

# Adolescent fertility and social networks in rural Honduras

## Background

Maternity during adolescence has been associated with a wide array of subsequent physical and mental health problems, as well as enduring socioeconomic issues (1-3). High adolescent fertility rates are a seemingly intractable problem in Latin America. Once girls become mothers, disadvantage is entrenched, and is eventually passed on to their own daughters. Within that context, Honduras has one of the highest rates of adolescent fertility (AF) in the region with 24% of girls between the ages of 15-19 either a mother or pregnant at any given time period, according to data from the 2011-2012 DHS(4).

## Data

This study uses full population census data from the western municipalities of the largely rural Copán *departamento* of Honduras to quantify the extent of adolescent parenthood, for both girls and boys. Data were collected as part of a Bill and Melinda Gates Foundation funded project to understand the social network predictors of a maternal and neonatal health intervention in this area. As part of the baseline data collection, surveys were administered to all inhabitants over the age of 14 in 176 villages, with questions including *comprehensive social network measures*, attitudes and social norms around adolescent fertility, reproductive health history, and relevant health behaviors.

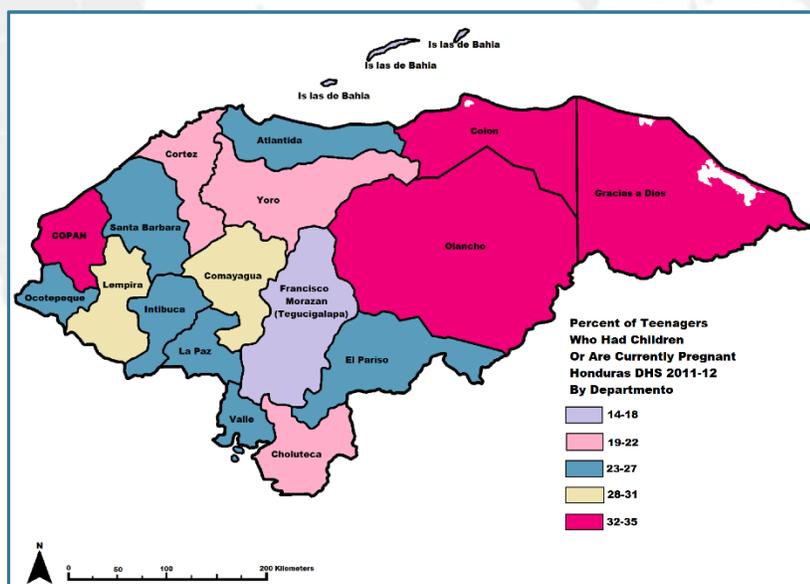
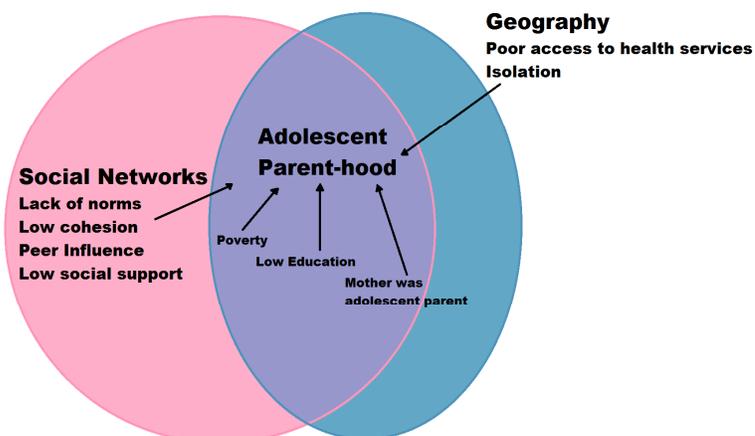


Figure 1. Spatial Variability in Adolescent Maternity, Honduras (DHS 2011-12)

