Examining factors associated with the rise in stunting levels in Lower Egypt in comparison to Upper Egypt

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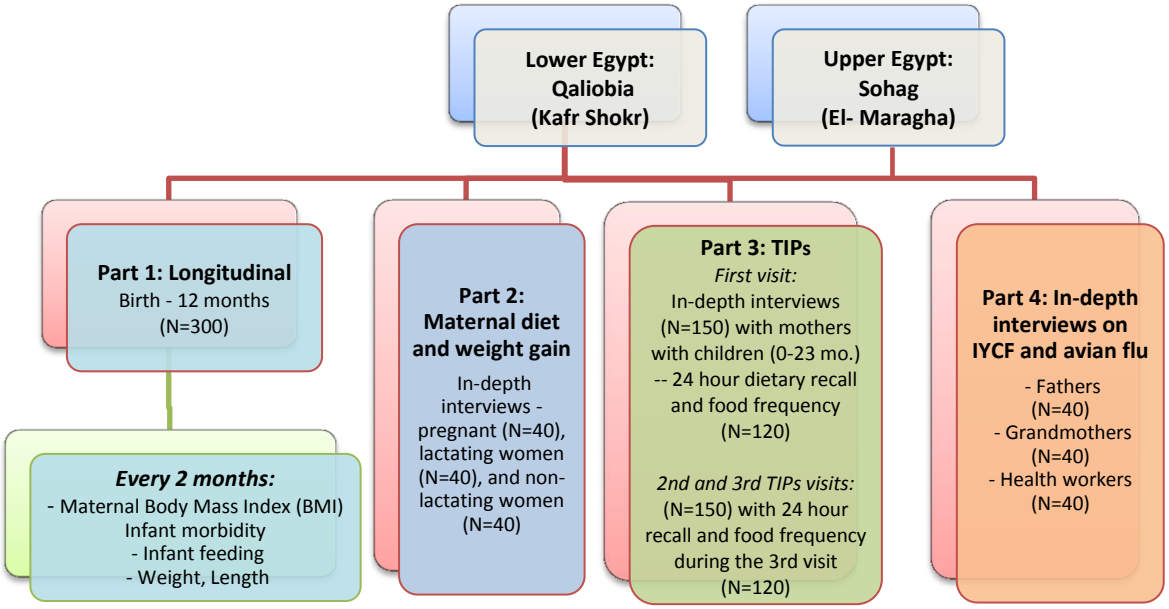
MCHIP is leading a study examining factors associated with the rise in stunting in Lower Egypt compared to Upper Egypt between 2005 and 2008. The stunting study will help the Smart project tailor nutrition messages to the local context, as well as provide information on why stunting rates increased in Upper versus Lower Egypt, providing a basis for further nutrition programing in the region. The study is divided into four different parts to represent various data collection time points and methodologies used during the course of the study, as shown in the following figure and described in detail below.



Characterizing weight and length[1] over time in both areas of Egypt is necessary to provide an understanding of changes in growth that accompany infant feeding practices and morbidity in areas with different levels of stunting. The relationship between weight gain and length and how weight loss translates into stunting is not well documented globally. Determining this

[1] In children younger than two years of age, length, instead of height, is collected.

relationship will be an important output of the study and will help in further targeting programs in Egypt and in other countries where stunting is prevalent.

Part 1: Longitudinal, prospective data collection tracking growth in the first year of life

In the first part of the study, which is composed of longitudinal prospective data collection, pregnant mothers in their 8th and 9th months of pregnancy in MCHIP/Smart project areas were recruited by data collectors from Sohag (N=150) and Qaliobia (N=150). Oral consent for mothers and their children to participate in the study was obtained from both pregnant mothers and their husbands, given the long duration of follow-up for children during the first year of life. Enrollment took place over two months until 300 women were enrolled. Children's weights and lengths were measured within two days of birth in a home visit by data collectors accompanied by Smart community health workers (CHWs) and thereafter during routine growth monitoring at Community Development Associations (CDAs). The study will track children's growth every two months after birth until the child is 12 months of age[2]. In addition, associated information is collected that will help in characterizing length at birth, losses in weight, and declining height/length velocity, including infant illnesses, quality and duration of childhood sleep, infant feeding practices, family planning, and maternal autonomy and decision-making.

We also collect data on factors well-known to influence infant feeding and care practices in peer-reviewed literature and by program implementers, including mother's age, marital status, maternal educational level, reproductive indicators (e.g., parity, birth spacing), residence, postpartum maternal body mass index (BMI) taken eight weeks postpartum (after delivery of her child), as well as postpartum weight gain. As mentioned above, this study will determine how weight loss or decreased velocity translates into deficits in length and the trajectory of stunting in children in the first year of life. Data collection is integrated into SMART project routine monitoring, enrollment began in February 2013 and data collection is ongoing until June 2014.

Part 2: In-Depth Interviews on maternal diet and weight gain

For the second part of the study, consisting of in-depth interviews on maternal diet and weight gain, pregnant mothers (N=40) were asked to discuss cultural norms related to foods eaten during their current pregnancy and their perceptions regarding weight gain during pregnancy. Lactating and non-lactating mothers (N=40) were asked to discuss cultural norms related to foods eaten during lactation, weight gain during pregnancy, postpartum family planning and perceptions of breastfeeding as a means to prevent/space births. Data collection was completed in March 2013, and analyses are ongoing.

