Review of: "Six-year trend analysis of malaria prevalence at University of Gondar Specialized Referral Hospital, Northwest Ethiopia, from 2014 to 2019"

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The current study is a piece of study reported from a single hospital in one of malaria endemic areas in Ethiopia. The study aimed at assessing malaria burden at the University of Gondor specialized referral hospital, by reviewing the medical records of malaria suspected patients diagnosed and treated at the hospital. The main finding was that the prevalence of malaria in the study site was 7.7%, whereby *Plasmodium vivax* was the dominant malaria parasite at earlier years of the study, which was later replaced by *P. falciparum* in the recent years. Furthermore, despite the seasonal fluctuation, malaria burden has shown a decreasing trend between years 2014 and 2019. The finding of this study was in compliance with the general declining trend observed both in global and national malaria burden. Although the study was solely relied on secondary data, the fact that the study included large sample size, using different statistical tools (mainly regression model), the inclusion of data from different seasons, and comparison made between malaria prevalence data and some socio-demographic characteristics of participants made the study scientifically sounding and meaningful. Nevertheless, there are some limitations observed in the study including:

1. This study is not a kind of comprehensive report as it didn't included data from diverse sites, populations, altitudes, and districts,
2. Description of the study setting, especially information about the University of Gondor Specialized Referral Hospital is missing. The authors mentioned only where this hospital is found. Descriptive information such as the hospital's catchment area, number of people served at the hospital, and major health problem in the study area were very limited,
3. Exact diagnostic method (s) used in the study were not precisely described except mentioning that 'microscopy is a major malaria diagnostic method at health centers and hospitals in Ethiopia". To be clear, what were the procedures used for malaria diagnosis in the study hospital? Is it microscopy, RDT, both or other diagnostic tools? How the blood samples were collected, fixed and then stained etc…? Such important data were missing, although the study was entirely depended on secondary data,
4. I wonder how the authors made quality checking for the staining dye used during diagnosis. In the data quality assurance section, it has been stated that '*the quality of blood film staining reagents (Giemsa) was checked for its expiration date, by running the known blood sample*'. I think this is really confusing! This study entirely relied on secondary data extracted from medical records of the patients seeking medication at the specified hospital. It is difficult to know exactly as to what kind of staining dye used, leave alone checking for the quality or expiration date of

the Giemsa used. In case this has been told by the laboratory technologists in the hospital, better to say so or if this is a standard operational procedure at the hospital, it was better presented that way. There was also spelling error for the staining dye 'Giemsa'. It shouldn't be written as 'Gimsa'

5. Findings of the study were clearly introduced with good statistical analysis in Tables (1, 2 and 3). However, data presented in these tables were DUPLICATED in figures except for Table 1. For instance, Figure 1 shows all data from Table 2 (all malaria prevalence data, Pf, Pv, and mixed infection), Figure 2 included data from Table 3 (data on seasonal variation). To be exact, Tables 2 & 3 are enough to present all these data. The two Figures (Fig.1 & 2) are unnecessarily included and add no value except duplicating the same findings. To my understanding, duplication of the same data using different ways of data presentation including Figures and Tables is unscientific and unacceptable!!!
6. In addition, although not necessary to include in the current document, Figures (1, and 2) lack appropriate labeling of their axis. Except Figure 3, in the two Figures (1 and 2), X and Y axis were not labelled. It is impossible to know exactly what these axis's are indicating! Even Figure 3 itself contained incomplete labeling; only Y-axis was labeled as prevalence (%/#???)].
7. Table 1 is not self-explanatory. It has a jumble of data hard to read and understand. What does columns under year are indicating? It seems to show the number of positive cases and percent. But the table doesn't tell this.
8. Discussion section is comparatively weak. It is more of focusing on comparing and contrasting this finding with others reported elsewhere. There was no information or data presentation about what actually happened over the six years period. What kind of control efforts were implemented in these years in the study area which might contributed for the reduction of malaria burden in the study area. What should be done to ensure achievement of national malaria eradication goal set by 2030 [President Malaria Initiative (PMI), 2017)]?
9. While prevalence of different plasmodium species in the study site were compared with findings from other study sites, the study ignored some essential variables such as climatic conditions, where temperature is one of the critical factors that determine the incubation of plasmodium species in their vector body (https://doi.org/10.1186/1475-2875-3-41). In addition, response of these plasmodium species to the common interventional methods such as LLINs and IRS could differ (WHO, 2015, Control and Elimination of *P. vivax* Malaria a Technical Brief). This could have been one of the possible explanations for the dominancy of *P. vivax* at early years of this study, besides their unique biological and physiological differences.
10. Conclusion section of the study is more of a narrative of the whole finding. It is better focused on the primary outcomes of the study. Also, in the last sentence of the section it was stated that "the prevention and control activities should be continued and strengthened", when none of these control efforts were neither assessed nor presented in the study.