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# Male Influence on Infant Feeding in Rural Guatemala and Implications for Child Nutrition Interventions

Anita N. Chary,<sup>1,2</sup> Sarah E. Messmer,<sup>2,3</sup> and Peter J. Rohloff<sup>2,4</sup>

## Abstract

**Background and Aims:** Guatemala has one of the highest rates of child stunting in the world, which especially impacts rural indigenous agricultural communities. Despite decades of intensive nutrition research and interventions, only rarely have nutrition programs successfully lowered the rate of stunting in these settings. The bulk of nutritional interventions in Guatemala are targeted at the education of female caregivers. However, women's ability to implement best practices in infant breastfeeding and complementary feeding are often constrained by external factors. This study evaluated the knowledge, beliefs, and practices of female caregivers, as well as the attitudes of fathers, toward breastfeeding and infant feeding in a rural Guatemalan village.

**Methods:** Clinical work, participant-observation, surveys, interviews, and focus groups were conducted in a rural Guatemalan village in conjunction with a child feeding program from August 2008 to January 2011.

**Results:** Male employment status, mental health, and attitudes towards child rearing and parenting responsibilities are often principal factors in infant growth failure.

**Conclusions:** Successful child feeding programs must include educational elements for men and should consider structural elements that provide a safety net for unexpected changes in domestic finances.

## Introduction

AT 43%, GUATEMALA HAS ONE of the highest rates of child stunting in the world and the highest rate in Latin America;<sup>1</sup> the indigenous population, who constitute a majority, are disproportionately affected.<sup>2</sup> As demonstrated by the cohort trial performed in Guatemala by the Institute of Nutrition of Central America and Panama (INCAP), beginning in the 1960s, growth faltering occurs in the first year of life and often in the first 3 months.<sup>3–5</sup> In many impoverished indigenous communities, early stunting is associated with delayed introduction of complementary foods and persistence of exclusive breastfeeding beyond the first year of life.<sup>6–8</sup> Because of severe economic constraints and limited food resources in these areas, changes in infant feeding practices are difficult to effect through education initiatives alone.<sup>9</sup> Provision of fortified protein-rich nutritional supplements in this critical window can improve not only growth trends, but also economic prospects and human capital.<sup>10</sup>

Despite decades of intensive development investment, maternal-child health metrics in Guatemala have improved only minimally.<sup>11,12</sup> This is due not only to a history of wealth

disparity produced by Spanish colonialism and more recent civil war and military violence against rural indigenous populations, but also to the difficulty of implementing programs in the complex multiethnic, multilinguistic context that modern post-civil war Guatemala represents.<sup>13</sup> In such settings, ethnography is an important complement to population-based surveys and can serve as a tool to identify barriers and to propose solutions.<sup>14</sup> Therefore, in our involvement with maternal-child health programs run by a non-governmental organization in Guatemala, we have been conducting ethnographic analyses of child growth failure. Here we use case reports from a nutrition program in one Guatemalan village to describe the often overlooked effects of the attitudes, mental health, and employment status of men on infant feeding practices in order to advocate for more comprehensive preventative approaches to child malnutrition.

## Methods

The non-governmental organization Wuqu' Kawoq, which provides health services in several indigenous communities of Guatemala, began a pilot child nutrition program in the rural village of K'exel in 2008. (K'exel and the names of subjects used

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in this report are pseudonyms.) Key features of the ongoing program include the provision of free regular primary care, growth monitoring, infant nutrition education sessions with caregivers, and nutritional supplementation with a fortified corn-soy blend gruel, *Incaparina*, for children 6 months to 3 years old. Focus groups, surveys, and ethnographic interviews complement clinical work by allowing opportunities for social work as well as evaluation of community needs and determinants of child malnutrition. The case studies presented here are based on both clinical observations and qualitative research. Local site approval and ethics review was provided by Wuqu' Kawoq's ethics board and by the Institutional Review Board of Partners Healthcare (Boston, MA).

