to walking and infants' actions with objects and people. *Child Development*, 82, 1199–1209.
- Karasik, L. B., Tamis-LeMonda, C. S., & Adolph, K. E. (2014). Crawling and walking infants elicit different verbal responses from mothers. *Developmental Science*, 17, 388–395.
- Karasik, L. B., Tamis-LeMonda, C. S., Ossmy, O., & Adolph, K. E. (2018). The ties that bind: Cradling in Tajikistan. *PLOS ONE*, 13(10).
- Kretch, K. S., Franchak, J. M., & Adolph, K. E. (2014). Crawling and walking infants see the world differently. *Child Development*, 85(4), 1503–1518.
- Lander, R. L., Hambridge, K. M., Wescott, J. E., Tejada, G., Diba, T. S., Mastiholi, S. C., et al. (2019). Pregnant women in four low-middle income countries have a high prevalence of inadequate dietary intakes that are improved by dietary diversity. *Nutrients*, 11(7), 1560.
- Lobo, M. A., & Galloway, J. C. (2012). Enhanced handling and positioning in early infancy advances development throughout the first year. *Child Development*, 83, 1290–1302.
- Martinez, B., Webb, M., Rodas, P., Gonzalez, A., Grazioso, M., & Rohloff, P. (2016). Field report: Early child development in rural Guatemala. *Perspectives in Infant Mental Health*. <https://perspectives.waimh.org/2016/06/15/field-report-early-child-development-rural-guatemala>
- Martorell, R., Onis, M., Martinez, J., Black, M., Onyango, A., Dewey, K. G., & WHO Multicentre Growth Reference Study Group. (2006). WHO motor development study: Windows of achievement for six gross motor development milestones. *Acta Paediatrica*, 95(450), 86–95.
- Mattei, D., & Pietrobelli, A. (2019). Micronutrients and brain development. *Current Nutrition Report*, 8, 99–107.
- Mei, J. (1994). The Northern Chinese custom of rearing babies in sandbags: Implications for motor and intellectual development. In J. H. A. van Rossum & J. I. Laszlo (Eds.), *Motor development: Aspects of normal and delayed development* (pp. 41–48). VU Uitgeverij.
- Mendonca, B., Sargent, B., & Fetter, L. (2016). Cross-cultural validity of standardized motor development screening and assessment tools: A systematic review. *Developmental Medicine & Child Neurology*, 58, 1213–1222.
- Nagata, J. M., Gippetti, J., Wager, S., Chavez, A., & Wise, P. H. (2016). Prevalence and predictors of malnutrition among Guatemalan children at 2 years of age. *PLoS ONE*, 11(11).
- Public Policy Institute of California. (2021). *Immigrants in California*. <https://www.ppic.org/publication/immigrants-in-california>
- Sackett, D. L., Rosenberg, W. M., Gray, J. A., Haynes, R. B., & Richardson, W. S. (1996). Evidence-based medicine: What it is and what it isn't. *British Medical Journal*, 312(7023), 71–72.
- Santos, D. C. C., Angulo Barroso, R. M., Li, M., Bian, Y., Sturza, J., Richards, B., & Lozoff, B. (2018). Timing, duration and severity of iron deficiency in early development and motor outcome at 9 months. *European Journal of Clinical Nutrition*, 72(3), 332–341.
- Shirley, M. M. (1931). *The first two years: A study of twenty-five babies*. Greenwood Press.
- Solomons, N. W., Vossenaar, M., Chomat, A., Doak, C. M., Koski, K. G., & Scott, M. E. (2015). Stunting at birth: Recognition of early-life linear growth failure in the western highlands of Guatemala. *Public Health Nutrition*, 18(10), 1737–1745.
- Steffens, G. (2018). *Changing climate forces desperate Guatemalans to migrate*. <https://www.nationalgeographic.com/environment/article/drought-climate-change-force-guatemalans-migrate-to-us>
- Super, C. M. (1976). Environmental effects on motor development: The case of African infant precocity. *Developmental Medicine and Child Neurology*, 18, 561–567.
- Tervalon, M., & Murray-Garcia, J. (1998). Cultural humility versus cultural competence: A critical distinction in defining physician training outcomes in multicultural education. *Journal of Health Care for the Poor and Underserved*, 9(2), 117–125.
- USAID. (2018). *Guatemala: Nutrition profile*. <https://www.usaid.gov/sites/default/files/documents/1864/Guatemala-Nutrition-Profile-Mar2018-508.pdf>
- U.S. Census Bureau. (2021). *QuickFacts: Alameda County, California*. <https://www.census.gov/quickfacts/fact/table/alamedacountycalifornia/RHI725219>
- Walle, E. A., & Campos, J. J. (2014). Infant language development is related to the acquisition of walking. *Developmental Psychology*, 50, 336–348.
- Wehr, H., Chary, A., Farley Webb, M., & Rohloff, P. (2014). Implications of gender and household roles in Indigenous Maya communities in Guatemala for child nutrition interventions. *International Journal of Indigenous Health*, 10(1).
- Xie, Q., & Young, M. E. (1999). *Integrated child development in rural China*. The World Bank.
- Zelazo, P. R. (1983). The development of walking: New findings on old assumptions. *Journal of Motor Behavior*, 2, 99–137.
- Zelazo, P. R., Zelazo, N. A., & Kolb, S. (1972). Newborn walking. *Science*, 177, 1058–1059.