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**Healthcare Provider Perspectives on the Influence of Cultural Beliefs on Infant and Young  
Child Feeding Practices within Ghanaian Refugee Camps: A Qualitative Analysis**

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A Thesis submitted in Partial Fulfillment of the Degree of Master of Public Health in the  
Department of Social and Behavioral Sciences

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## Abstract

Adherence to breastfeeding and complementary feeding recommendations is a proven strategy for promoting the well-being of infants and young children and ensuring their proper development. Cultural beliefs inform caregivers' likelihood to follow these guidelines as they influence caregivers' thoughts about maternal behavior during the prenatal and lactation periods, child feeding behaviors, and health. Refugee camps or settlements are a unique space to study the coexistence of cultural beliefs held by residents and staff. Understanding the pathways by which cultural beliefs modulate caregiver infant and young child feeding (IYCF) behavior (and therefore impact child health) within these settings is of paramount importance to global health because refugees are some of the most vulnerable people in the world. This study aimed to understand, from the perspective of health care providers, cultural beliefs related to IYCF practices among refugees in Ampain and Krisan refugee camps of Ghana's Western Region.

This qualitative study consists of eight semi-structured, in-depth interviews conducted in 2019 with Ghanaian, Liberian, Togolese, and Ivoirian healthcare workers. All were audio recorded and some translated from French. After transcription, the study team used a grounded theory approach to code for emerging concepts until no new themes became apparent.

Nine domains were identified: caregiver IYCF cultural beliefs, provider training, family roles, provider IYCF knowledge & beliefs, provider education delivery, support, healthcare access, food security barriers, and caregiver IYCF practices. Cultural beliefs were a major driver of IYCF practices. They directly influenced caregiver feeding behavior and were also related to them indirectly through two distinct pathways.

Findings presented here refuted our hypothesis that providers in Ampain and Krisan were largely unaware of cultural beliefs present in the camps outside of their professional interactions

with refugees and that providers did not take beliefs into account during their education activities. IYCF practices were shown to be a multifactorial outcome with cultural beliefs at their root. Providers were responsive to other factors, such as family structures and economic challenges, that influenced breastfeeding and complementary behaviors. These results therefore characterize some of the barriers to and facilitators of following IYCF recommendations experienced by refugees, from the point of view of health care workers.

## Acknowledgements

This thesis would not have been possible if not for the continued mentorship and support of many individuals at Yale and beyond. Point Hope Ghana staff working in Ampain and Krisan were key partners in this project. I am immensely grateful for the interviewers involved in data collection and the students who initiated this study in 2019. This thesis is a reflection of their remarkable efforts to bring attention to the lived experiences of some of the world's most vulnerable people.

I would like to extend my deepest thanks to my advisors, Dr. Amber Hromi-Fiedler and Dr. Rafael Pérez-Escamilla, for all of their thoughtful guidance during this process. I am also appreciative of research assistants Christine Pham and Emily Johnson for their invaluable assistance with data transcription.

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## Introduction

Interest in optimizing infant and young child feeding practices is global. Target 3.2 of the United Nations Sustainable Development Goal (SDG) 3 aims to “end preventable deaths of newborns and children under 5 years of age” by 2030 (*Sustainable Development Goals*, n.d.). Targets 2.1 and 2.2. of SDG 2 intend to 1) “end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round” and 2) “end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons” (*Goal 2 | Department of Economic and Social Affairs*, n.d.).

To optimize IYCF outcomes, the World Health Organization (WHO) has clear infant and young child feeding recommendations: breastfeeding initiation within the first hour of life, exclusive breastfeeding for the first 6 months, and continued breastfeeding until at least the 24-month mark with the introduction of appropriate soft foods (*Guideline*, 2018). Complementary feeding should be *timely* (beginning at 6 months), *adequate* (meeting the baby’s nutritional needs) and *safe* (hygienically prepared, stored, and delivered to babies) (*Complementary Feeding - Global*, n.d.). Introduction of semi-solid, soft, and solid foods beginning at 6 months old is necessary because at this point, breastmilk no longer satisfies nutritional requirements (*Complementary Feeding | Nutrition | UNICEF*, n.d.). After the first year, children should consume the same nutrient-rich foods (e.g., eggs, dairy, various meats and seafoods) as the rest of their family, while avoiding nutrient-deficient drinks (i.e., coffee, tea, and sodas) (*Complementary Feeding - Global*, n.d.).



There is a wealth of information detailing the significance of improper feeding for infants and young children. Nearly 12% of under-5 mortality is attributed to suboptimal breastfeeding in the first two years of life (Black, Victora, et al., 2013). Breastfeeding is also linked to reduced risk of childhood obesity and prevalence of gastrointestinal and respiratory tract infections (Binns et al., 2016). Children younger than two years of age experience rapid physical changes, as well as emotional, psychosocial, and neurological developments that are supported by non-breastmilk foods. There are important consequences in the short term and throughout the life course when children are not fed according to the recommendations. Studies in Rwanda and Indonesia have found associations between stunting and suboptimal complementary feeding practices such as giving children foods of low quality and providing an insufficiently nutritionally diverse diet (Uwiringiyimana et al., 2019) (Soesanti et al., 2020) (Ahmad et al., 2018). In under-resourced settings, delayed introduction of complementary foods increases the likelihood of anemia. One explanation is that some complementary foods caregivers provide are pathogen vectors which put children at risk of contracting gastrointestinal illnesses during a critical period of growth (Zhao et al., 2016). Because lack of proper nutrition undermines the physical and cognitive abilities critical to economic productivity, feeding practices play a role in developing countries' advancement (Black, Alderman, et al., 2013). Furthermore, the period of complementary feeding is important for the development of healthy eating behaviors such as willingness to try new flavors and textures, feeding in response to the young child's satiety and hunger cues, and keeping appropriate time intervals between meals (Were & Lifschitz, 2018).

Refugees are vulnerable to poor adherence to IYCF recommendations due to potential lack of awareness of international guidelines. Their children who are not breastfed are particularly susceptible to infections, diarrhea, and mortality (Aakre et al., 2017) (Ogbo et al., 2017). Displaced

infants residing near the Myanmar-Thailand border were found to have poor growth metrics. Interestingly, Myanmar itself has unsatisfactory rates of adequate feeding and exclusive breastfeeding (A. H. Hashmi et al., 2019). Globally only 41% of babies younger than 6 months old were breastfed exclusively (*Guideline*, 2018). Breastfeeding behaviors of displaced mothers can be negatively impacted by the instability in their living situation compared to women native to the host country, suggesting that there is a need to further understand the specifics of infant and young child feeding in refugee contexts (Bayram Değer et al., 2020).

Against this backdrop, understanding barriers to and facilitators of breastfeeding and complementary feeding is a key precursor to increasing adherence of mothers to WHO guidelines. Exploring cultural beliefs that can affect IYCF practices is one way to do that. Knowledge about the cultural beliefs that determine foods introduced during this time impacts eating habits that influence health. Indeed, previous studies have shown that traditional cultural beliefs strongly influence IYCF practices in intergenerational rural communities in South Africa, among immigrant Chinese mothers living in the United Kingdom, and within households in Mozambique (Chakona, 2020) (Zhang et al., 2020) (*MCSP-Mozambique-TIPs-Report-Exec-Summary.Pdf*, n.d.). The common denominator is that cultural beliefs and the influence of support systems affected how closely caregivers adhered to Western feeding recommendations. Women from the Blue Nile region of Sudan traditionally discarded colostrum, feeding infants porridge and water for the first week before commencing breastfeeding; it was common to supplement animal milk during the first 6 months as well (Gee et al., 2018). Mothers in the northwest of Ethiopia similarly discarded colostrum due to a belief that it would wound infants' throats and make them unhealthy later in life. They also avoided feeding young children meat to avoid causing dental problems (Mekonnen et al., 2018). Residents of the Karanga District in Ghana's Northern Region think that

feeding children younger than a year old “heavy” food such as banku and fufu will prevent them from learning to walk (Armar-Klemesu et al., 2018). However, in the Upper West Region, fathers (who make all final decisions about IYCF behaviors) believe that breastmilk consists only of water and attribute their masculine characteristics to supplementary feeding with porridge earlier than 6 months; mothers also do not breastfeed while pregnant for fear of giving the older child “bad milk” (Afaya et al., 2017).

Given that sub-Saharan Africa is home to more than 26% of the world’s refugee population, understanding beliefs that influence the health of children living in this region is of major concern for intergovernmental organizations and local ministries alike (United Nations High Commissioner for Refugees, n.d.). Each refugee camp is a unique entity in that cultural beliefs from the host country exist to some extent alongside those the residents bring with them from home. Mandelbaum et al. identified cultural beliefs as one factor in a network of drivers influencing dietary practices among Liberian caregivers of infants and young children living in refugee camps in Ghana (Mandelbaum et al., 2019). According to providers, they believed hot pepper made babies strong and rice inhibited babies’ walking skills. Beliefs around rice also included that it contained health promoting properties that emerged when cooked until soft, added to stew, and given to young children.

