Anaemia and malaria in low malaria transmission settings: Prevalence, determinants, and association with malaria control interventions

Summary

This study aimed to describe the anaemia burden in Sudan and identify its socio-economic determinants in three key populations (women in reproductive age categorized by pregnancy status and children under 5). In addition, this study examined the relationship between malaria and anaemia as well as the impact of community-level utilization of malaria control interventions on malaria infection and on anaemia.

Findings in Chapters 2 and 3 showed high prevalence of anaemia, with noticeable variation at sub-national level among pregnant and non-pregnant women and children under 5. The variation by type of place of residence was not significant in pregnant women and was in favor for under 5 children in camps compared to the host community. As per the identified socio-economic determinants, both pregnant and non-pregnant women were exposed to the consequences of poor public sanitation, which, in one way or another, affected anaemia status of those populations. The identified association between maternal anaemia and childhood anaemia may indicate that anaemia runs in families with underlying causes, most likely, related to household. It is evident from this study that malaria infection determined anaemia in all studied groups (pregnant and non-pregnant women and under 5 children). Anaemia in under 5 children was found to vary by age category.

As demonstrated in chapters 4 and 5, utilization of all assessed malaria control interventions was low (except for indoor residual spraying (IRS)). This study found that only IRS coverage (in IRS targeted areas) was associated with malaria infection, and only community-level utilization of malaria diagnosis was associated with malaria infection (in LLINs targeted areas). None of the studied interventions was associated with anaemia. The absence of an effect of the community utilization of these interventions (LLINs and artemisinin-based combination therapy) may be a result of the low utilization or the low malaria transmission state of the area.

Findings from this study urge the need of appropriate actions to respond to the high malaria burden, with focused priority on population and areas mostly affected. IRS with carbamate-based insecticide and community utilization of malaria diagnosis have demonstrated a noticeable impact on malaria infection thus should be strengthened and maintained. Reasons for and actions to enhance the community-wide utilization of malaria interventions should be addressed. This study has further demonstrated that anaemia may not be an appropriate indicator to assess the burden of malaria or to evaluate the impact of malaria interventions in low malaria transmission settings.