level Overall

n 7,783

geo\_zone (%) 1 1368 (17.6)

2 1391 (17.9)

3 1797 (23.1)

4 1207 (15.5)

5 852 (10.9)

6 1168 (15.0)

age\_bands (%) 0 754 ( 9.7)

1 1637 (21.0)

2 1638 (21.0)

3 1752 (22.5)

4 1653 (21.2)

5 349 ( 4.5)

sex (%) 1 3971 (51.0)

2 3812 (49.0)

species (%) PF 1596 (87.7)

PF,PM 109 ( 6.0)

PF,PO 24 ( 1.3)

PM 71 ( 3.9)

PO 19 ( 1.0)

Study population

A total of 7783 Nigerian children under 5 years of age participated in the study. Overall, the mean age was 2.4 years (SD = 1.4) and 49.0% were females (3812/7783). Basic study characteristics are presented in Table 1.

|  |  |  |  |
| --- | --- | --- | --- |
| Table 2: Study population characteristics | | | |
|  | **2018**  (N=7,783) \* |  |  |
| **Age (years), % (n)** |  |  |  |
| 0 | 9.7 (754) |  |  |
| 1 | 21.0 (1,637) |  |  |
| 2 | 21.0 (1,638) |  |  |
| 3 | 22.5 (1,752) |  |  |
| 4 | 21.2 (1,653) |  |  |
| 5 | 4.5 (349) |  |  |
| **Gender, % (n)** |  |  |  |
| Female | 49.0 (3,812) |  |  |
| **Geopolitical zone, % (n)** |  |  |  |
| North-Central | 17.6 (1,368) |  |  |
| North-East | 17.9 (1,391) |  |  |
| North-West | 23.1 (1,797) |  |  |
| South-East | 15.5 (1,207) |  |  |
| South-South | 10.9 (852) |  |  |
| South-West | 15.0 (1,168) |  |  |
| \* N = denominator | | | |

Asexual parasite prevalence was 21.5% (1675/7783) and the asexual parasite densities ranged from 15 to 485,609 parasites/μL, with the geometric mean being 2242 parasites/μL (95% CI = 2032-2473 parasites/μL). Asexual parasite densities did not differ in relation to sex (geometric mean: 2187 parasites/μL, 95% CI: 1909-2505 parasites/μL for males and 2304 parasites/μL, 95% CI: 1998-2657 parasites/μL for females, p-value=0.5).

When including all children in the analysis (those positive or negative for parasites), the proportion with ≥ 10,000 parasites/μL increased with increasing age, with 1.6% in children under 1 years, 4.2% in 1-year olds, 4.8% in 2-year olds, 5.8% in 3-year olds, 7.3% in 4-year olds and 8.0% in 5-year olds (**Figure 4a**). Conversely, the proportion with no infection detected by microscopy decreased with increasing age, with 86.7% in 0-year olds, 82.6% in 1-year olds, 82.3% in 2-year olds, 74.8% in 3-year olds, 72.1% in 4-year olds, 71.9% in 5-year olds (**Figure 4a**). There was strong evidence for a difference between asexual category and age (p<).

When only infected children were included in the analysis, a different pattern emerged (**Figure 4b**). The percentage with ≥ 10,000 parasites/μL was similar in all age groups (between 23.1-28.6%) apart from the in the youngest age group (12.0%). A significant difference between asexual category and age was found (p=0.), however, this was less significant than when all individuals were included in the analysis.