In these highly dynamic and variable environments, it is critical that healthcare providers who deliver care to refugee populations have a working understanding of how cultural interactions can determine refugee IYCF behavior. To our knowledge, there is a dearth of studies examining infant and young child feeding cultural beliefs among refugees in sub-Saharan Africa, especially from the perspective of healthcare workers. This is important to address among refugee populations because their children face a constellation of health challenges that make them

particularly vulnerable to otherwise preventable conditions; and some of these may be addressed through the provision of culturally appropriate IYCF education and counseling. This research project is a novel contribution to the literature on the intersection of cultural beliefs and IYCF. It explores how taking into account the perspective of healthcare workers about the women and children they serve may influence effective IYCF education and counseling programs within refugee camps in the Western Region of Ghana. Specifically, findings from this study can inform programs about how their health care providers can effectively respond to cultural beliefs among refugees to improve infant health and nutrition outcomes as early as possible in a child's life.

The overarching goal of this project is to understand, from the perspective of health care providers, cultural beliefs related to infant and young child feeding (IYCF) practices among refugees in Ampain and Krisan refugee camps of Ghana's Western Region. The first objective of this project was to characterize caregiver IYCF cultural beliefs from the perspective of health care providers that provide IYFC education in these two communities. We hypothesized *a priori* that 1) health care providers would have little knowledge on their own about caregiver IYCF cultural beliefs (e.g. about breastfeeding, who does the feeding, how food is procured, etc.) among refugees living in these two communities and 2) health care providers' cultural belief knowledge would come directly from their professional interactions with refugees. Furthermore, we posited that health care providers would not take these traditional beliefs into account when educating refugee caregivers in IYCF. The second objective was to identify additional factors that, from the health care provider perspective, need to be taken into account when delivering IYCF education and counseling to refugees in Ghana's Western Region.

## Methods

### Setting

This qualitative study was conducted in the Krisan and Ampain refugee camps located in Ghana's Western Region. Established in 1996 to house Liberians fleeing conflict, Krisan is now home to nationals from across the African continent (Rwanda, Chad, Sudan, Sierra Leone, etc.) and has a population of nearly 900 (*Western Region – UNHCR Ghana*, n.d.). Within Krisan, IYCF education is provided primarily through an non-governmental organization (NGO)-run nutrition program as well as Child Welfare Clinics (CWC), when community nurses from Ghana Health Service visit the camp every month to conduct growth monitoring, vaccinations, and IYCF counseling.

Ampain Refugee Camp is located very close to Krisan Refugee Camp. Ampain, founded in March 2011 in response to violence in Côte d'Ivoire, houses approximately 3,000 primarily Ivorian displaced persons. Ampain has a health clinic run by Ghana Health Services nurses, a midwife and a medical assistant. IYCF education is provided by these providers as well as through CWC. Refugees also receive medical care from the Saint Martin De Porres Catholic Hospital (approximately 13 kilometers from Ampain and two kilometers away from Krisan) and medical centers in nearby towns (*Western Region – UNHCR Ghana*, n.d.).

### Study Design

Qualitative data in the form of in-depth interviews were collected from May to August 2019. Ethical approval was obtained from the Ghana Health Service and Yale University Institutional Review Boards. Approval to conduct the study in the camps was received from the Ghana Refugee Board.

Participants were eligible for this study if they were health care providers, taught IYCF to refugee caregivers, and were knowledgeable about cultural beliefs regarding IYCF practices (i.e. beliefs surrounding breastfeeding and complementary feeding practices as well as general food beliefs) among refugees in Krisan and Ampain. District and local level health care providers in charge of supervising staff and IYCF training identified eligible participants. Those agreeing to participate were enrolled and an interview was scheduled for a convenient date/time.

Two bilingual refugees fluent in English and French conducted the in-depth interviews with enrolled participants. Prior to conducting each interview, written informed consent was obtained from the respondents and any questions about the study were answered. Interviews ranged in length from 26 minutes to 90 minutes, with an average duration of 60 minutes. They were audiotaped and those conducted fully in French were audio translated into English. Participants were compensated for their time with phone credit (~\$5 US).

The interview guide (Appendix) was developed, revised multiple times, and piloted to ensure cultural appropriateness and efficacy in collecting desired information. Specific questions and probes that were posed were determined in part by conversations with key informants prior to beginning interviews. The interview covered 1) provider background and interaction with parents 2) advice providers give and 3) family and cultural beliefs. Participants were also given time at the end of the interview to elaborate on any beliefs or traditions relating to infant and young child feeding they deemed relevant. The direction of interview and lines of questioning were expanded upon based on information revealed during the interview.

Prior to beginning the study, the interviewers received 2.5 days of training specific to this project, which was delivered within a 5-day training period by Point Hope Ghana and Yale School of Public Health M.P.H. candidates. The training consisted of: 1) review and practice of the

consent form and ethics in research; 2) explanation of the interview guide and discussion of questions; 3) role playing to practice. Interviewers received guidance on how to translate these study materials into English orally.

### Sample Size and Power Calculations

Based on our previous work with refugees in Ghana, we anticipated that a total of 9 interviews would allow for thematic saturation about IYCF practices and beliefs from the perspective of healthcare providers within and around the two camps.

### Analysis

Interview audio files were uploaded onto an online platform (otranscribe.com) temporarily to facilitate transcription. If originally recorded in French, they were translated first into English by one of the bilingual interviewers. 8 transcripts were transcribed: 2 were completed prior to the thesis author's (MNVB) involvement, 3 by MNVB, and 3 by two research assistants. After several attempts, it was not possible to transcribe the ninth interview due to the poor quality of the recording. All transcripts went through a quality control process, with special attention paid to those with disruptive amounts of static or other forms of background noise captured on audio.

A grounded theory approach drove the analysis and interpretation of the results. Two of the research team members (MNVB and AHF) independently read and coded the first transcript to create a preliminary coding structure in close consultation with Dr. Pérez-Escamilla (RPE). The two researchers applied those codes independently to the second transcript, compared codes, reached consensus, and identified new codes. The codebook was refined iteratively for each subsequent transcript following the same consensus process. Differences in the way codes were applied to data were resolved through consensus and discussions with the third researcher (RPE).

Saturation was reached with 7 interviews, when no new sub-themes, themes or domains could be identified in the interviews, and the authors independently coded the transcript. The researchers (MNVB, AHF, RPE) met biweekly virtually via the Zoom platform to standardize utilization of codes and finalize the codebook. A conceptual framework was developed describing factors directly and indirectly influencing infant and young child feeding practices. Taking inspiration from the four-tiered organization of socio-economic models often used in studies and initiatives regarding nutrition, MNVB developed a study analysis framework based on a multilevel structure (Golden & Earp, 2012).

## Results

### Participant Characteristics

On average, providers were 36.3 years old; the range was 29 to 51 years old. Providers were West African: two from Cote d'Ivoire (having lived nearly 9 years in Ghana), two from Ghana itself, one from Liberia, and one from Togo (but residing in Ghana for the last 27 years). All but one person spoke English; some also spoke French as well as some tribal languages including Twi, Ewe, Nzema, Guerre, Wobe, and Tull. All providers had worked in their camp for at least 2 years, with some there up to 8 years. Five providers were university educated, two had completed junior high school, and one primary school. Information regarding one of the participants was unavailable.

### Factors Related to Caregiver IYCF Practices

Nine domains emerged from qualitative interviews with healthcare providers that influenced IYCF practices among refugees from Ampain and Krisan camps: caregiver IYCF practices, healthcare access, provider education delivery, support, provider training, provider



IYCF knowledge & beliefs, caregiver cultural beliefs, food security barriers, and family roles. These can be arranged into four broad overarching constructs: beliefs, education, external influences, and behavior.

## Beliefs

Providers described an expansive range of personal as well as IYCF cultural beliefs that they and refugees held.

### *Caregiver IYCF Cultural Beliefs and Related Behaviors among Refugees:*

Healthcare providers working in Ampain and Krisan were aware of numerous cultural beliefs and practices in their camps, which they clearly articulated to interviewers from their perspective. Mothers directly linked foods to improved health. A number of available foods were believed to “give blood” (i.e. provide iron) including cassava leaves and “small garden egg/berry” added to palm soup. Among refugees, Liberians were reported to prefer cultural greens like potato greens and Ivorians chose green leaves. There were a variety of readily available natural remedies caregivers believed were effective in the treatment of diseases like fever and malaria: papaya (i.e. popo) tree leaves and roots, mango tree bark and dried roots, and coconut water. Mothers also employed leaves and a mixture of honey and lemon to induce vomiting in their children. Cultural beliefs encouraged expectant mothers to avoid plantains although there was no specific reason attached. Similarly, pregnant women expressed to providers hesitancy to consume snails for fear of their babies drooling or spitting excessive amounts of saliva.

