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Malaria-Visceral leishmaniasis co-infection and their associated factors among migrant laborers in agricultural camps of west Armachiho district, Northwest Ethiopia.

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Background: Malaria and leishmaniasis are the two largest parasitic killers in the world. Due to geographical overlap of these diseases, malaria-visceral leishmaniasis co-infections occur in large populations and exist in different areas even if they have been poorly investigated. Objective: The aim of this study was to determine Malaria-Visceral leishmaniasis double burden and their associated factors among migrant laborers. Methods: Community based cross-sectional study was conducted from October-December 2016 on 178 migrant laborers selected by proportionate two stage sampling method in Agricultural camps of the West Armachiho district. Standardized questioner was used to collect socio-demographic data and risk factors. Capillary blood was collected for Giemsa stained blood film examination to detect and identify Plasmodium parasites. Recombinant kinensin (rk39) antigen test was performed to detect *leishmania donovani* antibody. Data was coded, entered, checked for completeness and analyzed using SPSS version-20 statistical software. Chi-square test was applied to show a significant association between variables. P-value < 0.05 was considered as statistically significant.

Findings: A total of 178 migrant laborers were included in this study. Of these, 74.2% belong to the age group 15-29; 61.2% come from lowland areas and 48.3% visit the area more than four times. Sero prevalence of visceral leishmaniasis was 9.6% and 22.4% of tested migrant laborers were malaria infected. Plasmodium falciparum was the predominant species accounting 72.5%. The overall prevalence of malaria-visceral leishmaniasis coinfection was 2.8% (n=5). Of the total migrant laborer, 47.8% were used bed nets, of them 1.2% were malaria-visceral leishmaniasis co-infected; 72.5% were used outdoor sites as usual sleeping site, among them 3.1% were malaria-visceral leishmaniasis co-infected; 60.1% were migrants, of which 2.8% were malaria-visceral leishmaniasis co-infected. All variables were not significantly associated with malaria-visceral leishmaniasis coinfection (P>0.05).

Conclusion: The prevalence of malaria-visceral leishmaniasis coinfection was low and it not associated with residence, number of visits, bed net utilization and outdoor sleeping habit of migrant laborers. Attention to screen migrant laborers for both malaria and visceral leishmaniasis is required by using more sensitive and specific diagnostic tools in such study areas.