Head-to-head comparison of nasal and nasopharyngeal sampling using SARS-CoV-2 rapid antigen testing in Lesotho

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OBJECTIVES: To assess the real-world diagnostic performance of nasal and nasopharyngeal swabs for SD Biosensor STANDARD Q COVID-19 Antigen Rapid Diagnostic Test (Ag-RDT). METHODS: Individuals >/=5 years with COVID-19 compatible symptoms or history of exposure to SARS-CoV-2 presenting at hospitals in Lesotho received two nasopharyngeal and one nasal swab. Ag-RDT from nasal and nasopharyngeal swabs were performed as point-of-care on site, the second nasopharyngeal swab used for polymerase chain reaction (PCR) as the reference standard. RESULTS: Out of 2198 participants enrolled, 2131 had a valid PCR result (61% female, median age 41 years, 8% children), 84.5% were symptomatic. Overall PCR positivity rate was 5.8%. The sensitivity for nasopharyngeal, nasal, and combined nasal and nasopharyngeal Ag-RDT result was 70.2% (95%CI: 61.3-78.0), 67.3% (57.3-76.3) and 74.4% (65.5-82.0), respectively. The respective specificity was 97.9% (97.1-98.4), 97.9% (97.2-98.5) and 97.5% (96.7-98.2). For both sampling modalities, sensitivity was higher in participants with symptom duration </= 3days versus /= 80%. The high agreement between nasal and nasopharyngeal sampling suggests that for Ag-RDT nasal sampling is a good alternative to nasopharyngeal sampling.

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