There were a number of beliefs and practices related to breastfeeding. According to the providers, some mothers were hesitant to breastfeed because of beliefs that breasts would sag, become flat or “spoiled”.

*...then there are others too who think that when they breastfeed the child, their breast is not going to stand as before... (ID # 102, page 4)*

Mothers would stop nursing earlier than recommended because they believed it would help their bodies look nice after childbirth. They also indicated that the baby would become sick from breastfeeding, and that poor latching caused sore breasts and child illness (i.e. thrush).

*...they no want to breastfeed...If [the areola] no enter the child mouth, the, that one can make the sore because the child holding mouth so they can cause the sore...It cause some sickness too...if the child before the mother have the sore for the breast, you should see the child tongue. If the tongue is white...its means the mother have some sickness. The mother have to go to the hospital and take the treatment so from that one, I see it from two people. Soon I finish they come and say I should clean the, the child mouth, so I finish see them I'm say no this one is the sickness. You have to go take the child go to see the hospital. (ID # 103, page 33)*

Women were also discouraged from breastfeeding based on the child's gender.

*There have been instance where the mother came in, gave birth here, and she said, she was looking for a girl and the baby was a boy. And they said they will not breastfeed.. She was going to buy what we call, what we call, this canned formula for the child... (ID # 102, page 4)*

Breastfeeding decisions were at times influenced by the child's appearance; i.e., if he or she was not handsome enough.

*And there was another one too who came, and he said, the child... this one is very funny... he said the child is not, he's not handsome, so he will not breastfeed... (ID # 102, page 4)*

Women in sexual relationships with men other than the child's father believed it was necessary to cease nursing.

*But come to the cultural beliefs, and then, I interact with some of the mothers and they said that when one is breastfeeding, what they know, what they believe is that, that the mother will not have to sleep with a man who is not the child, who is not the father of the child. Okay, and most of times, those people who come and deliver here, they are not married women. They have their boyfriends and stuff like that. So after four, five months, they decide to stop breastfeeding. When you ask them, they say, "I'm going out with a different guy, who is not the father of my child and it's a taboo for us to breastfeed the baby in our country, and where I live in Ivory Coast, a taboo for to be going out and sleeping with*

*another man who is not the father of your child. Therefore, I have to stop breastfeeding the child, because he's... he's no more with the father. So you try to change that, but they said no, it's what they want...(ID # 102, page 4)*

To stimulate breastmilk production, nursing mothers smeared shea butter on their breasts and/or consumed traditional foods like soups (palm nut, ground nut, light), green leaves, *banku* with *pepe* (i.e. pepper), and (mashed/ice) *kenkey* to boost their milk supply.

Exclusive breast feeding was not universally accepted despite being a major point of emphasis for healthcare providers involved in education and counseling efforts. Mothers, believing that breastmilk was not sufficient to sustain a child, would give water in an attempt to quench perceived thirst. This was complemented by the traditional practice of giving water to newborns due to a belief that introducing water too late will “make it hard on the child” to transition to solid foods. As a result, children were given warm water with milk in hopes of making them strong. Newborns were also fed commercial formula during their first week because mothers thought of colostrum as dirty.

*...And most of them they said [colostrum is] not clean. So they won't give it to the baby. No matter what you do, they won't want to breastfeed the baby for maybe three or four days, and sometimes for a week. They will have to go for the formula and give to the baby...(ID # 102, page 4)*

A fat or chubby child was presumed healthy, so mothers encouraged babies younger than 6 months of age to eat by giving them foods the infants seemed to like.

Refugees retained strong beliefs stemming from their country of origin. One provider observed that Ivorians living in Ampain and Krisan demonstrated beliefs similar to those of native Ghanaians. Refugees from other nations had behaviors unique to their home countries that differentiated them. Ethiopian mothers were reported to put leaves on their children’s eyes (instead of eating them as commonly reported in the camp), albeit with no explanation as to why. Some

Sudanese mothers used bottles to feed milk to their children, which one provider thought of as strange. Lastly, Togolese mothers ate boiled corn and drank hot water to produce more breastmilk.

#### *Provider IYCF Knowledge & Beliefs:*

Healthcare providers also spoke at length about their own knowledge and beliefs related to IYCF. Whereas mothers in the camps held strongly to traditional beliefs, healthcare providers tried to uphold IYCF guidelines and at times perceived traditional beliefs to be wrong. Among providers, there was consensus about food safety. Both improper cooking and unsanitary food storage led to disease or illness (e.g. cough). Providers understood that purified water purchased at the market or water boiled at home were safe for infants and young children. Early introduction of untreated water was known to cause diarrhea. Babies less than a year old were not to be fed honey due to the presence of botulism-causing spores.

Provider knowledge about breastfeeding was consistent with WHO standards. Multiple providers stated that mothers should breastfeed exclusively for the first 6 months of life because it is beneficial for the baby; continued breastfeeding with the timely addition of complementary foods after that age facilitates good weight gain. Not breastfeeding was considered unacceptable and unfair to the child because it could lead to, among other things, the baby looking “lame”.

*P: The two months...The mother was not giving the breastmilk. Not giving anything. She would just leave the baby like that, walking around. Just she wanted to further the education. [We] said no, you have to give the breastmilk. Fine you want to go to school. When the time comes you can go, you can further your education. You have to give the breastmilk....Other than that, the baby will look lame, like an old man or an old lady. It shouldn't be that way. Baby should look fresh, heh, so that everything will be moving all around...(ID # 104, page 3)*

However, if the mother was not present, providers felt it was permissible to feed a baby formula, because a satiated baby was always considered healthier than a starving one.

Providers were similarly in agreement about factors contributing to the health of infants and young children. They strongly believed that parents of sick children should consult hospital staff for feeding recommendations or else they risked accidentally hurting their child with improper foods. All children had to eat well—meaning consume a diet full of vegetables and fruits—to stay healthy because the suite of foods they ate determined the protective ability against sickness. Providers encouraged parents to feed foods such as Irish potato, fish, banku, oil and beans out of belief that these foods improved child growth. For the same reason they cautioned against excessive sugar and salt intake, which they knew would increase the risk of children developing non-communicable chronic illnesses like hypertension and diabetes later in life. At the same time, providers claimed that individual foods themselves could neither give diseases nor protect children from contracting them.

Because maternal diet prenatally and postpartum was known to shape infant health and determine how a baby grows, it was a major concern for healthcare providers. Providers thought it imperative that pregnant women eat a nutrient-rich array of foods knowing that “what mother eats, baby eats”. In particular, prenatal consumption of fruits (e.g. pineapples and oranges) and green leafy vegetables made babies healthy. Having a diverse diet consisting of foods from various groups helped the child look “nice” both when they were getting nutrition directly from their mothers or via complementary feeding.

*P: Yeah, so I talk to them about diet diversity...I tell them they need a number of food groups in order to eat, have a balanced diet... "If you, you or your child, want your child to grow very well and then the child will have nice skin, when the child will, like, you want her muscles to get, a child is growing. So she will develop muscles and then, like her body is growing. You need foods which contain protein."...then we look at foods that give children energy...so they need foods that are rich in carbohydrates so we have our acheke, our rice, our cassava, yam, banku, coco, cassava, corn, porridge...Then we talk about fruits and vegetables, which I taught them are very very important and they protect their children from getting sick...the fruits and vegetables contain minerals and vitamins so they*

*help the cuts to heal faster and the food, the fruits also have certain vitamins like vitamin C which help them to recover quickly. So when their children are suffering from diarrhea or are sick generally, I encourage them to include more fruits and vegetables in their diet...(ID # 105, page 9)*

Providers considered eating leaves “for blood” to be a healthy practice and encouraged it as a culturally familiar means of increasing iron intake. To improve breastmilk quality, some providers wanted nursing moms to eat balanced meals of maize and banku, as well to drink fluids. Providers said that consuming milk and maize while nursing helped babies take in calcium. Hot water specifically was thought to make milk come down. They did not have the same opinions about the way specific foods consumed by mothers affected mothers’ and babies’ health. Some providers contradicted their own advice by first claiming that certain foods mothers ate did not have an effect on their or their baby’s health, and then going on to recommend foods they considered to be health promoting. On the other hand, other providers stated that infant health was directly related to the foods consumed by their pregnant and lactating mothers.

However, there were instances of beliefs that mixed the scientific with the non-scientific. According to the providers, pregnant women were considered “double” and no longer a single person because of their physical connection to the growing baby, which explained their increased nutritional/caloric need during gestation. Consistent with mothers’ beliefs, providers named the same foods as having healing properties: mango tree roots/bark, papaya (popo) leaf/root for fever and malaria, and coconut water. Providers did not provide the biological reasoning for how these foods worked, but nonetheless were confident in their ability to heal.

