

## ABSTRACT

**Introduction:** The trend in the composition of the *Plasmodium vivax* malaria is increasing in Myanmar. Primaquine is the drug of choice for the prevention of the relapse cases in *Plasmodium vivax* infection. This study aimed to explore the barriers and enablers of adherence to the 14-day primaquine treatment regimen and potential strategies to improve it.

**Methods:** This was implementation research with the mixed-method study approach using a cross-sectional study design. In the quantitative study, 310 *Plasmodium vivax*-infected patients who were already administered the primaquine treatment regimen during March to June, 2023 were involved. In the qualitative study, 22 government staffs, 6 focal persons from the non-governmental organizations, 8 community malaria volunteers, and 12 *Plasmodium vivax*-infected patients were involved.

**Results:** Among the 310 *Plasmodium vivax*-infected patients, 9.4% of them did not adhere to the regimen. The patients from the supportive group of patient-related factors (aOR: 13.8, 95% CI: 4.0-46.9), therapy-related factors (aOR: 1.7, 95% CI: 0.5-5.6), and socioeconomic factors (aOR: 40.6, 95% CI: 6.4-257.9) were with the higher odds of adhering to the 14-day primaquine treatment regimen. The main reasons for not completing the regimen were forgetting to take primaquine (41.4%), intentionally stopped taking primaquine after relieving their malaria symptoms (31.0%), suffering minor adverse effects (20.7%), and stopped taking primaquine as their malaria symptoms were getting worse (6.9%). The qualitative findings were also consistent with them. On the other hand, 27.7% of the patients were impatience on taking the 14-day long-term course of the regimen. Meanwhile, patients who got reminder from their family members were more likely to adhere the regimen ( $p < 0.001$ ). Adoption and sharing the inappropriate information about the regimen were also hindering the adherence to the regimen. Participants also highlighted that some of other patients may not have to receive the full course of primaquine because of the inadequate supply of primaquine.

**Conclusions:** The male patients at the working age groups, impatience on taking long-term course by the patients, adoption and sharing the inappropriate information about the regimen within the community, inadequate stock of primaquine, and insufficient healthcare providers for providing malaria diagnosis and treatment services were hindering the adherence to the 14-day primaquine treatment regimen. Patients who received the supervised close-care were pronounced to adhere the regimen.

**Keywords:** *Plasmodium vivax*, Malaria, Relapse cases, Primaquine adherence, Elimination