

IDHS data analysis exercise: Data on child health and demographics (young children as the unit of analysis)

We will be looking at various indicators of child demographic and child health. While the maternal health indicators (women as unit of analysis) in IDHS relate only to recent last births (_01), the child data relate to all children born in the last 3-5 years, though the universe for some variables is limited to a smaller subset (e.g., surviving children, youngest child under 3 living with its mother, last-born children).

Whether you make your own extract or use a pre-made file, you will need to log in using an email and password approved by The Demographic and Health Surveys Program to access data from Benin and India. For an MPC workshop, we will supply a temporary user name and password.

If you make your own data extract (assuming you have a statistical package and software to unzip a file on your computer), follow the directions below. If you use a premade data file, just note the variables included; go directly to page 5 of this handout to begin work on the exercises. Answers are at the end of the handout.

Making your own extract: Selecting Data

Once you have logged in, click on "Select Data" in the blue bar at toward the top of the IDHS homepage. For this exercise, choose Children as the unit of analysis.

Click on the "Select Samples" box and check the following boxes:

- Egypt 2008
- India 2005
- Nigeria 2013

Then click on "Submit sample selections." Note that your Data Cart will show that you have chosen 3 samples, and the variable display shows only the samples you selected.

Use the Search tool to identify the following variables, and click on the yellow circle to the left of the variable name to add these variables to your Data Cart:

KIDSEX (Sex of child)
KIDALIVE (Child is alive)
KIDTWIN (Child is twin or single birth)
KIDLIVESWITH (Child lives with female respondent or others)
CHDESIRE (Whether and when this child's pregnancy wanted)
IDEALKIDGRP (Ideal number of children, grouped, for mother)
URBAN (Urban-rural status)
DIARRECENT (Child had diarrhea recently)
DIATRENONE (Whether no advice or treatment sought for child's diarrhea)
DIAGIVORS (Child given oral rehydration for diarrhea)

Your Data Cart should show 10 variables and 3 samples. If you use a ready-made data file, these 3 samples and variables are included in it.

Click the green VIEW CART button under your Data Cart.

You will see that other variables have been automatically added to your cart. The data extract system automatically supplies variables that indicate the sample (SAMPLE), are needed for variance estimation (PSU, STRATA), allow you to link to other DHS files (CASEID, HHNUM, DISTRICT), and are used for weighting the variables (PERWEIGHT, DVWEIGHT).

For Data format, to match the commands listed below, choose STATA. At an MPC workshop, a Stata file and an ASCII file will be made available to you.

To create a dataset for analysis, click on the green CREATE DATA EXTRACT button.

This brings up a page that summarizes the data extract and allows us to go back and modify the specifications (for example, to add a variable that we forgot). It's always a good idea to provide a description of your data extract; when we are sharing a common e-mail account for an MPC workshop, include your name in the sample description.

The email account used to log in is sent a message when the account is created. To access the page to download the data, go to the Home Page and click on "My Data Extracts."

Getting the Data onto Your Computer for Analysis (if you make your own extract)

Step 1: Download the data

- Go to the Home page and click on "My Data Extracts"
- Right click on the STATA link under Formatted Data next to the extract you created (the one with your name in the description)
- Chose "Save Link As ..." (or "Save Target As ...")
- Save into "Documents" (that should pop up as the default location)

Step 2: Decompress the data

- Find the "Documents" folder under the Start menu
- Right click on the ".dta.gz" file
- Use decompression software to unzip the compressed file (if using 7-zip, choose Extract to "idhs_0001.dta\")

Step 3: Read in the Data

- Open the "\idhs_0001.dta" folder
- Double click on the file to open it in Stata

Data Analysis with young children as the unit of analysis

We'll be comparing children under 5 in the most recent samples for Egypt, India, and Nigeria (with the Egyptian sample limited to children born to ever-married women).

Note that the weight PERWEIGHT supplies numbers equal to the total number of young children in the survey, not the total number of children in the population. (Ignore the numbers after the decimal point in the weighted results.)

1a. Is it more rare for children in these samples to be twins/non-singulate births or for surviving children to live apart from their (living) mothers?

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tab kidtwin sample [aw=perweight], col
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tab kidliveswith sample [aw=perweight] if kidalive==1, col
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1b. How would the results on young children's co-residence apart from their mothers differ if the data were based on the living arrangements of children under 5 according to the results of a national population census?

2. Does preference for sons or low status of females result in a lower proportion of girls than boys surviving in these samples?

