

README for the Reproducibility Package for Maternal Mental Health and its Influence on Children’s Early Development: Evidence from Khyber Pakhtunkhwa, Pakistan

Overview

This paper analyzes data from a household survey in Khyber Pakhtunkhwa, Pakistan conducted from December 2023 to February 2024 with caregivers with at least one child aged 72 months or younger. The code of this reproducibility package uses Stata to clean the data from raw files and conducts all analyses as presented in the tables and figures in the paper. The do files are labeled in the order they should be run. It should take no more than 10 minutes to run all do files.

Data Availability and Provenance Statements

The data used to support the findings of the present study have been deposited in the World Bank Reproducible Research Repository. The data were collected by the World Bank and will be made available via the microdatacatalog under a licensed terms of use (<https://microdata.worldbank.org/index.php/terms-of-use>).

Statement about Rights

- **X** I certify that the author(s) of the manuscript have legitimate access to and permission to use the data used in this manuscript.
- **X** I certify that the author(s) of the manuscript have documented permission to redistribute/publish the data contained within this replication package. Appropriate permission are available at: <https://microdata.worldbank.org/index.php/terms-of-use>.

Summary of Availability

- All data **are** publicly available.
- Some data **cannot be made** publicly available.
- **No data can be made** publicly available.

Details on Data Source

All analyses were conducted using the following data source:

Data.Name	Data.Files	Location	Provided	Citation
KP Maternal Mental Health Survey	KP survey_raw.dta	data/	TRUE	World Bank (2024)

CREDI variables were deidentified and uploaded to the [CREDI scoring app](#). The deidentified dataset only included child age in months [AGE], household ID [ID], and the CREDI variables [lf1-lf108, lmh1-lmh9] for a subset of the population (n=1396), specifically children that were below 36 months of age. The CREDI app produced age-standardized Z-scores compared to a global population. This data was then exported and merged with the raw data.

Computational requirements

The code was last run with Stata 18 on a Macbook. All files are in Stata format.

Description of files

- ‘dofiles’ folder: contains all the Stata programs needed to clean and produce the tables and figures in the manuscript. The dofiles should be run in order (1_clean.do, 1b_assetindex.do, 2_tables and figures.do)
- ‘1_clean.do’ cleans the raw data.
- ‘1b_assetindex.do’ creates an asset index .
- ‘2_tables and figures.do’ runs all analyses presented in the table and figures
- ‘data’ folder: contains the raw data file referenced above, the CREDI Data, and the cleaned dataset that is created after all 3 do files are run.

List of Exhibits

Overview of output and connection to figures and tables in draft. We link the tables and figures to the lines in the “2_tables and figures” do file and output from the replication package [here](#).

- **Table 1:**
 - Lines 15-87 calculate the descriptive statistics presented in table 1
- **Table 2:**
 - Lines 115-273 calculate the prevalences of stressors presented in table 2
- **Table 3:**
 - Lines 276-406 calculates child development by refugee status, primary school maternal education, and rural/urban area seen in table 3
- **Table 4a:**
 - Lines 409-428 calculate the prevalence of maternal mental health conditions by varying levels of refugee status, primary school education and rural v. urban residency for children under the age of 3 as seen in table 4a
- **Table 4b:**
 - Lines 430-457 calculate the prevalence of maternal mental health conditions by varying levels of refugee status, primary school education and rural v. urban residency for children 3-6-years-old as seen in table 4b
- **Table 5:**
 - Lines 460-482 calculate the pairwise correlations between stressors and maternal parenting stress, depression, and anxiety as seen in table 5
- **Table 6:**
 - Lines 504-528 calculate the average levels of child development by various maternal mental health co-occurrences as seen in table 6
- **Table 7:**
 - Lines 530-547 calculate the individual unadjusted and adjusted linear regression results of parenting Stress, depression, and anxiety on ECD for children under 3-years-old as seen in table 7
- **Table 8:**
 - Lines 549-567 calculate the individual unadjusted and adjusted linear regression results of parenting Stress, depression, and anxiety on ECD for children 3-6-years-old as seen in table 8
- **Table 9:**
 - Lines 570-579 calculate the unadjusted and adjusted linear regression results of depression, anxiety, and parenting stress interaction on ECD for children under 3-years-old as seen in table 9
- **Table 10:**
 - Lines 582-591 calculate the unadjusted and adjusted linear regression results of depression, anxiety, and parenting stress interaction on ECD for children 3-6-years-old as seen in table 9

- **Table 11:**
 - Lines 593-633 and 635-675 calculate the linear predictions of child development by maternal mental health
- **Figure 1:**
 - Lines 90-93 generate figure 1
- **Figure 2:**
 - Lines 95-98 generate figure 2
- **Figure 3:**
 - Lines 100-103 generate figure 3
- **Figure 4:**
 - Lines 105-108 generate figure 4
- **Figure 5:**
 - Lines 110-112 generate figure 5
- **Figure 6:**
 - Lines 485-501 calculate the prevalence and co-occurrence of maternal mental health conditions by age group, which are used to manually create the Venn diagram that is Figure 6
- **Figure 7:**
 - Line 633 generates figure 7, the adjusted prediction of child development for children under the age of 3-years-old at Varying Levels of Maternal Mental Health
- **Figure 8:**
 - Line 675 generates figure 7, the adjusted prediction of child development for children 3-6-years-old at Varying Levels of Maternal Mental Health

