

An explorative study to assess the impact of the COVID-19 pandemic on uptake of child routine immunizations in South Africa

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Background

Additional to the direct health and economic impacts of the COVID-19 pandemic, routine immunization of children for vaccine-preventable diseases has severely suffered in the COVID-19 pandemic. In 2020, 23 million children missed basic childhood vaccines through routine health services, the highest number since 2009 and 3.7 million more than in 2019 (UNICEF, 2021). South Africa experienced a decline in the number of children who were fully immunized in 2020 compared with 2019 where seven of the nine provinces showed a decline in children under one year fully immunized (Pillay et al., 2021).

Disruption of immunization programs can reverse several progressive years that brought vaccine preventable diseases under control. The consequences of drop in immunization are visible through 21 large and disruptive measles outbreaks around the world, within which Africa and the East Mediterranean region reported the most cases of measles (WHO, 2022).

Objectives

Understanding the demand and supply issues that negatively impact routine immunization (RI) is critical in pandemic preparedness and future proofing the expanded program of immunization thereby averting infections and saving lives of children.

This explorative qualitative study aimed to use a behavioural science lens to understand the impact of COVID-19 pandemic on the uptake of routine child immunization in South Africa from both a supply and demand lens.

Methods

A qualitative research study was conducted through in-depth interviews with 51 parents/caregivers of children below the age of 6 who missed/delayed 1 or more doses that were due during 2020-2022 using public facilities, and 12 health care providers working in immunization during the pandemic period.

The sample was drawn from South Africa across Urban and Rural provinces [Gauteng (urban), KZN (mixed) and Mpumalanga (rural)]. South African Demographic and Health Survey (SADHS) data was utilized to identify locations with children under five in the respective provinces. Door-to-door recruitment was then conducted using a screening tool to consenting caregivers or parents of under six children who already access routine immunization from public health facilities. Telephonic interviews were conducted through trained moderators with a validated discussion guide. The transcripts were analyzed using thematic analysis.

Results

Prior to the pandemic, RI was considered a norm in South Africa, however, the pandemic created an 'active decision-making' moment, leading to inaction among some, in what was previously automatic behavior. During the COVID-19 lockdowns, caregivers were faced with a paradoxical decision of appraising the risk of COVID-19 exposure against the risk of their child developing a vaccine preventable disease, where the covid salience outweighed the risk of the missed dose. Furthermore, caregivers interpreted the communication from government as low urgency for RI during the lockdown, therefore deprioritizing the action. Fueling the inaction was the emergence of a 'bad vaccine' mental model, as caregivers viewed the COVID-19 vaccines as unfamiliar, unproven, rushed, ineffective and causing side effects/adverse events, non-consciously impacting existing vaccines as well. As the lockdown eased, supply side issues around accessing the vaccine at public facilities a barrier mentioned by most due to real or perceived lack of availability of particular vaccines and closure of clinics.