#### Site description

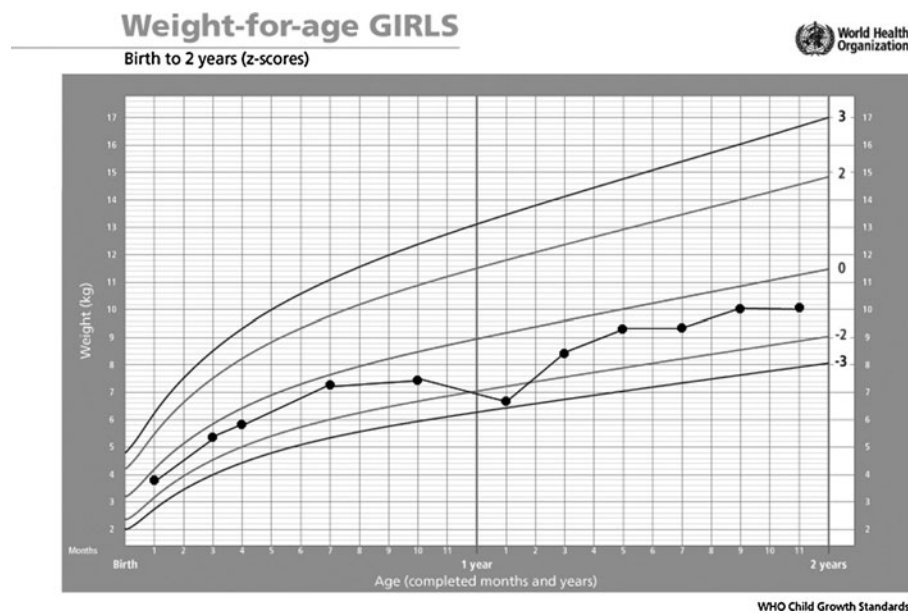
K'exel is a rural agricultural community in the Piedmont region of Guatemala. The majority of the 500 village residents are indigenous Maya who speak a mixture of Spanish, K'ichee', and Kaqchikel. Nearly all local land belongs to plantation owners, and educational opportunities are severely limited. Therefore, the majority of men work as day laborers in agriculture or construction. Few women are able to work in the public sphere because of time-consuming domestic tasks and childrearing. As frequent unemployment is common and food insecurity is ubiquitous, mothers rely heavily on breastmilk to nourish their infants well past the recommended age for the introduction of complementary foods; in a survey of village mothers, the average age at introduction of solid foods was 8.2 months, and the average age at weaning was 21.5 months.<sup>9</sup> Nutritional inadequacy combines with a lack of accessible health care, sanitation infrastructure, and potable water to impair child growth: The prevalence of stunting (height for age z-score less than -2) under age 5 is over 80%.<sup>7</sup>

## Results

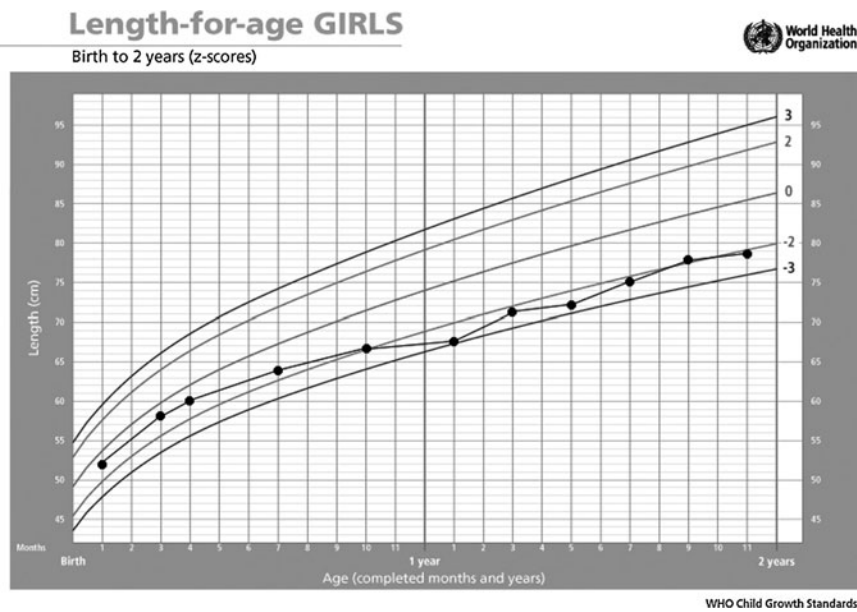
### Case 1

Flora, a 20-year-old mother of two, was elated when her husband Ramon found a stable job after several months of unemployment. Her younger child, Celestina, now 8 months, had begun to ask for food, but Flora had none to offer. She could do nothing but add tortilla water and weak coffee to her infant's diet of breastmilk. With Ramon working at last, she thought, they would have enough to eat, and she would give beans and vegetables to growing Celestina. Her relief was short-lived, however; a few weeks after Ramon began working, he started coming home drunk and gave her less and less money for market expenses.

