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The Risk of Increased Antimicrobial Resistant Pathogens in COVID-19 Pandemic

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ABSTRACT

Background: Antimicrobial resistance (AMR) is a resistance of microorganisms to an antimicrobial medicine which were previously active against them to cured infections. AMR is caused by the inappropriate use of antimicrobial medicines and other active agents. COVID-19 pandemic response strategies led to a diversion of attention and resources in health care systems to prevent the escalation of the pandemic. This has placed a great barrier to diagnosis and treatment of other illnesses that share common symptoms with COVID -19, and that has consequently increased the practice of self-medication with antimicrobials in many Low- and Middle -Income Countries (LMIC). The mitigation strategies of COVID-19 pandemic, particularly the partial or total lockdown, and restricting access to health care facilities have further increased the demand of antimicrobial agents from unauthorized outlets in communities for inappropriate use.

Methods: We conducted a cross-sectional survey of 162 randomly selected individuals that visited medical stores and 170 medical store owners to evaluate the level of self-medication with five oral broad-spectrum antibiotics and anti-malarial drugs during the lockdown in Kano, Nigeria.

Results: 111 of 162 (68.5%) of the participants practiced self -medication with antimicrobials to treat symptoms of ailments including malaria and common cold. Up to 26 of 162 (16 %) indicated using sanitizers. Irrational application of hand sanitizers to the nostrils and elbows was observed among 7 of 26 (26.7%) hand sanitizer users. Of the 170 medical shop owners, 103 (60.5%) claimed to have sold antibiotics to clients without a doctor's prescription, while 78 (46%) combined antimalarial and antibiotics to treat any form of fever.

Conclusions: Mitigating strategies for COVID -19 could result in the increased antimicrobial use that is likely to exacerbate the AMR public health problem in LMIC. Policy makers need to consider the potential risk of increased AMR amidst response strategies to COVID-19 in LMIC.

Key words: Antimicrobial, antimalarial, antimicrobial resistance, COVID-19, low- and middle-income countries