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## Adverse drug events and medication errors in African hospitals: A systematic review

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**Background:** Medication errors (MEs) and adverse drug events (ADEs) are universal problems contributing for a large burden to patient harm. The burden of the problem in Africa is unclear. The aims of this study were to review the literature on African medication safety in hospital settings with a focus on the rate and the nature of MEs and ADEs and to identify the factors contributing to MEs.

**Method:** We searched PubMed, Medline, EMBASE, Web of Science and Global Health databases up to November 2015 and hand-searched the reference lists of included studies. Original studies published in English that investigated ADEs and/or MEs in any patient population in the hospital setting were included.

**Results:** Forty one studies were included; of these, 26 focused on MEs, 13 on ADEs and 2 studies on both outcomes. These studies were conducted in 9 (of the 54) African countries. Approximately, one in every 12 patients was admitted to hospital with ADE and ADE was accounting for 1.5% to 6.3% of adult hospital admissions, but a lower rate of 0.6% was reported in children. The reported ADE occurrence rate during hospital stay was ranged from 2.7% to 49.5% for adult patients and 1.2 % to 7.7% for the pediatrics. ADE-related fatalities were reported in 0.07% to 2.9% of patient admissions to hospital. One-fifth to more than half of ADEs were severe reactions; however, up to half were deemed preventable. The most reported types of MEs were prescribing errors, occurring in 13% to 76% of all prescriptions and most importantly, 1.2% to 57% of the prescriptions were evaluated to have dosing problems. Only five studies attempted to assess the clinical significance of medication errors. Major contributing factors for MEs reported in these studies were the lack of inadequate knowledge and training, communication failures and workload.

**Conclusion:** This review indicates that MEs are relatively common in the African healthcare setting and the impact of ADEs is substantial but preventable. There is a limited of medication safety literature in African countries though there is evidence this is increasing over the last decade. Designing preventive strategies targeting the most likely contributing factors is of paramount importance.

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## Synthesis of arylpyrrole chalcone hybrids as anti-plasmodial and anti-trypanosomal agent

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Series of arylpyrrole chalcone hybrids were synthesized by Claisen Schimdt condensation of appropriate acetophenones with appropriate aromatic aldehydes, in the presence of aqueous solution of NaOH and methanol at room temperature. Synthesized chalcones were evaluated for their *P. falciparum* and trypanocidal activities. These compounds were found to have low cytotoxicity against human cells and showed some significant activity against trypanosome and little to no activity against *P. falciparum* strain with the chloro substituted chalcone being the most potent anti-trypanosomal agent of the entire series. Characterization of these compounds was carried out by means of their IR, <sup>1</sup>H and <sup>13</sup>C NMR, HRMS and elemental analysis.

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