



## POLICY BRIEF

National Income Dynamics  
Study (NIDS) – Coronavirus  
Rapid Mobile Survey (CRAM)

# COVID-19 vaccine hesitancy in South Africa: Results from NIDS-CRAM Wave 4

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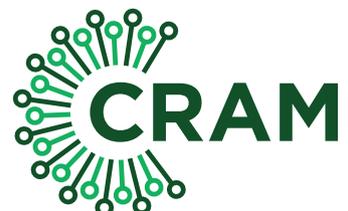
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**N.i.D.S.**  
NATIONAL INCOME DYNAMICS STUDY



CORONAVIRUS RAPID MOBILE SURVEY 2020

# COVID-19 vaccine hesitancy in South Africa: Results from NIDS-CRAM Wave 4<sup>1</sup>

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The arrival of vaccines signalled a new era in South Africa's fight against the COVID-19 pandemic, with the focus shifting from containment to eliminating the pandemic. However, given uncertainty about vaccine delivery dates, logistical concerns, and vaccine hesitancy, it looks increasingly unlikely that the virus will be under control by the end of 2021. In this study, we focus on vaccine hesitancy, analysing the recently released NIDS-CRAM wave 4 data that asked respondents about their willingness to be vaccinated, if vaccinations were available. We track reasons for hesitancy as well as correlates with hesitancy.

## **71% of South African adults say they would get vaccinated if a COVID-19 vaccine was available.**

In the latest wave of NIDS-CRAM all respondents were asked *"If a vaccine for COVID-19 were available, I would get it"* and four response options were read aloud: *"Strongly agree, somewhat agree, somewhat disagree, and strongly disagree"*. The 71% willingness figure is made up of two groups: the 55% choosing 'Strongly agree' and the 16% selecting 'Somewhat agree.' Among the 29% who did not agree, 16% strongly disagreed, 8% somewhat disagreed, and just under 6% of adults reported that they do not know if they would accept a vaccination. Relative to other countries then, vaccine acceptance is higher than recent estimates from the US and France, but lower than China, Brazil and the UK.

**Among the 29% of respondents who were vaccine hesitant, the three leading reasons for their hesitancy were that they were worried about the side effects (31%), did not believe it was effective (21%) or did not trust vaccines in general (18%).** If respondents were hesitant about getting a vaccine they were asked for reasons why they were hesitant. The vast majority (84%) only cited one reason. Jointly, these three reasons covered 70% of the reasons for vaccine hesitancy. Importantly, only 8% of those exhibiting vaccine hesitancy attribute their hesitancy to a low risk of getting COVID-19.

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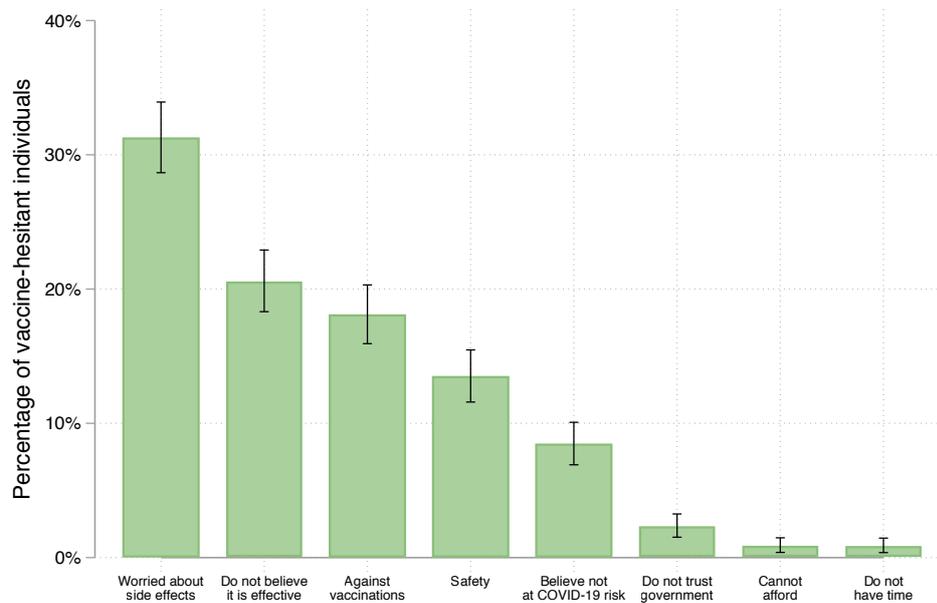
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**Figure 1: Main reasons for COVID-19 vaccine hesitancy, February/March 2021**