Ramon had endured a hard life. Born into a landless family, he grew up harvesting coffee and sugar cane for low wages on large plantations. Although his wages increased as he began to work in meat sales, cattle ranching, and construction work as a teenager, he could rarely find more than a temporary position. Gradually, the pressures of stretching his meager earnings to provide for his spouse, younger siblings, and parents accumulated. Desperate and seeking an escape from oppressive poverty, Ramon began to drink alcohol. While his father-in-law's counseling helped him quit drinking from time to time, he often relapsed. Flora, struggling with the economic burden of his alcoholism, could no longer provide solid foods for Celestina and fell back on her dwindling supply of breastmilk. Celestina's weight dropped precipitously at this point, and her height velocity slowed (Figs. 1 and 2). After a period of several months Ramon was able temporarily to control his drinking, and family finances improved; although Celestina's weight improved rapidly (Fig. 1), food insecurity in a critical growth window left her permanently stunted (Fig. 2).



**FIG. 1.** Celestina's weight-for-age z-scores show a decline at 10–13 months, the peak of her father's alcoholism, when he did not provide money for food. (Names of subjects used in this report are pseudonyms.) Her weight improved soon thereafter at 13–17 months, when her father began to drink less and offered more money for market expenses.



**FIG. 2.** Celestina's height-for-age z-scores similarly show decline at 10–13 months, but gains in height following her father's recovery were not as significant as gains in weight. (Names of subjects used in this report are pseudonyms.)

### Case 2

"I wish I could throw myself in front of a bus," cried Florencio in misery. He had just returned home after working for a month at a distant construction site where the corrupt foreman had sent him home with only half his promised wages. His wife Celia had been buying beans and corn on credit from a local shop in order to feed their four children, and her face fell when Florencio presented her with his minimal earnings. She would not be able to pay off the debt at the shop, nor would she be able to continue purchasing food on credit. The children would have nothing to eat.

Florencio had always taken pride in being a good father who provided for his children. Alternating between day labor on local plantations and construction work, he managed to seek out and maintain jobs for the majority of the year despite high rates of local unemployment. In fact, he was well known in the village for his enterprising and hardworking nature, and as such Celia felt she was luckier than many other women of K'exel whose husbands were frequently unemployed. However, this year the job market had been particularly tough, forcing Florencio to accept exploitative positions for minimal pay. Weighed down by shame at his children's hunger, he would rather die, he related, than be a bad father.

Florencio's youngest daughter, Teresa, was born a few months before the troubles began. Although he could not find work for 2 months of her early infancy, she grew well for several months, during which she was exclusively breastfed. Celia began to give her daughter solid foods such as cooked vegetables and cereals at 6 months, aware that breastmilk alone could no longer provide sufficient calories and nutrition. However, because of fluctuations in Florencio's employment and accumulating debts, Celia did not always have enough solid food for Teresa. She continued to rely heavily on breastfeeding to provide calories for her daughter and offered her dilute soups to keep her full and spare food for the older children. Teresa's growth began to falter at 7 months. After

several months, Florencio managed to find stable work, but Teresa's growth stagnated. Despite Florencio's devotion to his family, the food shortage during Teresa's critical time of growth left her stunted, and subsequent improvement in family finances have not remediated her growth deficiency.

### Case 3

With tears in her eyes, Olga sold her only valuable item, a traditional hand-woven Mayan skirt. Weeks ago, her husband Erik had given her money to purchase dried corn to make the family's staple of tortillas. Since then, he had not given her any additional money for market expenses. Rationing the corn, Olga had been eating nothing but tortillas and salt for months and had been able to provide nothing but breastmilk to her son Julio, aged 10 months. She had begged Erik for money for firewood when he returned home from work after 2 weeks, only to be told that the foreman had not paid any of the workers. Olga quickly uncovered his lie when she found out that her father, who worked for the same foreman, had indeed been paid. Soon thereafter, Erik purchased soccer equipment and electronics, and rumors began to circulate about his mistress in a nearby town. Olga's critiques of his behavior provoked beatings from him and slander from her in-laws. As she had nowhere else to go and could not work herself while raising Julio, she had no recourse but to sell her few personal belongings to buy fuel to prepare her meals. Julio's growth, already faltering, declined significantly.

Local gender roles excused Erik's behavior; men are expected to contribute some, but not necessarily all, of their earnings toward the family's welfare.<sup>6</sup> By providing enough corn for the family, Erik felt he had fulfilled his responsibilities as a father and husband, and he spent the rest of his salary on his own enjoyment. Routinized power imbalances between the sexes<sup>9</sup> had allowed Erik to privilege his own needs over his family's, to the point that his wife was breastfeeding away her body and his infant son was starving and stunted.