For survival of male children:

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tab kidalive sample [aw=perweight] if kidsex==1, col
```

For survival of female children:

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tab kidalive sample [aw=perweight] if kidsex ==2, col
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3. What proportion of these young children live/lived in urban areas?

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tab urban sample [aw=perweight], col
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Does the term "urban" mean the same thing in all 3 countries? Consult the Comparability tab of the URBAN variable description to answer.

4. What proportion of children experienced diarrheal disease in the past 2 weeks (excluding dead children)?

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tab diarrecent sample [aw=perweight] if kidalive==1, col
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5. For what percent of children with diarrheal disease in the past two weeks did their mothers seek some treatment or advice about the child's illness? What percent of the children were treated with oral rehydration solution (a sugar-salt-water mixture [sometimes containing other electrolytes and minerals]), which is a cheap and effective treatment against dehydration during diarrheal disease?

tab diatrenone sample [aw=perweight] if diarrecent==23, col

tab diagivors sample [aw=perweight] if diarrecent==23, col

6. For what percent of children did the mother want no more births when she became pregnant?

tab chdesire sample [aw=perweight], col

7a. Does a lower proportion of unwanted pregnancies in these samples suggest more effective use of family planning or larger family size desires? Consider the distribution of reported ideal family sizes reported by the children's mothers (with total top-coded at 6 or more children) for the latest samples for Egypt, India, and Nigeria. What is the modal number for ideal family size for each sample?

tab idealkidgrp sample [aw=perweight], col

7b. How would you expect the numbers for idealkidgrp to be different if you had chosen women of childbearing age, rather than their young children, as the unit of analysis?

Answers to data analysis using children as the unit of analysis

1a. The percent of children who were singulate (non-multiple) births was 98 percent for India 2005, 96.5 percent for Nigeria 2013, and 96 percent for Egypt 2008.

The percent living of children living with their mothers was 99 percent in India 2005, 97 percent for Nigeria 2013, and 99.8 percent for Egypt 2008.

Thus, for (surviving) children under 5 included in these DHS samples, it was more unusual to live apart from their mothers than to be a twin or triplet.

1b. If the results were based on data from a national census, the percentage of children living apart from their mothers would be higher. For a young child to be part of the DHS sample, it had to be reported by its living mother, so none of these children are maternal orphans at the time of the survey. In the total population, some young children enumerated would have outlived their mothers and thus could not reside with their mothers.

2. Survival status by sex: The share of male children who had died was 6.1 percent for India 2005, 9.6 percent for Nigeria 2013, and 2.8 percent for Egypt 2008. The share of female children who had died was 6.6 percent for India 2005, 8.4 percent for Nigeria 2013, and 2.1 percent for Egypt 2008. Female children appear to be slightly less likely to survive than their male counterparts in India but to have a slight survival advantage in Nigeria and Egypt. Ideally, a researcher should carry out statistical tests to see whether these differences result from sampling variability only.

3. Urban versus rural residence: The proportions residing in urban areas are 25 percent for India, 35 percent for Nigeria, and 37 percent for Egypt.

The numbers are not really comparable, however, due to differing country-specific definitions of what is urban. Nigerian statistics generally define localities as urban if they have 20,000+ inhabitants with non-agrarian occupations. For India, the population threshold is lower (5,000+ inhabitants, with 3/4 of adult males having non-agrarian occupations.) Egypt uses other criteria based on capital city or urban governorate status.

4. The proportion of children who had diarrhea recently was fairly similar across countries, at 9 percent for India, 10 percent for Nigeria, and 8.5 percent for Egypt.

5. For children who experienced diarrhea in the past 2 weeks, the percent for whom mothers sought advice or treatment for the illness was 69 percent for India, 71 percent for Nigeria, and 62 percent for Egypt. The percent treated with oral rehydration solution (which could be prepared at home) was much lower, at 27 percent, 32 percent, and 28 percent, respectively.

6. The percentage of these children whose mothers wanted no more births when they became pregnant was 11 percent for India 2005, 2 percent for Nigeria 2013, and 9 percent for Egypt 2008.

7a. Mothers' reported ideal family size, using children as the unit of analysis, was much higher in Nigeria than in India or Egypt, which probably explains the lower proportion of unwanted births for Nigeria.

For India 2005, 79 percent of mothers reported ideal family size of 2 or 3 children.

For Egypt 2008, 70 percent of mothers reported ideal family size of 2 or 3 children.

For Nigeria 2013, 60 percent of mothers reported ideal family size of 6 or more children; only 4 percent reported ideal family size of 2 or 3 children.

7b. Ideal family size norms would be smaller if women rather than children were the unit of analysis. First, no women who chose to have zero children are included in the sample when children are the unit of analysis. Second, mothers who had large families are overrepresented when children are the unit of analysis. For example, every woman gets equal weight in the distribution of family size preferences when women of childbearing age are the unit of analysis; however, women who had two children in the past five years are double counted when children under 5 are the unit of analysis.

This result reflects a broader difference in the measured family size of women versus the family sizes of their children. Mothers who gave birth to one child and mothers who gave birth to 8 children have equal weight in the first measure (family sizes of women) but the latter are counted 8 times more for the second measure (family sizes of children).