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### The Social Life of Metrics

García-Meza, R.; Yates-Doerr, E.

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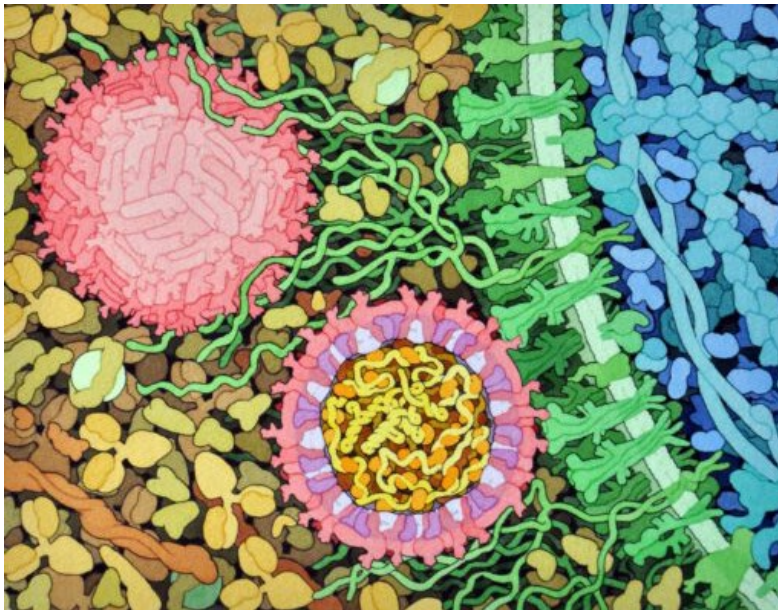
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## The Social Life of Metrics



Over the past decade, the Central American country of Guatemala has reported some of the gravest growth problems for children under five in the world (ECLAC, 2018). [1] Studies of child growth and development tend to focus on metrics such as weight and height, paying little attention to social world of development, including practices of childbirth and childcare.

One key metric of interest is head circumference, which is used as an indicator of child growth both within the mother's womb (when there is access to ultrasound technologies), at birth, and over the first five years of life.

Measuring newborn head circumference is a common practice in most delivery rooms in Guatemala. Doctors will measure the baby's weight (if possible; scales are not always available), the baby's length, and the circumference of the baby's head (MSPAS, nd). The collection of these metrics follows a protocol, and is a recommended practice for infant care and child growth monitoring. Yet in the context of Zika discourse, the measurement of head circumference gains added significance.

Zika is an infection primarily transmitted by the *Aedes aegypti* mosquito. When contracted during the pregnancy period, the infection can cause microcephaly and other congenital malformations, increasing the risk of neurological complications (WHO, 2018). In Guatemala, concern about Zika began in 2015, when the first documented case of the infection was registered. Concern grew in force in 2016, when the division of infectious diseases from one of Guatemala's most prominent hospitals reported the first case of possible congenital associations with Zika (head circumference of a baby was much less than expected for age). Following this case, health authorities recommended that pregnant women and newborns be closely monitored (MSPAS, 2017; BBC, 2016).

*"When the Zika problem arose, we began to really pay attention to collecting measurements."*

*-Former Official from the Pediatric Unit of a Public Hospital*

But what does the practice of measuring head circumference entail, and what is its significance in non-endemic zones for Zika in Guatemala? Though national guidelines provide healthcare workers with protocols for calculating the head circumference of newborns, the actual practice and the way it is understood



Photograph of a poster with information about the prevention and consequences of ZIKA taken at a municipal health center in the Western Highlands of Guatemala.

vary among childcare stakeholders. This is especially true in areas where the chance of contracting Zika is slim, such as the Western Highlands of Guatemala.

Health providers from the Ministry of Health and Social Assistance of Guatemala (MSPAS) in the Western Highlands state that microcephaly is not a concern in their region. Nutritionists and some doctors of MSPAS's public services additionally mention that measuring head circumference is an unusual procedure for primary care or preventative care clinics.