[2] Follow-up of children for the full 12 months of life is contingent on extension of the Smart project and associated funding for the study.

Part 3: TIPs, in-depth interviews on IYCF practices, 24-hour recall and food frequency, and observations of feeding as the basis for recommended practices for women to try

The third and fourth parts of the study, Trials for Improved Practices (TIPs)[3] (Part 3) and in-depth interviews with husband, grandmother, and health workers (Part 4), are being conducted in collaboration with MCHIP Smart Project and local investigators- Dr. Sohair Mehanna, American University in Cairo (AUC)/Social Research Center, and Dr. Gulsen Saleh, the Smart project nutritionist with a team of nutritionists affiliated with the National Nutrition Institute (NNI) of Egypt. The research team, composed of nutritionists and social scientists, were trained to conduct TIPs which uses a number of different methods including in-depth interviews, household observations, 24-hour recalls, and food frequency questions[4]. Nutrient intake of complementary foods is being computed using Egyptian food consumption tables provided by the National Nutrition Institute of Egypt, which is comprised of both raw and cooked foods, as well as a database of all recipes used in Egypt.

Consisting of three visits with the mother, TIPs is a consultative research method that determines current infant and young child feeding (IYCF) practice(s), asks mothers to try a practice they are not currently using, and follows-up with them one week later to determine if they were able to use the practice, what they thought of the practice, and if they would continue to use it. The methodology identifies barriers, solutions to the barriers, and facilitating factors to optimal infant feeding. In the stunting study, AUC and NNI teams work together on collecting diet (24-hour recall, food frequency) and behavioral information (in-depth interviews, direct observations of feeding) from 75 mothers with children younger than 24 months of age in one site each in both Upper and Lower Egypt (N=150). Children are stratified by age groups, based on different known milestones for infant feeding.

In the first TIPs visit, the mother is interviewed about how and what she is feeding her child and why she is using these practices. In addition, she is asked about decision-making in the household, where she receives information about infant feeding, who cares for her child when she has to leave the house and other questions that inform how, what, and why the child is fed. In the second TIPs visit, the analyses of information collected during the first TIPs visits is used to recommend new practices and recipes for the mothers to choose from and try. For example, in the pilot for TIPs, which took place in November 2012, to address the high consumption of junk food, such as chips and Twinkies, by young children, nutritionists and social scientists discussed with mothers how to incorporate seasonal fruits or dates/date bars instead of junk food to ensure healthy growth and development of their children. Mothers were also given locally available, practical ways to improve quantity, quality, and frequency of consumption of nutrient-rich foods. For example, one mother was still exclusively breastfeeding her 15 month old child and had not given the child any solid foods, which should have been introduced at 6 months, while she continued to breastfeed. This mother was asked to give the baby mashed fava beans with rice or potatoes and a little oil or wheat flour with pounded lentils mixed with orange juice or milk, three times a day, and snacks of seasonal fruits. Mothers were very

[3] Based on product research and developed for use in infant feeding by the Manoff Group.
[4] Questions about complementary feeding will be in a subset of 120 mothers with children 6-23 months.

interested in the information they were receiving and wanted the nutritionist to write it down so they could remember it and show it to their doctors.

During the third TIPs visit, the team returned one week later to visit mothers to see how they did with the tailored practices they had agreed to try. For example, in the case of the mother during the pilot who was only breastfeeding and asked to add food to her child's diet, the mother introduced seasonal fruits to her child and started giving the child local complementary foods three times a day, as recommended above. The mother told the team that she would continue with this new practice because she now knows it's good for her child's growth and development to eat more and a variety of foods.

To augment the information collected in part 4 about the avian flu outbreak, mothers who had young children in 2006 were asked a few questions regarding if and how they feel the avian flu outbreak from 2006 has impacted their ability to care for and feed their children, according to local poultry/egg production and supply, by asking what foods they fed their children, and how and if their supply of poultry and eggs were affected. Data collection for TIPs was completed in March 2013. Analyses are ongoing.

Part 4: In-depth interviews on IYCF and avian flu with husbands, grandmothers, and health workers

In the fourth part of the study, in-depth interviews on IYCF and avian flu, fathers (N=40) and grandmothers (N=40) in SMART project areas were interviewed to gain a better understanding of how they care for, feed, and/or make decisions regarding child feeding in the home. In addition, in-depth interviews were conducted with CDA health workers (N=40) in Smart project areas to gain an understanding regarding their knowledge and perceptions of IYCF practices and stunting. Oral consent was obtained from fathers, grandmothers and health workers. Information on the impact of the avian bird flu on infant feeding practices and food availability during and since the outbreak, in comparison to how households are feeding children presently in Lower Egypt, was also be obtained from fathers and grandmothers, as well as perceptions of health workers on the avian flu and how it has impacted their communities, child feeding, and growth. Data collection was completed in March 2013 (Part 3). Analyses are ongoing.

For more information, contact Dr. Justine Kavle at jkavle@path.org. Study updates will be available periodically on www.mchip.net.