## Education

### *Provider Training:*

Healthcare providers had diverse educational experiences that prepared them to teach numerous topics to refugees. Some providers had pre-service training which covered prenatal and IYC nutrition, breastfeeding fundamentals, and communication techniques for interacting with parents and their children. One provider completed undergraduate and graduate-level studies in food and nutrition. Some providers received informal in-service training which involved learning through their field work as well as from other providers. Another provider cited experiences with their mother and general exposure to their culture's IYCF practices. Knowledge gained from being a caregiver in their personal life complemented what they were taught in more standardized settings and was incorporated into how they provided IYCF education and counseling to refugees.

### *Provider Education Delivery:*

IYCF global recommendations were a major driver of how IYCF education was delivered in the camps.

*P: ...I've been in Ampain Refugee Camp for two years, and I've realized that most of the mothers, it has changed the way they feed their babies. Concerning what we [are] telling them. It has changed. And it's improving, because we do interact with them...(ID # 102, page 4)*

Providers' educational activities took place in various locations to maximize outreach. These sites included antenatal clinics, multiuse facilities at Ampain, "pregnancy schools" (in collaboration with the Ghana Health Service) where providers discussed what mothers should do during the prenatal period, refugees' homes, and CWC. The target population was primarily mothers, especially those with young ones younger than 5 years old, because they were nursing and spending much of their time caring for children. According to the providers, their education

empowered women, helped change perceptions about breastfeeding, and encouraged making good feeding decisions. Fathers were generally not available because they worked outside the camps, but those who were present at CWC were included in the teaching activities. Providers impressed upon them the necessity of helping their breastfeeding wives. Recognizing the nature of family connections, providers also targeted community leaders, other family members, and anyone else involved in the child's life.

During the prenatal and postpartum period, providers educated mothers on keeping themselves healthy. During the prenatal period, providers highlighted for mothers the importance of rest and proper nutrition. In particular, they educated mothers on how food diversity could be achieved by eating fruits and vegetables, as well as fish (e.g. herrings) for protein and iron. Good maternal nutrition for lactating women was explained to mothers as eating well with a balanced diet to ensure an adequate milk supply. Mothers whose providers perceived they needed more breastmilk were advised to eat more, especially foods with high water content and leafy vegetables rich in protein and iron, to boost production. Lactating mothers with sick babies suffering from common childhood illnesses such as diarrhea were told to remove certain foods (e.g. traditional soups and animal milk) from their own diet until the illness was resolved. Women were told to continue breastfeeding for two years, even if they became pregnant again.

Exclusive breastfeeding education was a primary focus during the postpartum period. Mothers were directed to begin breastfeeding within an hour of birth and to continue 8-12 times a day for at least 20 minutes per session to initiate lactation. Colostrum, the first milk rich with nutrients and antibodies, was known as an essential benefit for newborns. Mothers were taught to suckle their babies on demand and express their breastmilk in the event they were away from their children. Providers emphasized breastfeeding was important because it contains all the nutrients



and water the child needs to support its growth and prevent disease. Thus, water during the first 6 months was not needed.

*P: ...So when I go to them and I tell them the importance how the child needs to be solely on breastmilk till 6 months and not taking in anything and then the risk of contamination or infection from introducing water or any other thing too, their mothers they understand and it shapes the way they, they practice the exclusive breastfeeding... (ID # 105, page 4)*

Providers portrayed exclusive breastfeeding as an attractive feeding option by saying that it boosted child intelligence and served as a natural contraceptive. Additionally, not choosing this feeding method could lead to infections from water or food that were introduced to a baby who was too young to respond to it properly. Providers recognized that breastfeeding could be a difficult process and encouraged mothers to remain patient as they learned how to do it. Providers helped mothers breastfeed by showing them proper positioning—having the areola fully in the child’s mouth—to ensure a good latch and facilitated successful eating. Mothers who were unsure about whether their child was getting milk were instructed to check their diapers.

Providers counseled caregivers that the transition to complementary feeding should occur at 6 months with recommended first foods including soft mashed potato, mango, maize corn, and mashed fruits. Clean water, including that from the borehole, at this age could be introduced. Parents were instructed to strive for a balanced meal with carbohydrates, minerals, vitamins, and proteins. This meant providing diverse, simple, and nutritious foods (e.g. rice, beans, maize, mango, eggs, banana, banku, oil, fish, fufu) to the child and avoiding fiber and sugar. Iron-rich foods (e.g. green leafy vegetables and animal source foods such as organ meats and fish) were strongly recommended, especially during times of child illness because they were thought to quicken recovery. Parents were advised to mix warm water with milk and avoid spicy foods when feeding their children. Specific responsive feeding techniques were incorporated in the education

and included being aware of hunger cues and repeatedly exposing children to the same foods to build familiarity and acceptance. Food safety during the complementary feeding period was also covered. To protect children from sickness, parents were taught to keep the eating area clean, wash bottles and utensils thoroughly, and cook food well.

When necessary, providers emphasized the practice of seeking medical advice from professionals instead of following (potentially harmful) cultural practices. For example, educators asked mothers to adhere to any medication routines they had been prescribed and sleep under nets to avoid malaria-induced miscarriages. They also warned them against eating clay, which some mothers consumed to ward off nausea based on cultural beliefs. Those with morning sickness were advised to try consuming small meals and snacking on carbohydrates.

Some topics were avoided. Providers never spoke about the specific foods refugees had to eat because not all of them were affordable. Similarly, they refrained from telling mothers they could not eat certain things. Incorrect local beliefs were only addressed if they came up organically in conversation.

*P: So... this is a community that, I shouldn't say food is luxury, you know? But, it is a community where anything you have, it is what you should be grateful for. It is not like you have the money and then you can provide or give anything to yourself at any given time. It is what they have that they are able to provide and they are able to eat. So always encourage them that in eating your food, make sure you do the leafy food stuffs so that it gives you, yeah, the proteins and irons that they really want. So you don't actually say, "this is what you have you to, what you have to eat," because they cannot afford it. But you encourage them to eat more of the leaves since it is around in the community...(ID # 101, page 4)*

Providers utilized a number of strategies to make education delivery easier. Prenatal home visits to individual refugee families were common, as were post-partum ones during which they demonstrated nurturing childcare and monitored what parents were doing. Having caregivers show what they did, analyzing the home environment first, and then showing them what to do by

modeling tasks worked well. Convincing reluctant mothers to breastfeed was a tool occasionally employed to show how serious the matter of IYCF was. These prenatal and post-partum appointments often aided in compliance with teachings.

*...And they said they will not breastfeed. Seriously, we have to force her to breastfeed the child. And after some time when he left, we realize that she was not breastfeeding again. She was going to buy what we call, what we call, this canned formula for the child. (ID # 102, page 5)*

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*... So we have what we call the home visits, it's part of our nursing job that we go every week. We go house to house to visit mothers, breastfeeding mothers and giving the elderly, aged. So when we go, we try as much as possible to educate them to comply with what we tell them concerning the infant breastfeeding...And that one is very tedious work, but if we don't do that too, in the long run, they will come back with a lot of complaints. The child will be having diarrhea, because they don't breastfeed them well. And also some of them stop the breastfeeding and give other formula. So we try to from house to house to give more information on how to [breastfeed]...(ID # 102, page 6)*

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*P: ...that very woman, we forced her to breastfeed the baby...[]*

*I: When he went home?*

*P: When they went home, realized that they was going to buy other formula...[]*

*I: So... forced. What do you mean by that?*

*P: No as using force, but to... we found a way to convince, in a nice way, to convince her. But not as to force her... we convinced her. Yes...(ID # 102, page 8)*

At the health facilities' CWC, group and individual counseling and education often took an interactive format: providers discussed IYCF with parents, asked them a number of questions, and provided individualized counseling. Knowing a child's weight and age allowed providers to tailor the education that was given towards either exclusive breastfeeding or complementary feeding. It also informed whether or not they needed to bring in specialized providers or target suspected

cases of malnutrition. Maximum caregiver understanding was ensured by the presence of French/English translators at CWC and asking parents to repeat information back to healthcare providers. A bidirectional flow of knowledge between providers and refugees facilitated providers passing on IYCF strategies they learned from interacting with camp residents.

Despite the education facilitators described in the previous section, providers reported barriers experienced by caregivers translating the education received into improved IYCF practices.

Some women did not have the money to properly feed their infants.

*... they will say they don't have money. They don't have money. We just teach them...but they will, they will just challenge with you that [they have] no money, so what do you want them to do? Sometimes you have to sacrifice and give them money to teach them how to do it and afterwards you know that there is improvement in the child...(ID # 104, page 5)*

Some women did not understand the recommendations, which was compounded by grandparents, neighbors, and relatives influencing them with advice that was inconsistent with optimal breastfeeding and complementary feeding behaviors. Other women did not believe what they were taught, especially when it contradicted what they were told by relatives in their home country.

