**Supplementary Materials**

**Prevalence of antibiotic use and household water-sanitation risk factors of acute watery diarrhea among children <5 years: retrospective analysis of multicounty health survey data, 2006-2018**

Md. Shakil Ahmed1

1Department of Statistics, University of Rajshahi, Rajshahi-6205, Bangladesh.

Email: shakil.statru@gmail.com

**Supplementary Table 1:** Wealth indexdescriptive statistics of prevalence of antibiotic use

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Poorest** | **Poorer** | **Middle** | **Richer** | **Richest** |
| Min. :0.01587 | Min. :0.007937 | Min. :0.01587 | Min. :0.007937 | Min. :0.02732 |
| 1st Qu.:0.17941 | 1st Qu.:0.193364 | 1st Qu.:0.16914 | 1st Qu.:0.143732 | 1st Qu.:0.10356 |
| Median :0.22420 | Median :0.224445 | Median :0.19663 | Median :0.175391 | Median :0.14186 |
| Mean :0.23906 | Mean :0.220693 | Mean :0.19550 | Mean :0.174874 | Mean :0.16987 |
| 3rd Qu.:0.29513 | 3rd Qu.:0.245749 | 3rd Qu.:0.22208 | 3rd Qu.:0.211032 | 3rd Qu.:0.19841 |
| Max. :0.50000 | Max. :0.409091 | Max. :0.31281 | Max. :0.321267 | Max. :0.95238 |

**Supplementary Table-2:** Mother education descriptive statistics for prevalence of acute watery diarrhea

|  |  |  |  |
| --- | --- | --- | --- |
| **No. education** | **Primary** | **Secondary** | **Higher** |
| Min. :0.0000 | Min. :0.0000 | Min. :0.0300 | Min. :0.00000 |
| 1st Qu.:0.0400 | 1st Qu.:0.1850 | 1st Qu.:0.1400 | 1st Qu.:0.01000 |
| Median :0.2000 | Median :0.3100 | Median :0.2800 | Median :0.02000 |
| Mean :0.2863 | Mean :0.3369 | Mean :0.3114 | Mean :0.07856 |
| 3rd Qu.:0.4950 | 3rd Qu.:0.4650 | 3rd Qu.:0.4700 | 3rd Qu.:0.11000 |
| Max. :0.8700 | Max. :0.7800 | Max. :0.9000 | Max. :0.64000 |

**Supplementary Table-3:** Descriptive statistics for prevalence of diarrhea for all age groups

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0-6** | **6-12** | **12-18** | **18-24** | **24-30** | **30-36** | **36-42** | **42-48** | **48-54** |
| Min. :0.05310 | Min. :0.0963 | Min. :0.08943 | Min. :0.06667 | Min. :0.08182 | Min. :0.04938 | Min. :0.03704 | Min. :0.02654 | Min. :0.01292 |
| 1st Qu.:0.08503 | 1st Qu.:0.1689 | 1st Qu.:0.16695 | 1st Qu.:0.13043 | 1st Qu.:0.10397 | 1st Qu.:0.07830 | 1st Qu.:0.06312 | 1st Qu.:0.04713 | 1st Qu.:0.03928 |
| Median :0.10022 | Median :0.1871 | Median :0.18042 | Median :0.14388 | Median :0.11489 | Median :0.08775 | Median :0.07024 | Median :0.05502 | Median :0.04951 |
| Mean :0.10442 | Mean :0.1886 | Mean :0.18214 | Mean :0.14229 | Mean :0.11449 | Mean :0.08743 | Mean :0.07361 | Mean :0.05651 | Mean :0.05053 |
| 3rd Qu.:0.12256 | 3rd Qu.:0.2137 | 3rd Qu.:0.19813 | 3rd Qu.:0.15468 | 3rd Qu.:0.12533 | 3rd Qu.:0.09516 | 3rd Qu.:0.08257 | 3rd Qu.:0.06614 | 3rd Qu.:0.05872 |
| Max. :0.21231 | Max. :0.2665 | Max. :0.28395 | Max. :0.19778 | Max. :0.16928 | Max. :0.15873 | Max. :0.14815 | Max. :0.08705 | Max. :0.13008 |
| NA's :7 | NA's :7 | NA's :7 | NA's :7 | NA's :7 | NA's :7 | NA's :7 | NA's :7 | NA's :7 |

**Final_Water_Forest.tif**

**Supplementary Figure-1:** Forest plot of adjusted odds ratio by fitting multiple logistic regression model for sources of drinking water risk factors of different DHS survey regions (a) South East Asia, (b) Central Asia, (c) Europe, and (d) Latin America

**5. WestWat.tiff**

**Supplementary Figure-2:** Forest plot of adjusted odds ratio by fitting multiple logistic regression model for sources of drinking water risk factors of in West North and Central Africa

**Final_Sanitation_Forest.tif**

**Supplementary Figure-3:** Forest plot of adjusted odds ratio by fitting multiple logistic regression model for household sanitation risk factors of different DHS survey regions (a) South East Asia, (b) Central Asia, (c) Europe, and (d) Latin America

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**Supplementary Figure-4:** Forest plot of adjusted odds ratio by fitting multiple logistic regression model for household sanitation risk factors in West North and Central Africa.