**Table 1: Prevalence of re-infection, intensity of re-infection and re-infection rate (per 100-person year of follow-up) among individuals treated at baseline for *S. haematobium* infection*.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | Re-infected  **% (n/N)** | Rate of re-infection **(95% CI)** | Light re-infection  **% (95% CI)**  **N=55** | Heavy re-infection  **% (95%CI)**  **N=30** |
| Overall | 22.5 (85/378) | 17 (10- 25) | 14.6 (11.2- 18.5) | 7.9 (5.4- 11.1) |
| **Gender** |  |  |  |  |
| Female | 17.7 (21/119) | 8 (2- 24) | 11.8 (6.6- 18.9) | 5.9 (2.4- 11.7) |
| Male | 24.7 (64/259) | 20 (12- 32) | 15.8 (11.6- 20.9) | 8.9 (5.7- 13.0) |
| **Baseline age** |  |  |  |  |
| ≤10 | 29.0 (20/69) | 13 (3- 37) | 15.9 (8.2- 26.7) | 13.0 (6.1- 23.3) |
| 11 | 19.1 (20/105) | 20 (8- 41) | 13.3 (7.5- 21.4) | 5.7 (2.1- 12.0) |
| 12 | 23.3 (24/103) | 21 (8- 46) | 15.5 (9.1- 24.0) | 7.8 (3.4- 14.7) |
| ≥13 | 20.8 (21/101) | 12 (4- 29) | 13.9 (7.8- 22.2) | 6.9 (2.8- 13.8) |
| **Community piped water (quartiles)** |  |  |  |  |
| (lowest) 1 | 18.8 (15/80) | 16 (6- 34) | 10.0 (4.4- 18.8) | 8.8 (3.6- 17.2) |
| 2 | 18.8 (15/80) | 23 (8- 50) | 11.3 (5.3- 20.3) | 7.5 (2.8- 15.6) |
| 3 | 14.1 (11/78) | 10 (2- 29) | 10.2 (4.5- 19.2) | 3.9 (0.8- 10.8) |
| 4 | 18.8(16/85) | 19 (7- 42) | 12.9 (6.6- 22.0) | 5.9 (1.9- 13.2) |
| **Household access to water (2007)** |  |  |  |  |
| No piped water | 8.5 (4/47) | 13 (3- 39) | 6.4 (1.3- 17.5) | 2.1 (0.1- 11.3) |
| Piped water | 24.5 (81/331) | 17 (10- 27) | 15.7 (12.0- 20.1) | 8.8 (5.9- 12.3) |
| **Household assets quintiles** |  |  |  |  |
| (poorest) 1 | 15.3 (13/85) | 9 (2- 26) | 9.4 (4.2- 17.7) | 5.9 (1.9- 13.2) |
| 2 | 22.1 (17/77) | 10 (2- 31) | 15.6 (8.3- 25.6) | 6.5 (2.1- 14.5) |
| 3 | 20.6 (15/73) | 9 (1- 31) | 16.4 (8.8- 27.0) | 4.1 (0.9- 11.5) |
| 4 | 26.8 (19/71) | 39 (16- 76) | 14.1 (7.0- 24.4) | 12.7 (6.0- 22.7) |
| 5 | 30.0 (18/60) | 30 (10- 69) | 18.3 (9.5- 30.4) | 11.7 (4.8- 22.6) |
| **School grade** |  |  |  |  |
| Grade 5 | 22.9 (50/218) | 15 (7- 26) | 14.2 (9.9- 19.6) | 8.7 (5.3- 13.3) |
| Grade 6 | 21.9 (35/160) | 19 (9- 36) | 15.0 (9.9- 21.5) | 6.9 (3.5- 12.0) |
| **Altitude (meters)** |  |  |  |  |
| < 50 | 35.5 (11/31) | 0 (0- 36) | 25.8 (11.9- 44.6) | 9.7 (92.0- 25.8) |
| 50-100 | 20.8 (42/202) | 22 (12- 37) | 12.4 (8.2- 17.7( | 8.4 (5.0- 13.10 |
| 100-150 | 20.6 (26/126) | 10 (3- 25) | 12.7 (7.4- 19.8) | 7.9 (3.9- 14.1) |
| 150-200 | 20.0 (2/10) | 0 (0- 62) | 20.0 (2.5- 55.6) | 0 (0- 30.8) |
| ≥200 | 44.4 (4/9) | 79 (10- 290) | 44.4 (13.7- 78.8) | 0 (0- 33.6) |
| **Distance to water body** |  |  |  |  |
| <1 km | 22.5 (31/138) | 21 (9- 39) | 9.4 (5.1- 15.6) | 13.0 (7.9- 19.8) |
| 1-2 km | 23.6 (33/140) | 16 (6- 32) | 17.9 (11.9- 25.2) | 5.7 (2.5- 10.9) |
| 2-3 km | 25.0 (18/72) | 18 (5- 45) | 20.8 (12.2- 32.0) | 4.2 (0.9- 11.7) |
| >3 km | 10.7 (3/28) | 7 (0.0- 37) | 7.1 (0.9- 23.5) | 3.6 (0.1- 18.3) |
| **Toilet in household** |  |  |  |  |
| No toilet | 20.0(12/70) | 17 (6- 40) | 12.9 (6.1- 23.0) | 7.1 (2.4- 15.9) |
| Toilet | 23.1(71/308) | 16 (9- 27) | 14.9 (11.1- 19.4) | 8.1 (5.3- 11.7) |
| **Land cover classifications** |  |  |  |  |
| Sparse shrubland | 28.3 (17/60) | 26 (7- 67) | 15.0 (7.1- 26.6) | 13.3 (5.9- 24.6) |
| Closed shrubland | 22.4 (47/210) | 14 (7- 25) | 14.8 (10.3- 20.3) | 7.6 (4.4- 12.1) |
| Open shrubland | 21.5 (20/93) | 22 (9- 45) | 15.1 (8.5- 24.0) | 6.5 (2.4- 13.5) |
| Thicket | 6.7 (1/14) | 0.0 (0.0- 50) | 6.7 (0.2- 31.9) | 0.0 (0.0- 21.8) |

