**Dengue virus infection in Ethiopia: A Systematic review and Meta-analysis**

Eshetu Nigussie1\*, Daniel Atlaw2, Getahun Negash1, Habtamu Gezahegn2, Girma Baresa3, Alelign Tasew3,Demissu Zembaba3

1Department of Medical Laboratory Science, School of Medicine, Madda Walabu University, Ethiopia

2Department of Biomedical Science, School of Medicine, Madda Walabu University, Ethiopia

3Department of Public Health, School of Health Science, Madda Walabu University, Ethiopia

**Abstract**

**Background:** Dengue is caused by a positive-stranded RNA virus called dengue virus, which is spread by Aedes mosquito species. It is a fast-growing acute febrile disease with potentially lethal consequences that is a global public health problem, mostly in tropical and subtropical countries. In Ethiopia, dengue fever is understudied, although the virus is still being transmitted and viral infection rates are rising. This systematic review and meta-analysis was aimed at estimating the pooled prevalence of DENV infection in Ethiopia.

**Methods:** A literature search was done on the PubMed, Hinari and Google Scholar databases to identify studies published before July, 2023. Random effects and fixed effects models were used to estimate the pooled prevalence of all three markers. The Inconsistency Index was used to assess the level of heterogeneity.

**Results:** A total of 11 studies conducted on suspected and acutely febrile participants were included in this review. The majority of the studies had a moderate risk of bias and no study had a high risk of bias. A meta-analysis estimated a pooled IgG prevalence of 21% (95% CI: 19-23), a pooled IgM prevalence of 9% (95%CI: 4-13) and a pooled DENV-RNA prevalence of 48% (95% CI: 33-62). There is evidence of possible publication bias in IgG but not in the rest of the markers.

**Conclusion**: The prevalence of dengue is become public health problem in Ethiopia. Healthcare providers, researchers and policymakers should give more attention to dengue fever.

**Keywords**: Dengue, Dengue virus, Systematic review, Meta-analysis, Ethiopia