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COVID-19 vaccine acceptance and hesitancy in low- and middle-income countries

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Widespread acceptance of COVID-19 vaccines is crucial for achieving sufficient immunization coverage to end the global pandemic, yet few studies have investigated COVID-19 vaccination attitudes in lower-income countries, where large-scale vaccination is just beginning. We analyze COVID-19 vaccine acceptance across 15 survey samples covering 10 low- and middle-income countries (LMICs) in Asia, Africa and South America, Russia (an upper-middle-income country) and the United States, including a total of 44,260 individuals. We find considerably higher willingness to take a COVID-19 vaccine in our LMIC samples (mean 80.3%; median 78%; range 30.3 percentage points) compared with the United States (mean 64.6%) and Russia (mean 30.4%). Vaccine acceptance in LMICs is primarily explained by an interest in personal protection against COVID-19, while concern about side effects is the most common reason for hesitancy. Health workers are the most trusted sources of guidance about COVID-19 vaccines. Evidence from this sample of LMICs suggests that prioritizing vaccine distribution to the Global South should yield high returns in advancing global immunization coverage. Vaccination campaigns should focus on translating the high levels of stated acceptance into actual uptake. Messages highlighting vaccine efficacy and safety, delivered by healthcare workers, could be effective for addressing any remaining hesitancy in the analyzed LMICs.

A safe and effective vaccine is a critical tool to control the COVID-19 pandemic. As of 23 June 2021, 23 vaccines had advanced to Stage 3 clinical trials[1] and more than a dozen had been approved in multiple countries[2]. The BNT162b vaccine from Pfizer–BioNTech, for example, has been approved in about 90 countries, while the ChAdOx1 nCoV-19 vaccine from Oxford–AstraZeneca has the most country authorizations at 115[3]. At present, however, global vaccine distribution remains highly unequal, with much of the current supply directed toward high-income countries[4].

Although effective and equitable distribution of COVID-19 vaccines is a key policy priority, ensuring acceptance is just as important. Trust in vaccines as well as the institutions that administer them are key determinants of the success of any vaccination campaign[5]. Several studies have investigated willingness to take a potential COVID-19 vaccine in high-income countries[6–9], and some studies have included middle-income countries[10,11]. Less is known, however, about vaccine acceptance in low-income countries where large-scale vaccination has yet to begin. Understanding the drivers of COVID-19 vaccine acceptance is of global concern, because a lag in vaccination in any country may result in the emergence and spread of new variants that can overcome immunity conferred by vaccines and prior disease[12,13].

A full list of affiliations appears at the end of the paper.

COVID-19 Vaccine Acceptance and Hesitancy in Low- And Middle-Income Countries

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