*"No, we don't take this measurement, it's not a service we provide."*

*-Local Health Personnel*

According to a municipal health service provider in the Guatemalan Highlands, microcephaly is not a local problem. She associated it with areas where Zika is endemic— and not necessarily with the physical growth of children.

*"We have received some referrals for microcephaly, but not too many. The only referral I had this year was because the child has a neurological problem, not because he is small."*

*-Local Health Service Provider*

*"There is no microcephaly here...it is quickly noticeable when children have that problem. The children referred with microcephaly to this hospital are from the coast and not from this area."*

*-Local Health Service Provider*

However, a 2015 longitudinal study of growth and development also carried out the Western Highlands – in an area not yet evaluated by the Health Center – affirms the prevalence of microcephaly. The study reported that 19% of infants in early postpartum were affected, and 15% were affected during later postpartum (Chomat et al, 2015). That the presence of microcephaly was not associated with Zika was also confirmed by a group of researchers who analyzed secondary information of head circumference alongside data predating the Zika epidemic. They recommended a further review of this data to address the country's growing concern and as a method of avoiding underreported cases (Rick et al, 2017).

Health providers share a growing concern, which is not yet deeply studied. They mention that finding "small heads" of children is common in Guatemala, suggesting that more cases of microcephaly exist than those only associated with Zika or with neurological problems.

*"I have always said that we are a country [of people] with small heads and we must investigate the implications this has for the growth and development of children."*

*-Former Official from the Pediatric Unit of a Public Hospital*

Yet varied practices and understandings of measuring head circumference, which frequently depart from the recommendations given by health authorities, might negatively impact efforts to monitor the growth of children, impede opportunities for follow-up, and lead to harmful care for children diagnosed with microcephaly—whether or not this is associated with Zika.

Mothers in communities in Guatemala's Western Highlands have differing opinions on what it means for a child to have a "good-sized head." While traditional midwives in this area do not commonly measure the heads of infants, they note that a baby born with an observable "small head" or small body can mean a higher likelihood of survival for both the mother and child.

In situations where maternal care is limited or inaccessible, or where care is provided by traditional midwives, anything that will help the mother's survival is valued by those participating in the birthing process. Some mothers and midwives report that the fact that the baby is small in general (not only in regard to head circumference) decreases obstetrical risk and increases the mother's odds of survival and, thus, her wellbeing over time.

*"It was different before because it was unusual for a child to be born big. Now babies are larger, but the women are also stronger."*

*-Traditional Midwife*

*"Once, a baby was born and weighed something like ten pounds. The mom almost died...he was so big and the delivery took so long, almost all day. I thought he was a lost cause, but now he is a grown man."*

*-Traditional Midwife*

*"Before, dying from childbirth was common, with babies surviving their mothers. Other times the babies died with their mothers."*

*-Mother from the Highlands*

The midwives also report they have found instances where mothers do not consume foods known to provide nutritional benefits during pregnancy because they are hoping to avoid complications during their pregnancy or at childbirth.

*"If the mother wants to eat more, she will eat more, but some mothers will not eat a lot while they are pregnant. They will experience nausea, vomiting, diarrhea, and want to avoid a complicated pregnancy."*

*-Traditional Midwife*

This survival strategy is significant because of how it impacts a woman's diet. Although the pregnant body requires more energy and nutrients to form a new being, there might be necessary limitations so that the size of the baby does not put both of their lives at risk. While there is a recommended diet, prescribed as the "technical" ideal, we should consider instances when the size of the baby might endanger a mother's life—particularly in communities lacking the health services necessary for a complicated birth.

What we know about microcephaly is still limited, but perhaps we could consider this lack of knowledge as an invitation to reflect on the many voices that comprise the science of metrics. After all, metrics have social lives. For health providers, measuring head circumference is a typical part of a process of categorizing children and their health. Yet in this Highland Guatemalan case, these metrics are primarily used in areas where Zika appears as a health problem. Meanwhile, for mothers and midwives, the size of the child is an

indicator of whether a birth may be healthy or complicated, providing insight into the survival prospects of both mother and child.