**Table 2: Simple and multivariable negative binomial regression model results for the predictors of intensity of re-infection with *S. haematobium*.** Model 1 presents results from the simple negative binomial model, Model 2 presents results from a multivariable negative binomial model where community piped water use was included as a categorical variable (quartiles) to examine nonlinear fit and Model 3 presents results from a multivariable negative binomial model in which community piped water use was included as a continuous covariate. Homestead level piped water use was derived from a Gaussian kernel density estimation using data from a survey conducted in 2007.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Model 1: Simple | | | Model 2: Multivariable | | | Model 3: Multivariable | | |
| Covariates | **IRR** | **95% CI** | **P-value** | **IRR** | **95% CI** | **P-value** | **IRR** | **95% CI** | **P-value** |
| **Female** | 0.17 | 0.06- 0.54 | 0.003 | 0.12 | 0.05 - 0.28 | <0.001 | 0.14 | 0.06- 0.32 | <0.001 |
| **Piped water quartiles in 2007** (ref. 1st Quartile) |  |  |  |  |  |  |  |  |  |
| 2 | 0.13 | 0.03- 0.59 | 0.008 | 0.24 | 0.07 - 0.76 | 0.016 | \_ | \_ | \_ |
| 3 | 0.08 | 0.02- 0.32 | <0.001 | 0.07 | 0.02 - 0.20 | <0.001 | \_ | \_ | \_ |
| 4 | 0.15 | 0.04- 0.58 | 0.006 | 0.11 | 0.03- 0.38 | <0.001 | \_ | \_ | \_ |
| **Community piped water coverage 2007** (linear effect) | 0.96 | 0.93- 0.98 | 0.002 | \_ | \_ | \_ | 0.96 | 0.93- 0.98 | 0.004 |
| **Age at baseline** (years) | 0.68 | 0.50- 0.93 | 0.017 | 0.82 | 0.62- 1.10 | 0.187 | 0.78 | 0.59- 1.04 | 0.094 |
| **Altitude class** (ref <50) |  |  |  |  |  |  |  |  |  |
| 50-100 | 3.65 | 0.91- 14.5 | 0.067 | 0.75 | 0.2- 2.76 | 0.662 | 1.20 | 0.31- 4.56 | 0.793 |
| 100-150 | 0.72 | 0.21- 2.54 | 0.612 | 0.19 | 0.05- 0.78 | 0.021 | 0.41 | 0.1- 1.74 | 0.226 |
| ≥150 | 0.11 | 0.02- 0.62 | 0.012 | 0.03 | 0.01- 0.19 | <0.001 | 0.05 | 0.01- 0.32 | 0.001 |
| **Land cover class** (ref. Sparse shrubland) |  |  |  |  |  |  |  |  |  |
| Closed Shrubland | 1.96 | 0.51- 7.57 | 0.327 | 0.63 | 0.24- 1.61 | 0.330 | 0.86 | 0.34- 2.21 | 0.754 |
| Open Shrubland/Grassland | 1.77 | 0.33- 9.49 | 0.508 | 1.31 | 0.43- 3.90 | 0.639 | 1.41 | 0.48- 4.16 | 0.533 |
| Thickett | 0.01 | 0.00- 0.06 | <0.001 | 0.02 | 0.00- 0.15 | <0.001 | 0.02 | 0.00- 0.20 | 0.001 |
| **Toilet in household** (ref. no toilet) | 2.71 | 0.70- 10.4 | 0.148 | 0.61 | 0.20- 1.91 | 0.400 | 0.77 | 0.24- 2.46 | 0.662 |
| **Grade** (ref. Grade 5) | 0.24 | 0.08- 0.75 | 0.014 | 1.89 | 0.74- 4.80 | 0.182 | 1.35 | 0.52- 3.48 | 0.540 |
| **Visit** (ref. Follow up 1) | 1.01 | 0.21- 4.92 | 0.989 | 0.46 | 0.20- 1.10 | 0.082 | 0.74 | 0.31- 1.76 | 0.494 |
| **Distance to water body class** (ref. <1km) |  |  |  |  |  |  |  |  |  |
| 1-2 km | 0.11 | 0.03- 0.34 | <0.001 |  |  |  |  |  |  |
| 2-3 km | 0.18 | 0.04- 0.85 | 0.031 |  |  |  |  |  |  |
| >3 km | 0.08 | 0.01- 0.54 | 0.010 |  |  |  |  |  |  |
| **Household wealth index** (ref. 1st quintile) |  |  |  |  |  |  |  |  |  |
| 2 | 3.75 | 0.49- 28.7 | 0.203 |  |  |  |  |  |  |
| 3 | 0.38 | 0.08- 1.83 | 0.233 |  |  |  |  |  |  |
| 4 | 3.22 | 0.63- 16.3 | 0.159 |  |  |  |  |  |  |
| 5 | 1.71 | 0.03- 1.70 | 0.432 |  |  |  |  |  |  |
| **Square root of slope** | 0.77 | 0.45- 1.32 | 0.340 |  |  |  |  |  |  |
| **Baseline intensity of infection** (ref. Light infection) | 2.59 | 0.81- 8.30 | 0.110 |  |  |  |  |  |  |
| *Alpha (overdispersion parameter)* |  |  |  | *21.8* | *17.4- 27.3* | *<0.001* | *22.6* | *17.9- 28.3* | *<0.001* |