Figure 2: Conceptual Framework

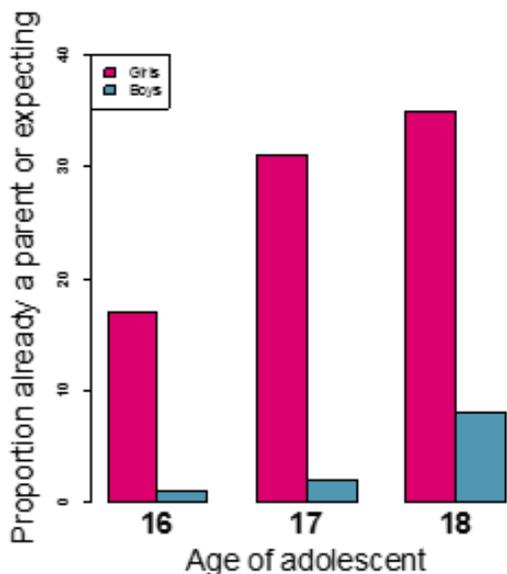


## Study Aims

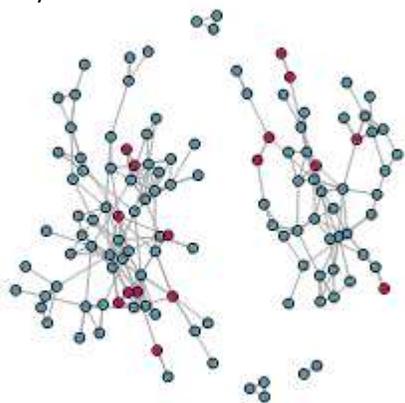
- 1.) Determine the distribution as well as the social and demographic determinants of adolescent fertility (AF) for both girls and boys on a complete population within 176 villages in rural Honduras.
- 2.) Assess the spatial and social networks determinants of adolescent fertility.
- 3.) Assess the utility of the men’s participation intervention on an adolescent boy’s chance of becoming a father.

- 1.) Sagili H, Pramya N, Prabhu K, Mascarenhas M, Rani PR. Are teenage pregnancies at high risk? A comparison study in a developing country. Archives of gynecology and obstetrics 2012;285(3):573-577.
- 2.) Chen X-K, Wen SW, Fleming N, Demissie K, Rhoads GG, Walker M. Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study. International journal of epidemiology 2007;36(2):368-373.
- 3.) Ganchimeg T, Ota E, Morisaki N, Laopaiboon M, Lumbiganon P, Zhang J, et al. Pregnancy and childbirth outcomes among adolescent mothers: a World Health Organization multicountry study. BJOG: An International Journal of Obstetrics & Gynaecology 2014;121:40-48.
- 4.) USAID. Statcompiler In. <http://beta.statcompiler.com/>; 2016

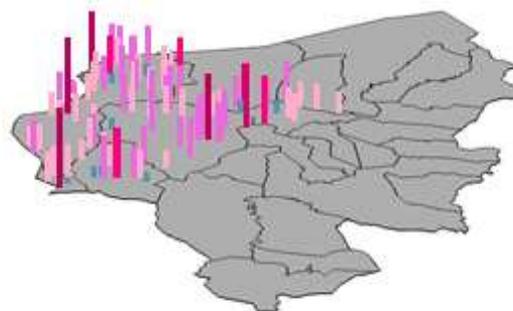
Preliminary results using data from 117 villages



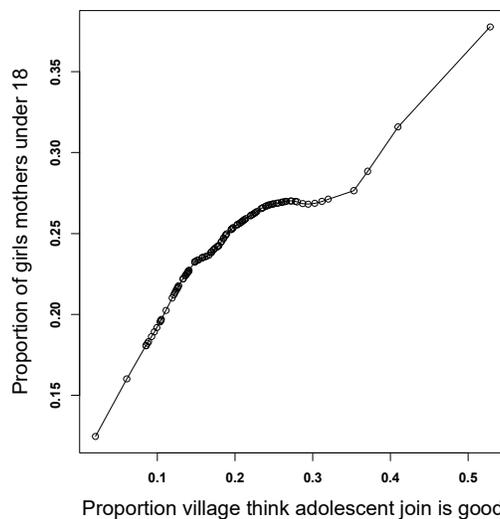
**Figure 3.** Almost ½ of the girls in our sample population were mothers or mothers to be by the age of 18. For boys in this population, adolescent parenthood was comparatively rare.



**Figure 5.** Initial analyses show that socially connected women are similar in adolescent birth outcomes. Here pink nodes had a birth as an adolescent. Lines represent social ties. Note the clusters of pink nodes.



**Figure 4.** Adolescent motherhood for girls shows significant geographic variability, suggesting that environmental and social normative conditions might be impacting girls' behaviors.



**Figure 6.** Village norms around adolescent partnership and fertility are predictive of adolescent fertility at the village level.

Innovations and policy implications

- 1.) Using social network analysis in conjunction with spatial and social normative measures to develop a contextual understanding of adolescent fertility in Latin America
- 2.) Complete data, including social network measures on an adolescent and adult population in 176 villages
- 3.) Comprehensive data on men's behaviors, attitudes, and normative beliefs.
- 4.) Can inform the development of crucial interventions to help curb the trend of adolescent fertility in these regions.