

# Review of: "Misdiagnosis of Dengue Fever as Malaria and Typhoid Fever and Their Co-infection in Rural Areas of Southwest Nigeria"

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Potential competing interests: No potential competing interests to declare.

This is a very interesting study describing potential misdiagnosis and underdiagnosis of dengue fever in places where malaria and other febrile diseases are endemic and where diagnostic tools may be scarce. Results and conclusions of the study are relevant to increase awareness among clinicians of the importance of rapid and accurate diagnosis. I have some comments to improve the document.

## Abstract

1. Abstract states that dengue (transmitted by *Aedes*) and malaria (transmitted by *Anopheles*) have the same arthropod vector. This is inaccurate; please revise.
2. Please specify in the abstract what method was used to diagnose malaria and typhoid fever.

## Introduction

1. The sentence "3 types of *Salmonella paratyphi* also share similar symptoms with both malaria and dengue fevers." needs a reference. Also, please describe the 3 types of *S. paratyphi* present in the area.
2. Dengue virus should be summarized as (DENV) on first use. Also, dengue virus is lower case, different from Zika virus, which should be written in uppercase because it refers to a geographical area.
3. "DHF and DSS are major public health concerns because of their severe and often fatal disease in children, as approximately 90% of infections occur in children less than 15 years of age." Please describe the new categories from the WHO – with or without warning signs and severe.
4. "Malaria remains one of the deadliest infectious diseases in Africa, and its parasites belong to the genus *Plasmodium*. In humans, malaria is caused by *P. falciparum*, *P. malariae*, *P. ovale*, *P. knowlesi*" Please describe here that *Plasmodium* parasites are transmitted to humans by *Anopheles* mosquitoes.
5. "Typhoid fever also remains an important public health problem in many developing countries of the world, including Nigeria" – please explain here the agents causing the fever. It is explained in the abstract, but it should be explained in more detail in the introduction.
6. Please describe what the main vectors of malaria are in the area of Nigeria included in this study.

## Methods

1. "The ethical committee of Joseph Ayo Babalola University approved this study" Please add the IRB approval number.
2. A paragraph states, "A cross-section of the patients seeking diagnosis for malaria and typhoid were tested for dengue virus (DENV) NS1, IgM, and IgG using ELISA and Reverse Transcriptase Polymerase Chain Reaction (RT-qPCR)." Then another paragraph states that "All the samples testing positive for both malaria and typhoid fever were further tested for dengue virus using the ELISA technique." Please clarify or add a table with the number of samples that were tested by each technique.

## Results

1. Figures 3, 4, and 5 should be edited to better present results. A suggestion will be to include these data in a table rather than a graph, and show the range of the antibody levels or NS1 concentration if possible.