*...what the mothers are alleging is that back home, which is Cote d'Ivoire, they are told to breastfeed their, their children for one and half years. So some of them have that idea in their mind that the child is supposed to be breastfed for one and half years. So when you say, "No you are supposed to breastfeed your child till two years", it comes as a surprise to them. [UI] never heard it before. They don't know anyone who has practiced before. Their parents didn't do that. They don't have other relatives that have practiced that, so when you tell them, it sounds strange to them and they see it as something that is not possible: "I can't do it." So that's what...(ID # 105, page 19)*

A subset of mothers did not come to health facilities early enough in their pregnancies for prenatal care, while others who did come were in a rush and lacked the time to sit for education and counseling sessions. One provider noted misguided maternal fears about blood incompatibility as the reason why one mother would not abide by recommendations on how to breastfeed her child.

The language barrier between refugees and providers was an inhibiting factor when a translator was unavailable. Poverty was another significant issue as, according to the providers, it prevented malnourished mothers from making enough breastmilk to exclusively breastfeed, made it hard for families to buy recommended complementary foods, and forced mothers to wean early so they could work outside the home.

*P: ...some of the parents are not, don't have any source of livelihood, one, so because of that, for example, they have to leave and go and work. There are some parents that I have... They are supposed to do complementary feeding... a child, for example, who is one and half years or more than that will be left in the camp by the mother and then the mother goes out to go and work and then the child is there. So it means that the mother weans the child so that even when she's not around, they can still give the food without giving the breastmilk... another challenge too I have is most mothers are complaining that because they don't eat enough, they don't produce enough breastmilk so they don't have breastmilk in their breasts so they will not breastfeed... (ID # 105, page 6)*

Providers reported a number of observations about education and counseling delivery that were consistent across both camps. Although refugees were receptive to the instruction, they often did not open up about their traditional beliefs. Providers used observations about the physical space during home visits, knowledge of local misconceptions and beliefs, as well as what refugees were exposed to prior to arrival at the camp, to know what to emphasize in their teachings. At times, providers endorsed certain cultural beliefs such as leafy green vegetables being healthy. There were also instances when providers had to contradict beliefs, such as by telling refugees that colostrum is not dirty, that plantains are acceptable for pregnant women to eat, and that they can breastfeed for longer periods of time.

*I tell them when they bring up the, this, some of these issues, I tell them the right thing. What is supposed to be done. Or I look at their, the nutritional aspect or the scientific kind of part of it. So for example, I am supposed to eat plantain, so I look at what is in plantain. Is a pregnant woman supposed, what are, like what is there about plantain that a pregnant woman should eat. So I just read on it or some of them I have information, like*

*what they are made up of. So I just give them information and then debunk those, like, myths or those perceptions... (ID # 105, page 25)*

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*Yes, so sometimes they allow that, they say that "when I was a child, that's how my grandmother fed me, grandfather also fed me." They say all this but we make them understand that medicine has improved, so you must follow medicine, but not traditional medicine (ID # 106, page 10)*

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*I tell them it's no good. I tell them it's for the past time, because now we also encourage them to come to the hospital to take advice than sticking to their beliefs or culture, or tradition. (ID # 107, page 14)*

Providers relied heavily on the weight of the baby to influence advice they gave. Weighing cards aligned with WHO standards were a commonly used metric. Assessing children's weight and growth also showed improvements and problems in caregiver practice.

Healthcare providers (community health nurses, physician's assistants, volunteers) in the camps taught parents and others (e.g. extended family members) responsible for childcare about subjects such as hunger cues (licking the mouth) being part of responsive feeding. Some of these workers noted improvement in practices when caregivers returned to CWC for follow-ups. However, providers noted that refugees might have received different information about IYCF best practices from professionals in their home country prior to arriving in Ampain or Krisan, leading to confusion on the refugees' part about how to feed their infants and young children.

## External Influences

### *Healthcare Access:*

Ampain and Krisan residents would go to hospitals for more serious health conditions. One provider reported hospitals serving as sites of food distribution for the neediest children, most likely through a partnership with a local NGO. However, women were not always willing to attend their own appointments or bring sick children to healthcare facilities due to lack of money, so providers reported doing home visits to reach this population.

*P: No outside [health insurance] doesn't cover the scan, so they have to pay. The money they are using to pay, they don't have, so that person will not come to the facility. If you don't have medicine in the house, you are not also feeling well so that one, I have to send people to come and call you. So if the midwife is not there, me too, today for instance, I'm alone. I do this, I can also send somebody to the house and call you, no...(ID # 104, page 13)*

Women also chose not to go to their appointments if they knew their preferred provider was unavailable. One provider reported women staying home despite being ill in response to this.

### *Food Security Barriers:*

IYCF practices were influenced by financial concerns in the camp. Refugees with limited money could only eat what was affordable, leading them to give foods after weaning that were inappropriate for their children's stage of development. Some women who could not buy food due to poverty exclusively breastfed for longer than recommended rather than transitioning to complementary feeding at the right age. As an alternative to purchasing drinkable (bottled) water, caregivers boiled water because doing so was free of cost. In addition to being unable to feed their children, having limited quantities of food decreased the amount of breastmilk mothers produced because they themselves did not eat complete meals. This led them to want to limit the amount

breastmilk given to their child during each feeding session, even though it was not possible to do so. As a result of this, children only ate what was available, even if it was not what they needed.

*Support:*

Healthcare providers identified multiple sources of support within Ampain and Krisan for both themselves and the refugees living there. Friends taught caregivers how to feed their infants. Community leaders served as liaisons between healthcare providers and refugees, often acting as translators. By bringing cases to providers, they also facilitated the start of critical relationships between these healthcare workers and residents of the refugee camp. Community members such as neighbors and relatives helped caregivers by demonstrating food preparation or leading by example:

*P: ...I think [mothers learn to feed their child by looking] at what their neighbors are doing. Those who already had kids and sometimes what their relatives tell them. Maybe an auntie or grandmother: "This is how I did it my time, so do it this way."...(ID # 105, page 22)*

Providers were a major support system, delivering a wide range of services aimed at directly and indirectly improving caretaker ability to feed properly. Mostly targeted at mothers, these actions included monitoring a child's growth, giving money and food to needy families (often without expecting repayment), performing home visits, and educating about childcare and feeding. Healthcare providers showed general concern for the well-being of mothers and children by caring for women since pregnancy, providing financial assistance to pay for medical care, supporting them so they could rest, and attending to them even if they lacked insurance.

*P: [How I often I use] my money? Hmm. If and when they come, if I have, I will just give. If I don't have, I will just find ways and means to sort it out. Some people come, they don't have insurance. The child is also sick. Can you just stand there for the child to pass by? No! You have to take care of the person. I will take care of the person or [UI] I will come and see you. I will come and see you. One and two months the person will not come and see me. I will go there and also talk. I would have to what? Pay. Because if I don't*



*pay, my boss will question me to have to pay, but I will not tell the person anything. Oh, it's, the person will see me, we will talk, we will laugh, but I will not say anything because if you just tell the person, "Where is my money?", the person will not come to the facility again.*

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*P: Yeah, women, pregnant women and any client, they should come here and seek medical care from here. But some people when they come they say they don't have money. Some people will just, meet me at the roadside, "please, I don't have money. when I come will I pay for medicine?" Oh! When you come, if you don't have money, when you see, maybe I will use my money to pay so that you can, what? Seek healthcare. But if you sit in the house, no money, it really becomes [UI]. They will come to my house and call me...So our advice for people in the camp to come if you don't have money, [UI], if you don't, you just come and see me, [UI], see anybody here. You talk to the person. We are all human so if the person will help...(ID # 104, page 12)*

Lastly, nonprofit organizations provided important medical assistance, from telling parents when to take sick children to the hospital, to giving food for children and educating their caregivers about nutrition.

## Behaviors

### *Caregiver IYCF Practices:*

According to providers, there were a number of factors influencing caregiver IYCF practices. Family and friends often provided helpful tips. Amidst the extent of external advice and influence available to them, at the end of the day and as expected, caregivers made the final decisions about what to feed their children and some did not abide by recommended practices.

*P: ...we try to tell them that it is not good for you to be using that formula, but the child has to be on the breastmilk from the day one to six months without food or water...But you know, women, as we are, some of them, they will listen and do as you say, but some of them too, no matter what you do, they want to do their own thing. Yeah...(ID # 102, page 5)*

As a result, there was diversity in the kinds of breastfeeding feeding behaviors present in Ampain and Krisan. The duration and exact nature of a mother's breastfeeding practice varied among

individuals. This manifested in some mothers replacing breastmilk with fortified formula early on or declining to breastfeed altogether. Reasons for this included a desire to further their education, seeking the freedom to “move around” or feeling like they should not breastfeed because of being malnourished. In contrast, some babies were weaned after 12-18 months or when they began to talk.

Providers reported that other women inadvertently prevented their children from eating enough by switching breasts too quickly or not breastfeeding for long enough during each session. Providers reported caregivers stopping breastfeeding when they became pregnant again while others continued until their supply dried up. Complementary feeding practices also varied. Mothers sometimes gave children the same food as the rest of the family, while others would tone down the spiciness or give children whatever it was that they desired to eat.

