Evaluating Pictogram-Based Medication Labelling for Antimalarial Dosing by Caregivers in Rural Liberia: A Systematic Review

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Abstract

In rural Liberia, low literacy rates among caregivers hinder correct dosing of antimalarial medications for children. Text-based labels are often misunderstood, contributing to treatment failure and drug resistance. This review uses Bomi County as a representative setting to examine alternative communication strategies. This systematic review evaluated the impact of a pictogram-based medication label on the accuracy of antimalarial dosing by caregivers in rural Bomi County, Liberia. It aimed to synthesise evidence on efficacy, user comprehension, and implementation challenges. A systematic review of published and grey literature was conducted. Studies were included if they evaluated pictogram-based labelling for antimalarials in low-literacy, rural African settings, with focus on data applicable to Liberia. Data were extracted and analysed thematically. Pictogram-based labels significantly improved dosing accuracy compared to text-only instructions. Key evidence showed the proportion of caregivers administering the correct dose increased substantially with pictogram aids. Critical themes included the necessity for culturally adapted imagery and the value of brief verbal reinforcement alongside the visual aid. Pictogram-based labelling is an effective, low-cost intervention for improving antimalarial dosing accuracy by low-literacy caregivers in rural Liberia. It addresses a key gap in health communication with potential to reduce morbidity and counter drug resistance. Integration of standardised, culturally validated pictogram labels into national antimalarial drug packaging is recommended. This should be supported by community health worker training to provide brief counselling using the labels. Further operational research on sustainable national scale-up is required. health literacy, pictograms, medication labelling, antimalarials, caregivers, rural health, Liberia, systematic review This review consolidates evidence on pictogram-based labelling for antimalarials, providing a synthesis to inform public health policy and practice aimed at improving treatment adherence in low-literacy communities in Liberia and similar settings.

ABSTRACT-ONLY PUBLICATION

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