Both scientists and midwives share an interest in methods of quantification, but their methods have different ends. This raises an urgent question: “what if the link made between microcephaly, the Zika virus, and neurological damage, causes us to overlook an entirely different kind of public health indicator?” From the mother’s perspectives, it seems we might reflect on health inequities that have made giving birth to a child of “appropriate” birth size a life risk to both the child and the mother. As we reflect on the timely issue of head circumference perhaps, we can ask how to better the broader conditions of nourishment and wellness for mothers and their children.

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[1] This is the companion essay to “[Head Circumference](#)” (Yates-Doerr and Garcia, 2020). The research for both pieces was carried out collectively, but the initial authorship was undertaken independently by each publication’s first author. We juxtapose them in this series to emphasize the “awkward collaboration” (Yates-Doerr 2019) that accompanies the different positionalities of public health collaborators.

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***Rosario García-Meza** has more than 20 years of working experience in development, in roles of technical advisor, project manager, researcher, and higher education assistant professor. She has worked at local, national and regional levels, supporting Non-Governmental Organizations, International Organizations, Research Centers and Universities. Her professional training has allowed her to support and lead, along with highly qualified and committed teams, the design, implementation and, monitoring and evaluation of initiatives related to health, development, and fundamental human rights. She holds university degrees in nutrition, participation and social change, and social anthropology from University of San Carlos Guatemala and University of Sussex in the United Kingdom. This training has helped her to integrate conceptual and methodological principles to support the work I have been doing with communities in rural Guatemala and other settings. She writes, “Despite the fact of having three jobs, two children, and a hectic life, I love what I do— especially when it brings unheard voices into the debate, engaging me and others in self-reflection processes.”*

***Rosario García-Meza** tiene más de 20 años de experiencia en temas relacionados al desarrollo, en funciones de asesoría técnica, gestión y coordinación de proyectos, investigadora y como profesora asistente de educación superior. Ha realizado estos roles en diferentes contextos, a nivel local, nacional y regional, apoyando organizaciones no gubernamentales, organizaciones internacionales, centros de investigación y universidades. Su formación profesional le ha permitido apoyar y dirigir, junto con equipos altamente calificados y comprometidos, el diseño, la implementación y el seguimiento de iniciativas relacionadas con acciones en favor del desarrollo local y la garantía de derechos humanos fundamentales. Tiene estudios universitarios en nutrición, participación y cambio social, y en antropología social, por la Universidad de San Carlos en Guatemala y la Universidad de Sussex en el Reino Unido. Su formación le ha ayudado a integrar principios conceptuales y metodológicos para apoyar trabajo con comunidades rurales en Guatemala y en otros lugares. Ella escribe: “A pesar de tener tres trabajos, dos niños y una vida un poco caótica, amo lo que hago, especialmente cuando esto llega a traer al debate voces que usualmente no son escuchadas, promoviendo así, para mí y para los demás, procesos de autoreflexión.”*

***Emily Yates-Doerr** (@eyatesd) is an assistant professor of anthropology at Oregon State University and the University of Amsterdam. Her first book, *The Weight of Obesity*, catalogs the growing public health concern for bodyweight metrics in Guatemala’s highlands. Her current book project, “Doing Good*

*Science: When Fetal Development is Global Development in Guatemala—and Beyond” traces a Guatemalan maternal health initiative focused on prenatal nutrition from the 1960s to the present day. She is an associate editor and regular contributor to Somatosphere.*

**Emily Yates-Doerr** (@eyatesd) es profesora asistente de antropología en la Oregon State University y en la University of Amsterdam. Su primer libro, *The Weight of Obesity*, cataloga la creciente preocupación de la salud pública por las métricas de peso corporal en las tierras altas de Guatemala. Su nuevo proyecto, “*Doing Good Science: When Fetal Development is Global Development in Guatemala—and Beyond*,” sigue una iniciativa guatemalteca de salud materna centrada en la nutrición prenatal desde la década de 1960 hasta ahora. Es editora asociada y colaboradora habitual de Somatosphere.

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