#### *Family Roles:*

The interviews with the providers revealed that the burden of childcare consistently fell to women in Krisan and Ampain. Fathers were often the primary financial providers while mothers were the main caregivers making critical decisions about the kinds of foods given to babies and when to start complementary feeding. Grandmothers often taught young mothers how to feed. Because men within families were often working outside the camp, mothers had the power to step into the role of primary decision-maker regarding their children.

## Conceptual Model

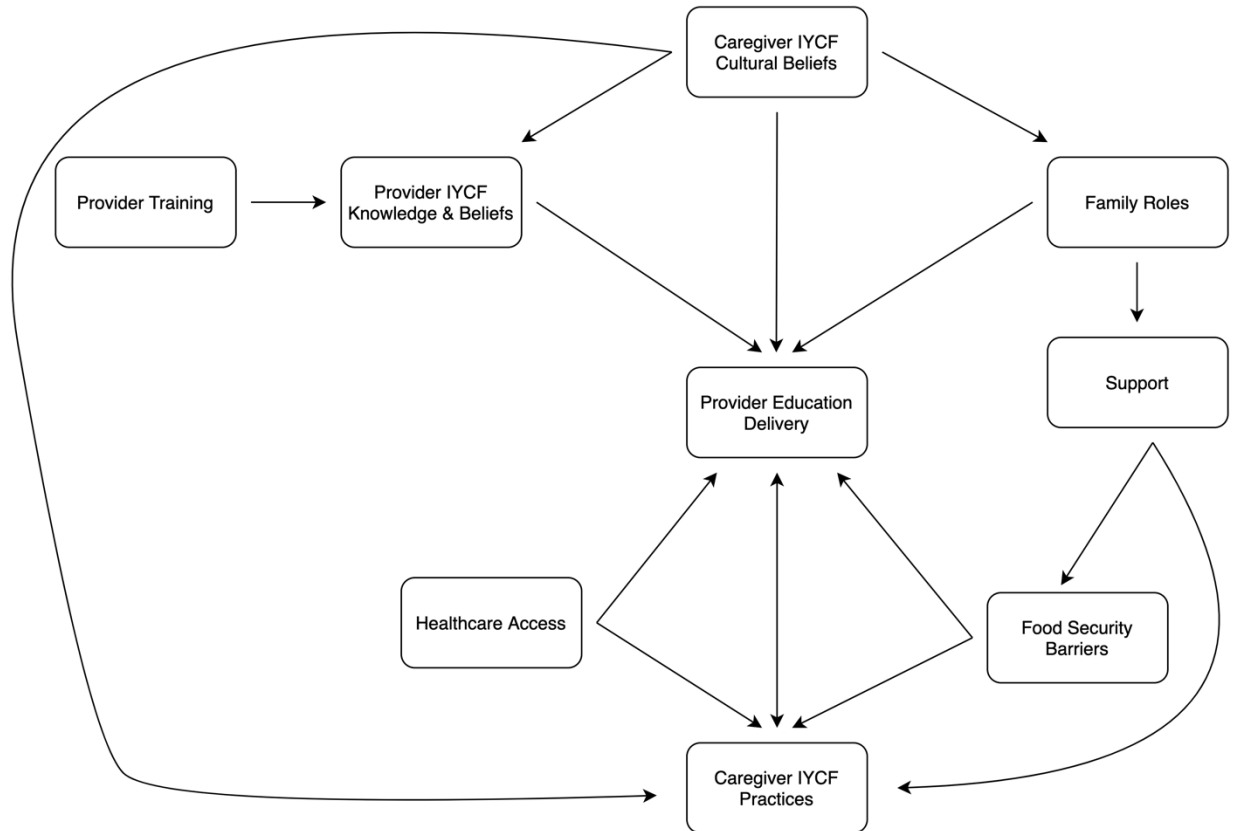


Figure 1. Conceptual model of the factors driving caregiver IYCF practices among refugees living in Ampain and Krisan, according to their healthcare providers.

These interviews gave rise to a pragmatic conceptual model that mapped the factors influencing caregiver IYCF practices among refugees of different nationalities living together in Krisan and Ampain. Caregiver IYCF cultural beliefs were a major driver of IYCF practices and are thus at the root of this conceptual model. They directly influenced caregiver decisions on what, when, and how to feed, but were also indirectly connected to them through two distinct pathways. In one pathway, beliefs held by mothers and other caregivers informed the roles family members performed. These consistently involved mothers being primarily responsible for childcare and fathers working outside the home as the main financial providers. The role of grandmothers and others in the extended family network was to support mothers by giving feeding and cooking

strategies. Providers were also supportive figures, providing education, counseling and financial assistance for food and medical needs. In the second pathway, cultural beliefs informed personal experiences of providers that complemented what was learned in school and during in-service lessons to form the full suite of provider knowledge and beliefs. Educators passed this knowledge on to women in the camps through education and counseling, thus influencing how they fed their infants and young children.

Caregiver IYCF practices and provider education delivery directly influenced each other in a bidirectional manner. During their lessons, healthcare providers responded to the IYCF-related behaviors exhibited by caregivers; information and skills discussed during education and counseling sessions determined how caregivers fed infants and young children. It is important to note that provider education delivery itself was a dynamic variable due to the number of factors feeding into it. Pre-service training for healthcare providers covered topics directly applicable to the kind of education and counseling needed in the camps. Family roles were directly related to provider education delivery: providers often tailored the content of their lessons to fit the target audience, with the division of labor within families frequently determining who was present at clinics and facilities to receive lessons. Refugees' access to healthcare directly influenced the nature of the education and counseling they received. It determined 1) whether or not they were present for lessons given at medical facilities located on and off camp grounds; 2) the topics healthcare providers covered; and 3) the strategies healthcare providers employed to reach certain residents. Lastly, food security barriers were immediate modulators of provider education delivery: healthcare providers engaged in education and counseling took into account refugees' variable ability to acquire food and were cognizant of the fact that food security can be a barrier to following their education and counseling suggestions.

In addition to caregiver IYCF beliefs and provider education delivery, healthcare access and food security were direct influences on caregiver IYCF practices. In times of need, caregivers could get food being distributed by non-governmental organizations at healthcare facilities. Food insecurity determined the kinds of food caregivers could give to children and impacted the breastfeeding of malnourished mothers.

## Discussion

### Summary of Findings

Healthcare providers had detailed knowledge—and sometimes opinions—about caregiver IYCF cultural beliefs among refugees living in Ampain and Krisan, though they were significantly less confident about the intricacies of beliefs hailing from areas other than West Africa. Only sometimes did healthcare providers take traditional beliefs into account when educating refugee caregivers about IYCF practices. In addition to provider perspectives on caregiver IYCF beliefs and practices, what also emerged from this study is that the IYCF cultural beliefs held by providers themselves were at times important in driving what they thought to be true, which in turn influenced the education and counseling they delivered.

From the healthcare provider perspective, beliefs relating to food were prevalent in Ampain and Krisan. Mothers saw food as more than just sustenance and provided some fruits and vegetables to their children for their healing properties. Providers strongly encouraged a diverse diet with foods from all major groups (and low in salt/sugar) to promote wellbeing and meet the nutritional needs of pregnant women, lactating mothers, and infant/young children. There was particular emphasis on eating leaves for blood as a means of encouraging high iron foods in a way populations would find acceptable. Beliefs also differed with national identity, with the only overlap occurring between people from Ghana and Cote d'Ivoire.

Multiple cultural beliefs around breastfeeding and its consequences coexisted in the camps. While some prevented mothers from breastfeeding completely, others influenced them to introduce solid foods early. Women who decided to breastfeed followed traditional practices when trying to boost milk production. The varying degrees of adherence to exclusive breastfeeding recommendations on the part of camp residents often contrasted with the breastfeeding knowledge of providers. This phenomenon has been observed in UNCHR-run refugee camps populated by Somali people in Kenya (Gee et al., 2019). Healthcare providers involved in this study were aligned with WHO recommendations around the timing and benefits of complementary feeding and exclusive breastfeeding, leading them to believe that deviations from this were improper and incorrect, unless fully unavoidable. At times, providers explained why certain food-related cultural beliefs should be followed using nutrition facts.

Training received by providers was an important contributor to their IYCF knowledge. Healthcare providers received some pre-service training as well as informal in-service training through hands-on exposure to topics directly applicable to the promotion of proper IYCF practices, though not specifically for refugee settings. Providers' knowledge appeared to also reflect their own cultures' belief systems and their own experiences as caregivers of young children in their private lives. Even though only one provider spoke about this directly, this combination of information sources influenced the kind of education and counseling found in Ampain and Krisan.