Graphs/Figures

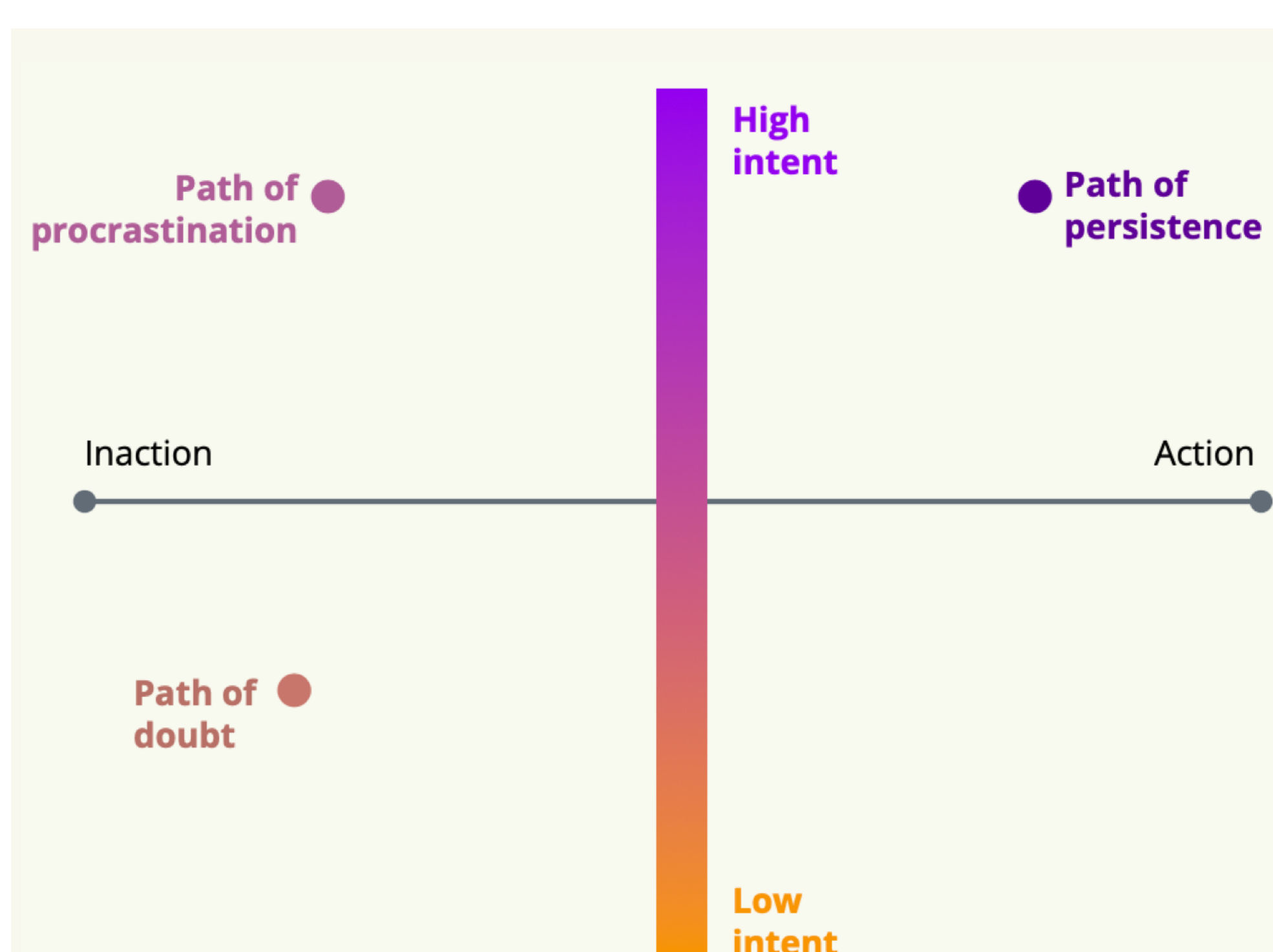


Figure 1: three distinct active decision pathways caregivers tended to take, differentiated by the extent they intended to seek routine immunisation and the degree to which that intention corresponded to actual RI-seeking behaviour.

Active decision-making resulted in three RI uptake pathways, each differing in their intention to seek RI and degree to which intent translated to action. Only one led to consistent RI uptake, and an unvaccinated status quo emerged for the other two paths.

- **Path of procrastination:** Caregivers experienced an intent – action gap, where they intended to immunize their children, but non-consciously delayed doing so, despite viewing RI in a positive light.
- **Path of doubt:** Rarely expressed as a complete refusal, COVID-19 triggered doubts about the necessity and safety of routine immunization resulting in parents avoiding immunizing their child until it was required for school enrolment
- **Path of persistent uptake:** Caregivers persisted by making repeated visits to health facilities to ensure that their children stayed up to date. They had a high awareness and trust in RI, had more than 1 child, and had higher socio-economic status which helped them keep their children's RIs up-to-date.

Conclusions

Routine immunization of children has suffered in the COVID-19 pandemic, due to both supply and demand side barriers.

This shift from default to active decision making creates a significant risk of RI backsliding in future pandemics. Governments especially in LMIC need to prepare for the immediate and lingering effects of disease outbreaks by building resilient health systems at community, primary healthcare, sub-national and national levels. The three identified pathways for uptake help decision makers account for distinct decision pathways and help support all caregivers for consistent RI uptake.

However, significant effort needs to be placed into understanding and engaging with procrastinating and doubtful caregivers.

Other newly developed vaccines may fall within the negative 'bad vaccine' mental model in the future, as more vaccine misinformation spreads posing a high risk of hesitancy and low uptake. Therefore, pandemic preparedness needs to strongly balance supply and demand side interventions.

Elaborate recommendations have been proposed for the level of communication interventions, service delivery interventions, health system preparedness intervention. Additionally path specific interventions for procrastination and doubt have also been articulated.

Acknowledgement

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