**Authors'** own calculations. Source: NIDS-CRAM Wave 4 (2021).

**Notes:** [1] Estimates weighted using sampling weights which include the top-up sample, scaled to NIDS Wave 5, after accounting for the complex survey design. [2] Sample restricted to vaccine-hesitant respondents as defined in Section 2. [3] Capped spikes represent 95% confidence intervals.

**Our estimate is the highest estimate of vaccine intention for adults in South Africa to date.** Two other recent surveys have found similar levels of vaccine intention. The University of Johannesburg (UJ) and Human Sciences Research Council's (HSRC) COVID-19 Democracy survey (Runciman et al., 2021), conducted in December 2020 and January 2021 estimated a vaccine intention rate of 67% amongst South Africans, while the IPSOS-World Economic Forum survey (2021) reported a 64% estimate at the end of February 2021. Caution is needed when comparing NIDS-CRAM estimates to other surveys due to varying sampling strategies and subsequent representivity. Given that the NIDS-CRAM sampling frame was drawn from an existing nationally representative survey (the National Income Dynamics Study) we would argue that the NIDS-CRAM estimates are the most representative vaccine intention results to date. The majority of the UJ-HSRC survey's respondents completed the questionnaire via smart phones and the IPSOS-WEF was based on a small sample, recruited online.

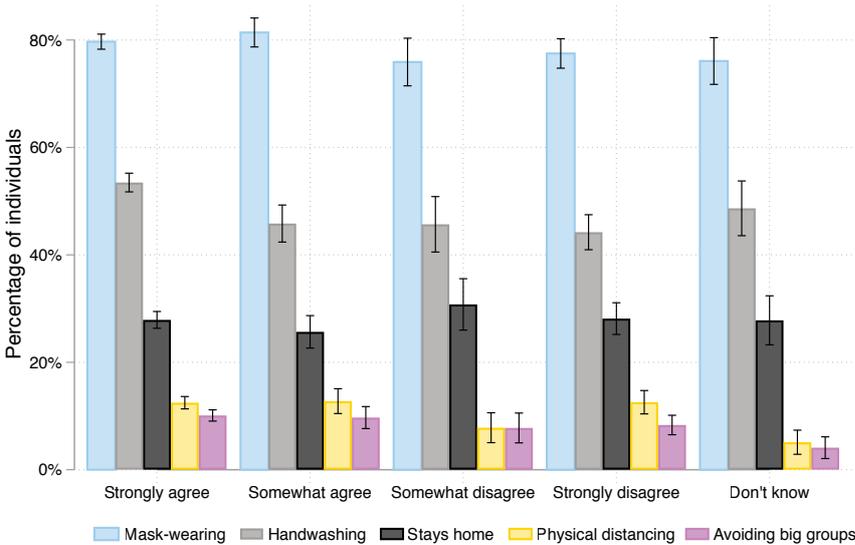
**Those most at risk of COVID-19 were more willing than the general population to accept a vaccine.** As predicted by theories such as the health belief model, the Wave 4 data show that increased mortality risk lowered reported vaccine hesitancy. The measures of mortality risk that were significant in the analysis were self-reported chronic conditions and advanced age. Chronic conditions were self-reported and referred specifically to lung conditions, heart conditions, diabetes, HIV and TB. After controlling for other factors, those with chronic conditions were seven percentage points less likely to be vaccine hesitant, and those 60 and over were six percentage points less likely. Worryingly, those that are obese or have tested as hypertensive were not more likely to accept a vaccine.

