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Efficacious COVID-19 vaccines increase uptake, new global study finds

Despite the unprecedented progress in developing COVID-19 vaccines, global vaccination levels needed to reach herd immunity remain a distant target while new variants keep emerging. According to a new global study, this will change if efficacious vaccines are offered.

The study found that uptake increases by (95% vs 60%), while an increase in severe side effects leads to reduced uptake.

Reporting their findings to the journal of *Social Science & Medicine*, the researchers found that many individuals would prefer to delay vaccination by three months to obtain a more efficacious vaccine, which increases further if the low efficacy vaccine has a higher risk of severe side effects.

The study was conducted in 18 countries across six continents under the leadership of University of Leeds Professor Stephane Hess, who is also an Honorary Professor at the University of Cape Town (UCT).

The respondents were presented with six hypothetical vaccination choice scenarios. In each choice scenario, they could choose between two different vaccines in each choice scenario. The vaccines were described on the basis of five key vaccine characteristics, namely, risk of infection, risk of serious illness, estimated protection duration, risk of mild side effects, and risk of severe side effects.

Individuals who always choose a vaccine across their six tasks, independent of the characteristics of the vaccine, formed the largest group in all countries. The researchers observed a wide variation of vaccine uptake across areas, with the lower numbers in some study areas being partly in line with past evidence. The uptake proportion for South Africa was 84.1, and it was not the lowest.

Impact of race/ethnicity was found in two cases: a 3.4% higher probability of vaccine acceptance for Asian respondents in the United States (vs white), and a 10.8% lower probability for vaccine acceptance for whites in South Africa (vs blacks).

Dr Olufunke Alaba, co-principal investigator in the study and senior lecturer at UCT's Health Economics Unit, School of Public Health and Family Medicine, said: "Our findings

show that for vaccines with a performance similar to what is currently available, a large majority of the population would accept to be vaccinated. However, the levels of uptake we predict are not guaranteed to be sufficiently high to achieve herd immunity. Greater availability of the most highly performing vaccines may be needed to achieve that objective, as well as concerted efforts to reduce the share of vaccine-resistant individuals in the population."

Given the large amount of heterogeneity, Alaba said no single vaccine is likely to be acceptable to all individuals.

"Our scenarios show that the availability of more than one vaccine at the same time may lead to a further small increase in overall vaccine uptake," she said. "It appears that the highest quality vaccines, which would be most preferred by individuals according to the results of our study, have the largest supply constraints, at least in some countries. This raises questions about how best to ration and prioritise supply."

According to Alaba, characteristics of vaccines matter, both in terms of the decision to be vaccinated or not, and in the choice between different vaccines.

"The complex mix of culture, political ideology, information, trust in government, and perceived risks are likely to play a role, an issue to be studied in a broader response to the COVID-19 context," she said.

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