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The gender composition of twins and its influence on treatment seeking and protective health behaviors in India

Extended Abstract

This study is designed to examine differences in treatment seeking behavior among parents of twins in India. It will look at how the gender composition of twins influences parent's decisions on immunizations, treatment seeking behavior for illnesses such as diarrhea, access of health care centers for health care needs, and the duration of breastfeeding and the age at which supplemental food is introduced. This study will look at morbidity and mortality outcomes based on these behaviors, and determine the role that gender plays in the morbidity and mortality of twins in India. Because we know that twins have a higher morbidity and mortality rate, just by virtue of being a twin, and that early health behavior can have long lasting effects of the health of twins, it is important to understand the role that gender plays in those early health behaviors.

All twin outcomes—boy-boy twins, girl-girl twins, and boy-girl twins—will be examined using these parameters. The study is particularly interested in boy-girl twins, because these twins share the same parentage and would presumably be subject to the same behaviors. The study assumes that gender will be a significant predictor in treatment seeking and protective health behaviors, and will therefore be a predictor of morbidity and mortality among twins. The study thus builds on and adds significantly to the body of literature that has shown the differential treatment of girl children in India.

Gender bias in India is well documented. There is an exaggerated preference for sons, and sex selective abortions are common[1]. Female children are treated differently than male children; as a result, girl children often do not have the same access to health and educational systems that male children do. We know that this difference in access results in poorer health and lower educational attainment as a child. These differences in early childhood have far-reaching implications in adulthood. However, we do not know how such bias play out among twins, especially boy-girl twin sets.

The parents of girl children often have a different set of behaviors than parents of boy children, resulting in differing rates of access to health care and healthy behavior based on gender. But much of the data collected centers around singleton births of boys and girls. Very few studies have focused on twin births and how parental health behaviors might contribute to excess morbidity and mortality among the girl child in twin pairings.

This study seeks to do just that. By comparing parental behaviors toward their twin children, we can clearly define how gender influences parent's treatment seeking

[1] Fikree, Fariyal and Pasha, Omrana. Role of gender in health disparity: the South Asian context. BMJ 2004; 325; 823-826.

and protective health behaviors. It will identify patterns of these behaviors, and allow for the development of public health interventions based on reducing morbidity and mortality of the girl child in twin pairings.

For the purpose of this research, I will be using the data collected in the India National Family Health Survey Round 3. This survey was completed in 2005-2006, and includes a nationally representative sample of 109,041 households. It includes 124,385 women aged 15-49 and 74,369 men aged 15-54. The survey covers 99% of India's population living in all 29 Indian states. To conduct the analysis, this study will be using a sample of 810 twin births captured by the INFHS.

This study will be testing for four outcomes.

a) It will examine the data on twins against data on immunizations to examine if they have received all age-appropriate immunizations.
b) It will look at the treatment of diarrhea with oral rehydration treatment (ORT) in the twin dataset.
c) It will examine if children in the twin data set were taken to a health center for their health care needs or if home remedies or other forms of treatment were used.
d) It will look at the duration of breastfeeding for the twin dataset, and look at the age at which supplement food was introduced.

For each outcome, a regression model will be fitted. Logistic regression will be used for binary data, and ordinary regression will be used for continuous data. The key covariate in each model will be gender composition, categorized as boy-boy, girl-girl, or boy-girl. The reference group will be boy-boy, coded as 1.

In looking at our four outcomes, we expect that gender will be a significant predictor of parental behavior. We expect that parental behaviors towards immunizing will be different in twin children, with boys receiving age-appropriate immunizations more often and more consistently throughout childhood than girl children. It is expected that ORT will be used more frequently with male twins than female twins, and that health centers will be accessed more often for male twins than for female twins. In terms of breastfeeding, we expect that the duration of breastfeeding will be longer for male twins than for female twins, and that supplemental food will be introduced at an earlier age for female twins than for male twins.

Overall, we expect that the outcomes will be consistent with what we know about gender composition and parental behavior in India. We also expect that findings about gender composition and morbidity and mortality among twins will be consistent with those findings among non-twins. Ultimately, we expect that the morbidity and mortality outcomes among twins will fall along gender lines, with girl children suffering a disproportionate share.