**There are social pockets with much higher levels of vaccine hesitancy.** For instance, we find significantly higher levels of vaccine hesitancy amongst the youth (18-24 years). Compared to the Christian majority, non-religious respondents, Hindu respondents and African spiritualists were more likely – 10, 31 and 7 percentage points respectively – to say that they would not get a vaccine if it were available. These findings were robust to changes in how socioeconomic status was specified. For subgroups, populations, and regions where hesitancy is higher, additional vaccine promotional efforts would be required. In areas, or for groups, where hesitancy is low and intention is high, it is vital to minimise the time cost of vaccination to make it as easy and burden free as possible.

We approximate socioeconomic status through four different measures (a poverty index, income quintiles, grant receipt, and recent household hunger), but **find no evidence of a strong and monotonic<sup>8</sup> relationship between any measure of socioeconomic status and vaccine hesitancy.** We do, however, find evidence of a pathway via education: respondents with only primary schooling or less are more likely to be vaccine hesitant.

**In line with what has been reported internationally, individuals who trust social media as an information source were significantly more likely to exhibit vaccine hesitancy.** In Wave 1 respondents were asked the following question: “Where do you get information about the Coronavirus that you trust?” Respondents who reported social media as their trusted information source were seven percentage points more likely to be vaccine hesitant. Social media can also, however, be a cost-effective way to spread accurate and updated information directly to users and subpopulations, as we have seen with the government COVID-19 WhatsApp service. Infodemiological and infoveillance methods can be used to monitor fake news, myths and misinformation. This way falsehoods can be flagged and addressed at an early stage. It would be important to study and document the government’s national and provincial efforts to date as anecdotal evidence suggests there has been far less effort from the government to counter misinformation about vaccines compared to earlier campaigns to promote COVID-19 prevention and symptom knowledge. Such a discrepancy could help explain why we find that those who trust information from health workers and government had better knowledge of COVID-19 symptoms and were more likely to wear masks and keep a safe distance from others while they do not have lower levels of COVID-19 vaccine hesitancy (Burger et al., 2020).

**Figure 2: NPI adherence and willingness to get a COVID-19 vaccine, February/March 2021**



**Authors’ own calculations. Source: NIDS-CRAM Wave 4 (2021).**  
**Notes:** [1] Estimates weighted using sampling weights which include the top-up sample, scaled to NIDS Wave 5, after accounting for the complex survey design. [2] Capped spikes represent 95% confidence intervals.

Current COVID-19 vaccines are very effective at preventing people from falling ill or being hospitalised with COVID-19, but there is uncertainty regarding the ability of the vaccines to protect people from simply getting infected with or transmitting the virus. As such, continued, widespread adoption of non-pharmaceutical interventions (NPIs) remains crucial during vaccine roll-out. We analyse how the degree of NPI adherence varies by COVID-19 vaccine intentions. **We find relatively little variation in self-reported adherence to NPIs across COVID-19 vaccine intentions among South African adults.** This implies that policymakers may not need to rely heavily on vaccine beliefs to increase NPI adherence during the evolution of the vaccine roll-out. However, this should be continuously monitored as the adoption of NPIs may wane as the roll-out progresses.

8 Monotonic means that the relationship between the variables is either always increasing or always decreasing.

**It is vital to continue to track vaccine hesitancy over time.** Much uncertainty about the vaccination plans remains. Hesitancy is dynamic and responds to the shifts that occur regularly when new research on vaccine efficacy is released – especially relating to the COVID-19 variant that was first identified in South Africa. Hesitancy may also respond to COVID-19 outbreaks, vaccine availability and take up, as well as disinformation. Additionally, while the survey results on vaccine hesitancy are useful and can add value, these are stated intentions. Behavioural studies have shown that there may often be a large gap between stated intentions in response to a survey question and the actual choices and behaviour of individuals. We cannot assume that intentions will automatically translate into behaviour, but this gap may narrow with the decrease of uncertainty and fear as the rollout gathers momentum and a growing number of first-hand vaccination experiences can inform and correct misaligned expectations. In wave 5 of NIDS-CRAM we have added a number of additional probes, including open-ended questions, to ensure that we do not only continue to track vaccine hesitancy, but also understand the motivations behind it and with what conviction these beliefs are held.