Caregiver IYCF education was delivered to refugees in a number of locations within the camps to maximize reach to mothers, who were the primary targets. Supporting breastfeeding and complementary feeding efforts through education and counseling is a WHO/UNICEF approved strategy that has been effective among Syrian refugees in Jordan and Lebanon, in addition to Karen/Burmese refugees in Thailand (World Health Organisation, 2003) (Alsamman, n.d.)

(Shaker-Berbari et al., 2018) (A. Hashmi et al., 2019). Ghanaian women with intentions to exclusively breastfeed at delivery were significantly more likely to do so after birth, so reaching women during the pre-natal period in Ampain and Krisan was paramount (Aidam et al., 2005). Fathers and members of the extended family network were included in educational sessions when they were present because they took part in caregiving. Educational topics covered included maternal health, diet composition during prenatal and lactating periods to support healthy babies, breastfeeding, complementary feeding, and food safety. Although providers employed a number of strategies to facilitate uptake, barriers to following their lessons could not always be overcome. Comparing a child's weight to WHO standards was a common means of determining what feeding advice to give; providers interpreted weight fluctuations as reflections of their quality of care. Parents were also advised on child feeding practices by friends and family members. This advice was highly influential in their IYCF decisions, supporting the importance of including them in the education and counseling sessions, whenever possible.

Financial challenges and subsequent food insecurity are a global issue for refugees (Doocy et al., 2011) (Alloush et al., 2017). Healthcare providers working in Ampain and Krisan identified specific economic concerns as a major determinant of IYCF practices. Refugees visited hospitals outside the camps during times of severe illness or when they needed food but lack of money to pay for insurance and/or procedures inhibited women from seeking services for their children at healthcare facilities. Providers did home visits instead. Refugees' ability to engage in age-appropriate feeding practices was determined by the amount of money available to buy proper food. Cognizant of these financial strains, providers avoided speaking about specific foods families should buy. Poor mothers who themselves were malnourished produced little breastmilk, forcing them to limit the amount they fed children during any given session. Other mothers who

worked outside the home to alleviate financial pressures necessarily deviated from WHO feeding recommendations. As a result, children living in Ampain and Krisan ate what was available, even if not developmentally appropriate.

Providers, friends, and family members utilized overlapping external supports—teaching how to feed, monitoring growth, providing food and financial support—to intervene comprehensively within the complex system. Across Latin America, Africa, and Asia, grandmothers and other senior women in communities play a central role in advising caregivers about the nutrition and health of children, pregnant mothers, and lactating women (Aubel, 2012). Community leaders bridged the gap between providers and residents while staff from a local non-profit organization were responsible for medical attention.

Caregivers, assisted by the support given, reportedly sorted through all the advice received during formal education sessions and from a lifetime of exposure to culture beliefs to make final decisions about how to feed. Gendered roles within families empowered women to make most, if not all, IYCF choices with minimal pushback from husbands and other male influences, who were expected to be away working. At times, they purposefully deviated from what they learned from educators. As a result, there were many variations on breastfeeding and complementary feeding practices.

Our conceptual model maps direct and indirect factors that influence how refugees feed their children and characterizes the relationships between these variables. Factors were organized into four overarching themes: beliefs (provider and cultural), education (provider and refugees), external influences (support, food security barriers, healthcare access), and behaviors (family roles, caregiver IYCF practices). Individual behaviors are thus the result of the constantly changing



interplay between personal agency, structural context, and social determinants (Short & Mollborn, 2015).

## Conclusions

Two things become immediately clear from the conceptual model derived from the health providers' perspective. First is that cultural beliefs are at the root of many caregiver IYCF practices but are not the only determining influence. Refugees' financial condition surfaced as an important mediator of IYCF and nutrition-related behavior. Furthermore, the factors that drive IYCF decisions interact uniquely across individuals within a population, suggesting that it is a highly variable outcome. Two refugee women coming from the same country and with the same socioeconomic status living in the same camp, hence presumably exposed to similar external forces, will not necessarily feed their children in identical manners.

Secondly, IYCF cultural beliefs influenced both providers and camp residents. In some instances, providers recognized the importance of select beliefs to refugees and adapted to the language that the caregivers used. Couching their lessons in language that camp residents understood and encouraging them to consume foods with high nutritional value that they were already familiar with appeared to have been an effective education and counseling strategy. For other practices, there was a clear need to provide, emphasize and intensify education and counseling that supported infant feeding recommendations even when they contradicted entrenched beliefs. When educators and refugees were culturally misaligned, as was sometimes the case in Ampain and Krisan (because many of the providers were Ghanaian), providers noticed a disconnect between the education and counseling they delivered and what caregivers actually practiced in their households. While this disconnect is explained at least in part by cultural beliefs, it is feasible to predict that there are additional contributing factors.

The consequences of suboptimal IYCF decisions, such as not breastfeeding or improper initiation of complementary feeding, could have serious health implications for children in the camp, who are already facing higher odds of mortality and morbidity before the age of 5. Some healthcare providers were unable to articulate what exactly refugees believed, which was another barrier preventing them from optimally delivering IYCF education. This contrasts with the fact that other providers were able to explain beliefs and then state whether or not they supported them. However, these differences also created opportunities for cross-cultural learning and subsequent diffusion of new ideas and practices that could have health promoting effects.

There is a need for culturally sensitive nutrition education initiatives in Ampain and Krisan that account for the beliefs of educators and target populations. Simply delivering basic facts is not always appropriate for these settings—in which multiple cultures exist simultaneously as independent entities—and will likely be ineffective in supporting pedagogical efforts. Since providers only address these beliefs in counseling sessions after they are raised by caregivers, this change alone may not be sufficient.

Furthermore, the IYCF context of the host country—Ghana, in this case—can influence provider beliefs as well as the structural environment that determines what is happening in the camps. Ghana’s national IYCF strategy includes enforcement of the WHO International Code of Marketing of Breast-milk Substitutes and support for baby-friendly hospitals, both of which improve breastfeeding outcomes (Pérez-Escamilla et al., 2016). Despite this, the country has not achieved optimal breastfeeding goals: only 52% of Ghanaian children were exclusively breastfed from 0-5 months old and 37.4% were breastfed during the 20-23 month old age period (*Ghana Demographic and Health Survey 2014*, n.d.) (Victora et al., 2016). Ghanaian infants are commonly introduced to porridges, liquids (e.g., cow’s milk and water), and traditional solid foods

in the first six months of life (Aidam et al., 2005). It is possible that providers might view these practices as more acceptable and carry these beliefs with them as they interact with refugees living in camps.

Providers gave contradictory responses about multiple topics. Due to poverty, they felt it was not fair to recommend foods that might be unaffordable for some families; however, this conflicted with the times when providers advised foods without explicitly mentioning their price. One provider said that no foods could give children disease but went on to discuss how eating well prevented them from contracting sicknesses. One possible explanation is discomfort with standardizing food recommendations across the entire heterogeneous camp population in a way that might not be well-received by residents. A major task in refugee settings, then, is to strike a balance between the need to ensure infant health and the imperative to respect refugee cultural autonomy and expression.

Integrating nutrition themes and IYCF concepts within larger systems of support and healthcare delivery was common among the professionals interviewed in Ampain and Krisan. Providing education and counseling while responding to competing interests and meeting people physically where they were helped educators reach an overwhelmed population. Examples of this included paying refugees' medical fees to ensure camp residents attended medical appointments where they would receive education, giving advice based on what was observed during home visits and distributing food (or money to purchase food). Healthcare providers involved in this study remained aware of external pressures such as lack of money for food or cultural beliefs that strongly determined refugee ability to abide by recommendations, indicating that provider training should include background information about the different groups living on camp grounds and strategies for adapting topics in response to specific population needs. Considering that five out

of six children in low- and middle-income countries do not meet minimum meal frequency and dietary diversity standards—which significantly increases their risk of malnutrition—this work is directly responding to a clear global health issue (*UNICEF\_Programming\_Guidance\_Complementary\_Feeding\_2020\_Portrait\_FINAL.Pdf*, n.d.).

A recurring theme in interviews was the versatility of food for nutritional, medicinal, and other assorted purposes, which informed what caregivers gave to children, as well as what pregnant women and lactating mothers ate themselves. This indicates the centrality of food within cultures, even as individuals were experiencing food insecurity and displacement from familiar foods. It also suggests that in the resource-limited environment of the camps, caregivers are forced to look to food to fill multiple roles. Some providers stated that refugee women from outside the immediate West African region did not know which foods to eat while lactating; an alternate interpretation of this phenomenon is that they are not aware of what is available locally that could replace the foods they would otherwise consume for that purpose.