## Discussion

In Guatemala, child stunting is a pressing public health problem that begins in the first year of life. In our clinical experience developing child malnutrition programs in rural Guatemala, we have been impressed with the relative adherence to exclusive breastfeeding<sup>9</sup> and overall good clinical health of children in the first 6 months of life. The onset of stunting, at around 6 months of age, correlates closely with the transition to complementary foods.<sup>15,16</sup> As we have implemented supplementary feeding programs and maternal education initiatives, we have also conducted ethnographic investigations to identify other factors associated with growth failure at this 6-month transition. The three case studies described herein from one of our feeding programs indicate that paternal factors, in the wider context of political, economic, and social forces, contribute significantly to growth failure.

Although the case studies described here index just a small sample of K'exel fathers, they are representative of numerous similar situations among the families we have followed in our longitudinal clinical work. Fathers in K'exel conceive of their parenting responsibilities in different ways. At one extreme, men like Florencio provide their wives with a substantial part of their earnings in order to feed and clothe the family. At the other extreme, men like Erik feel absolved of their responsibilities once they have provided a token amount of corn for the family. All men, regardless of their stance toward their economic duties, are affected by desperate poverty, labor exploitation, and market variability. Paternal involvement in parenting and in the provision of essential food and financial resources is also affected by mental illness, such as depression and alcoholism, like in Ramon's case.

These case studies underscore how women's breastfeeding and infant feeding practices are heavily influenced and often constrained by men.<sup>17-21</sup> In K'exel, male employment status affects the amount and diversity of food available for an infant, although men themselves have little control over the political economic milieu that encourages labor exploitation and fluctuating demands for labor, as we describe elsewhere.<sup>9</sup> The spectrum of male attitudes and mental health in K'exel also significantly affects the practice of infant feeding. A husband's unemployment, financial indifference, or alcoholism often causes a mother to prolong exclusive breastfeeding or to revert to it once complementary foods become unavailable because of deterioration of family finances. While mothers are the usual targets of education about breastfeeding and the importance of complementary foods, they may not be in positions to change their husbands' employment status or behavior. In K'exel, the balance between breastmilk and solid foods in a growing infant's diet—and, more importantly, the infant's overall physical and mental development and future economic and social potential—is often shaped by men.

## Conclusions

The large-scale INCAP cohort trial<sup>3-5</sup> as well as subsequent national surveys have provided solid baseline data on child stunting in Guatemala, but these have been biased toward urban and nonindigenous populations, and similar data for Maya populations of Guatemala are limited. Baseline data on child growth in indigenous communities are therefore badly needed and cannot be replaced by the case-study methodology

we use here, which is limited by small sample size and lack of generalizability. However, we encourage this kind of qualitative research as an important adjunct that provides valuable insights for local programmatic interventions that are not apparent from clinical investigation alone.<sup>22,23</sup> Additionally, the generalizability of our method could be improved in future studies by a comparative look at multiple settlements in different geographic regions and larger sample sizes.

The principal conclusion of our ethnographic case studies is that infant feeding programs in Guatemala must take into account factors external to the maternal-child unit if inroads are to be made against child stunting. Although mothers are the principal targets of breastfeeding and infant feeding educational initiatives, as well as the frequent targets of criticism for failure to comply with feeding policy recommendations both in Guatemala and around the world,<sup>9,20,22</sup> what we attempt to show here and elsewhere<sup>9</sup> is the ways in which maternal choice and adherence to "best practices" are severely constrained by factors over which the mother has no control.

Each of the three cases of growth failure described here is closely tied to male attitude, mental health, or employment. Community-based nutrition programs in Guatemala must therefore target not only women but also men with educational and other initiatives if a lasting impact on rates of stunting is to be obtained.<sup>17</sup>

Our data also help to provide some explanatory detail for a hypothesis that child nutrition programs that contain a strong preventative component will be more effective than curative-alone programs in Guatemala. Although this hypothesis remains to be rigorously tested in Guatemala, it has been recently well established in rural Haiti.<sup>24</sup> As male unemployment and underemployment are unpredictable phenomena in rural Guatemala, but have a dramatic impact on child growth by affecting the availability of complementary foods, universal provision of supplementary foods in the critical first years of life can provide a social safety net that buffers the impact of these external factors on the maternal-child unit.

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## Disclosure Statement

No competing financial interests exist.

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