## Limitations

We note the limitations of our study, especially in terms of reported behaviour and stated intentions. Our open-ended question about preventive behaviours tracks adherence to specific preventive measures in a binary way, without reflecting the frequency or fidelity of preventive behaviour (e.g. how often masks are worn, or whether they are worn properly). Also, we acknowledge that reporting bias due to social desirability bias may affect our findings. Finally, we are aware that our survey questions on vaccine hesitancy reflect a stated intention, and the literature has shown substantial gaps between stated intentions and realised decisions.

## Policy recommendations

- **Counter falsehoods via social media.** Our study shows that trusting social media as an information source significantly increases the likelihood of vaccine hesitancy. While social media has often been demonised as a negative influence and channel for spreading conspiracy theories, it can also be a cost-effective way to convey accurate and updated information directly to targeted subpopulations – as we have seen with the government COVID-19 WhatsApp and SMS services. Infodemiological and infoveillance methods can be used to monitor fake news, myths and misinformation, and to flag and address disinformation quickly. Messages disseminated via social media to counter misinformation should also be incorporated into other platforms, such as government communication channels, newspapers, and television, to increase the intensity of the messaging and to ensure maximum reach (Hoffman et al., 2021)
- **Target messages and other interventions to specific social and age groups.** These clear differences in hesitancy levels between social groups show that there may be room for targeted approaches, especially with youth. Messaging must be on a platform favoured by the youth, e.g. TikTok, using language and visuals they understand and accept. For subgroups, populations, and regions where hesitancy is higher, additional intensive vaccine promotional efforts will be required. It is recommended that messages are developed in collaboration with key actors of local geographical areas and subgroups to ensure that messages are delivered appropriately and have maximum impact.
- **Pilot and evaluate behavioural nudges.** Given that we are initiating our large-scale vaccination roll-out much later than other countries, we can learn from their successes and failures.
  - **Minimise hassle factors and time costs** that can drive intention-behaviour gaps. The steps to identify vaccine availability, make an appointment, and attend a clinic should be as low-barrier and frictionless as possible. This requires effective communication with the public. The latter must be matched with system efficiencies in order to ensure that expectations regarding the vaccine services provided is matched with what the services

- deliver (Volpp et al., 2020; Bloomberg Philanthropies, 2021).
- Provide opportunities to **pre-commit** to getting a vaccine through pre-registration portals or sign-ups. This also gives people an action to take before the vaccine is widely available (Volpp et al., 2020).
  - Foreground the **social benefits** of the vaccine by highlighting how it can fast-track economic recovery, including jobs, and greater stability (Dzinamarira et al., 2021; WHO, 2020).
  - Leverage **loss aversion** in communications, focusing on possible regret if people miss the opportunity to be vaccinated. In particular, messaging that a vaccine dose has been “**reserved for you**” invokes scarcity, loss aversion and reciprocity (Milkman et al., 2021).
  - For two-dose regimens, use evidence-based **default scheduling** and reminder messages to maximise second dose completion (Milkman et al., 2021).
  - Increase **visibility of pro-vaccination social norms** by purposeful selection of central sites for vaccination centres and providing ways for people to show that they have been vaccinated (WHO, 2020).
  - Solicit and promote **endorsements from trusted community members, social media influencers, traditional healers, traditional leaders and religious leaders** (WHO 2020; Volpp et al., 2020; Bloomberg Philanthropies, 2021)
  - **Track vaccine hesitancy over time.** Due to uncertainty surrounding the vaccination plan and the shifts that occur regularly when new research on vaccine efficacy is released – especially relating to the variant first identified in South Africa – hesitancy is dynamic and will likely respond to COVID-19 outbreaks and to vaccine availability and take up, as well as to news and disinformation. More importantly, while the survey results on vaccine hesitancy are useful and can add value, these are stated intentions and behavioural studies have shown that there may often be a large gap between stated intentions in a survey question and the actual choices and behaviour of individuals. We cannot assume that intentions will automatically translate into behaviour.
    - In our tracking of vaccine hesitancy it is important to structure the **choice set** on vaccine intentions questions to allow people to record intentions including “wait and see” or “no but I might change my mind” rather than a definite “no”.
    - Ask people “**what’s your why?**” for getting vaccinated as a way to increase intention.

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