### Recommendations and Implications for Future Research

As far as we know, this is the first study that explicitly explores the role cultural beliefs and other factors play in infant and young child feeding education and practices among refugees living in Ghana. The results of this study can be used to inform provider training in IYCF education and counseling within refugee camps in the Western Region of Ghana. The short-term goal of future trainings would remain as the promotion of globally accepted feeding recommendations to ensure the healthy development of vulnerable children in Ampain and Krisan by improving health and nutrition outcomes; the long-term aim would be to prevent the onset of health challenges that persist throughout the life-course. Subsequent exploration into the

feasibility and acceptability of a comprehensive public health intervention that builds upon the grassroots work of healthcare providers involved in education and counseling in this region is pertinent. One recommendation is to consistently address harmful cultural beliefs (e.g. those that prevent a mother from breastfeeding) beginning in pregnancy with both with the mother and family to ensure that everyone receives consistent messaging and can induce behavior changes early. The next step would be to contextualize their feeding instructions in relation to cultural beliefs that are health promoting or can be adapted slightly to make them so.

Political and humanitarian instability during the first twenty years of the 21<sup>st</sup> century has triggered a global proliferation of refugee camps. There is a need to examine the role of cultural beliefs in determining child nutrition outcomes in UNHCR-run settlements across Africa, Europe, the Middle East, and Southeast Asia. Given that approximately 60% of refugees and 80% of internally displaced persons reside in established cities (sometimes as part of unofficial, self-organized settlements), efforts should be made to investigate this among these communities as well (*The Power of Cities - UNHCR Innovation*, n.d.). In addition to the immediate benefit of health promotion at the individual level, this work will deepen the knowledge about the theoretical intersection of public health and social science concepts. The practical applications of this are not limited to maternal and child health, as cultural beliefs can impact everyone in a population.

Fully conceptualizing IYCF practices in refugee populations (both urban and rural) as the result of dynamic interactions is the first step towards crafting effective and culturally acceptable nutrition programs aimed at encouraging the health of displaced young people. Understanding factors that contribute to the behaviors of a group living at the nexus of a complex web of health pressures can assist medical and public health professionals in tackling their immediate needs in the context of infant and young child feeding. Other research should concern the creation and

dissemination of IYCF toolkits containing best practices for addressing the unique challenges faced by refugee populations to health systems that interface with large populations of these patients.

### Strengths and Limitations

This study's strength lies in its contribution to the literature about how public health outcomes are strongly influenced by the interplay of economic, social, and cultural variables among refugee populations. It also provides additional insight from the health provider perspective into the full suite of barriers to and facilitators of following standardized IYCF recommendations experienced by refugees. While concrete issues around finances and access (e.g. earning enough money to purchase foods and having the means to reach a market) are well known, there is less information about intangible factors such as the cultural environment. As the literature in this area is scarce and refugees are a vulnerable population, it is important for global health decision makers to understand what can be done to improve the health of their infants and young children. Findings from this study will aid the efforts of national and local public health departments, and refugee relief organizations as they conduct nutrition promotion activities.

There are limitations that merit acknowledgement. This qualitative study was not designed to yield any statements of causality. Due to differences in population composition, the relationship between culture, external influences, and behaviors that drive IYCF behaviors will be unique to each refugee community. While there were striking similarities and consistencies linking the perspectives of healthcare providers working in Ampain and Krisan, the two camps are separate entities and it is possible that a different set of participants would have reported important distinctions between the two. The specific findings detailed may not be generalizable to settings

outside of the West African region; however, the conceptual framework could be tested elsewhere. Furthermore, this study is based on a small number of interviews with healthcare providers; it limited interview subjects to providers without input from caregivers themselves. Although saturation was reached with interview themes, suggesting that the information collected was representative of what was true at the time of data collection, it is still possible that additional concepts would have emerged with a larger sample size. Outside of the refugee camp, in a more urban setting, for example, different cultural barriers and facilitators might exist that were not explored in this study. There is also the chance that healthcare providers working with refugees living in cities might report additional factors explaining IYCF caregivers' beliefs and practices because of the increased exposure to and interactions with native residents of the host country.

## Appendix

### **Semi-Structured Interviews: Healthcare Providers**

#### **PROVIDER BACKGROUND AND INTERACTION WITH PARENTS**

- Could you please describe what training, if any, you received in infant and child health/nutrition? (this training can be during your schooling as well as after schooling while you have been working)
- Could you please tell me a little bit about your current work in infant and young child feeding?
  - Could you please describe the role you play in the provision of health or nutrition services to the refugees attending your health facility?
- How do you typically provide infant and young child feeding counseling (general education, individual counseling, both)?
  - Could you please tell me about the last time you provided education or counseling on infant and young child feeding?
- Who is your target audience for child feeding education or counseling on the camp (i.e. who do you counsel)?
  - How do you decide who to counsel when working with families?
- How, if at all, do the parents interact with you while receiving the during infant nutrition education or counseling?
  - How, if at all, does the information provided shape how they actually feed their children?
- What are some of the things that change the information you give to the caregiver?
  - How, if at all, does the weight of the baby shape your advice?
- What are some challenges you face to get parents to practice your feeding recommendations?
  - Could you please describe a specific time when it was difficult to get the parents to practice your recommendations?

#### **ADVICE PROVIDERS GIVE**

- How, if at all, do you interact with pregnant mothers with respect to nutrition education?
  - Can you please describe the typical advice you give mothers about their nutrition while they are pregnant?
  - How, if at all, do you believe that a mother's diet during pregnancy improves a baby's health?
- How, if at all, do you educate mothers on foods they should or should not eat?
  - Could you please give me an example of an interaction you had with a mother about her diet?
  - Can you tell me a bit about foods you tell mothers are important for them to eat and why?
  - Can you tell me about foods that you tell mothers are not good for them to eat and why?
- Can you please describe the typical advice you give mothers about their nutrition when they are breastfeeding?
  - Could you tell me a bit about factors that improve breastmilk quality?



- How, if at all, do certain foods or beverages improve quality?
- How, if at all, do certain foods or beverages lessen quality?
- Could you please describe the typical advice you give parents about how to feed their children?
  - Could you please give an example about a time when you advised a mother to feed differently than your usual advice?
- Could you describe the typical advice you give about when to breastfeed their child?
- How do you give advice about when to introduce food and what types of food to complementary feed?
  - Are there certain foods that you advise parents to feed their children? Why?
  - How, if at all, do certain foods improve growth and development of the baby?
  - How, if at all, do some foods prevent disease?
  - Are there certain foods that you advise parents not to feed their children? Why?
  - How, if at all, do certain foods cause diseases?
- How, if at all, do you speak with the mother about giving her child water?

## **FAMILY AND CULTURAL BELIEFS**

- What, if at all, do families talk about regarding what the mother and baby should eat?
  - How do you perceive women's ability to make decisions about what and how to feed their infants and young children?
  - How, if at all, would you describe women's ability to seek health care?
  - How do you perceive fathers' ability to make decisions about what and how to feed their infants and young children?
  - How, if at all, does country of origin influence the way families make decisions?
- Who are the primary people that influence how mothers and fathers feed their child?
  - What do these people say to mothers and fathers on how to feed their infants and young children?
- Who are the primary people that influence how refugee mothers and fathers feed their children?
  - What do these people say to refugee mothers and fathers on how to feed their infants and young children?
- What are some of the things that informs caregivers decisions about how to feed their infants and young children?
- What, if any, differences in infant and young child feeding beliefs have you noticed when working with the refugee population compared to the Ghanaian population?
  - What, if any, similarities in infant and young child feeding beliefs have you noticed when working with the refugee population compared to the Ghanaian population?
  - Could you please describe any similarities in practices of child feeding between refugees and Ghanaians?
  - Could you please describe any differences in practices of child feeding between refugees and Ghanaians?
- What are traditional beliefs in community about IYCF?
  - How, if at all, are these beliefs different in the refugee community?

- Could you tell me a bit about how you think that the country people are originally from may shape how they feed their children?
- What are some of the beliefs present among refugees about foods and drinks that give blood?
- Can you describe a bit about people's beliefs regarding certain foods' ability to treat diseases?
  - a. How, if at all, are these beliefs different in the refugee community?
- According to traditional beliefs, what is happening to the mother's body during pregnancy and breastfeeding? How is breastmilk produced by the body?
  - How, if at all, are these beliefs different in the refugee community?
- What are some of the beliefs and practices the mothers have themselves about what and how to feed infant and young children?
  - How, if at all, are these beliefs different among refugees?
  - Can you describe a time when a parent brought up traditional beliefs during your nutrition education or counseling session?
  - Could you describe your feelings on these beliefs and practices?
  - How, if at all, does one's nationality shape these beliefs?
  - How, if at all, do you address these beliefs in your education?
- Could you please describe how you think the mother learns to feed their child?
  - How, if at all, does one's nationality shape this practice?
  - Could you describe how knowledge is transferred here?
- How, if at all, do you incorporate local knowledge into the advice you give?
  - How, if at all, does it change the way you deliver advice?
  - Can you describe if there are any specific feeding recommendations you change because of local beliefs of the refugee populations?
  - How, if at all, do you discuss these cultural traditions/practices with your patients?
- How would you describe your relationship with community leaders regarding IYCF education?

**Is there anything else you think that we should know about cultural beliefs or traditions and infant and young child feeding?**

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