Malaria prevalence,knowledge,perception,preventive and treatment behavior among military in Champasak and Attapeu,Lao PDR : a mixed methods study

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Abstract

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Abstract

Background: Malaria is a major health problem in Lao People's Democratic Republic (Lao PDR) with high transmission in remote and forest areas, particularly in the South. The military is at risk of malaria infection especially those deployed in forest areas. This study determined the prevalence of malaria infection and assessed knowledge, perception, preventive and treatment behaviour regarding malaria among military personnel in two southern provinces in Lao PDR.

Methods: Quantitative and qualitative approaches were undertaken in Champasak and Attapeu provinces in 2017. From 313 military personnel, quantitative data were collected through questionnaire-based interviews and blood samples used for parasite detection by polymerase chain reaction (PCR). Qualitative data were collected through 7 focus group discussions and 17 in-depth interviews among 49 military personnel. Fisher's exact test and Mann-Whitney U test were used to assess the association between malaria infection and participant characteristics. Content analysis for qualitative data was performed to explore perception and treatment behaviors regarding malaria.

Results: The prevalence of malaria infection was 11.2% (*P. falciparum*: 1.3%, *P. vivax*: 9.3% and mixed infections: 0.6%). Many participants understood that malaria is transmitted through mosquito bites, although they did not necessarily know the name of vector mosquitoes (*Anopheles*). Surprisingly, more than a half also believed that malaria is transmitted through drinking stream water. One-third of the participants used long-lasting

insecticidal nets. Due to limited supply, participants were often unable to use mosquito repellent and coils when necessary. Because participants were unable to receive timely diagnosis and appropriate treatment for malaria in their camps, they commonly practiced self-treatment using antibiotics, painkillers and/or traditional medicines. They only go to a healthcare facility through their supervisor if their conditions worsen.

Conclusions: The prevalence of symptomatic and asymptomatic malaria were conspicuous among military in forest areas. Many participants believed that malaria is transmitted not only by mosquito bites, but also from drinking stream water. Preventive equipment was often insufficient. Self-treatment was practiced before referring to healthcare facility. To further prevent military from contracting malaria, the National Malaria Control Program and military body should provide adequate and suitable health education, protective equipment, and on-site malaria case management.