

## Short Report

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# COVID-19 in Pakistan and Papua New Guinea: reflections on mass testing and challenges

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## Abstract

The 2020 COVID-19 pandemic continues during 2021. Some countries are revisiting their containment measures to be eased or re-imposed after massive testing programs. Yet is testing itself a solution? Testing may be an important containment step, yet in low-income countries (LICs), it may be substantially challenging to carry out. This is because the situation in LICs is complexified by inadequate and corrupt economic, political, and healthcare systems in which testing is often beyond reach. Focusing on Pakistan and Papua New Guinea (PNG), we contend that the sparse number of recorded COVID-19 infections may demonstrate that both countries lack the required resources to conduct effective testing and deal with the pandemic. To appropriately tackle the pandemic, such countries need focus on implementing the measures they can and on public education about how viruses work and why it is so important to seek to contain their spread. Furthermore, we invite thorough studies to examine and analyze massive testing from various perspectives.

## Introduction

By January 2021, COVID-19 had already caused around 102 million cases and 2.19 million deaths worldwide (Johns Hopkins University, 2021). Yet from 2019 to 2021, differing forms of the pandemic – or differing pandemics – have emerged (see Ali, 2021). James (2020) has rightly argued that ‘the COVID-19 pandemic has morphed into what is now, in many ways, a new disease (COVID-20), even though resulting from the same agent, SARSCoV-2 [severe acute respiratory syndrome coronavirus 2]’, thus, ‘a vaccine, even an effective one, may not be the silver bullet’. Following the same argument, one can demarcate among COVID-19, COVID-20, and COVID-2021, not only based on virus morphosis but also on the disproportionate challenges and effects of these viruses at multiple levels, from individual to national to global (Ali and Davis-Floyd, 2022). These viral forms have had differential effects on high-income countries (HICs) and low-income countries (LICs) with distinguishable challenges related to existing socio-cultural, economic, and political factors.

Moreover, countries are revising their plans to either ease or more strongly impose their containment measures, such as lockdown and the wearing of personal protective equipment (PPE). Some countries, such as Austria, have made it legally compulsory to wear filtering face-piece 2 (FFP2) masks, and rapid vaccine rollout in various countries – most especially in HICs – is underway. Simultaneously, countries have considerably emphasized massive testing to locate and contain the virus via interrupting its transmission. Undoubtedly, testing is highly crucial to deeply understand the behavioral and epidemiological patterns of the virus and design proper strategies for appropriately dealing with it, as meaningful recommendations can emanate from testing results.

Yet crucial questions arise: Is large-scale testing accessible, practical, and affordable for every country, especially LICs such as Pakistan and Papua New Guinea (PNG)? And does investing in testing constitute the best use of their limited resources?

The simple answer to both questions is no. Testing is far less challenging in HICs than LICs, as the latter countries have multiple interrelated factors that complicate the processes of pandemic preparedness. For example, many countries in Africa and South Asia are plagued by corruption and by various forms of socio-cultural, economic, and (geo-)political disparities resulting in several pressing problems, such as widespread disease, malnutrition, economic poverty, and fragile healthcare systems.

To better comprehend these structures, herein we focus on Pakistan and PNG using content analysis. We chose these two countries because both countries reveal some similarities in their characteristics that we describe below. For this brief article, we have analyzed documents and reports produced by media, governments, and international non-governmental organizations such as the United Nations Development Programme (UNDP). The central questions, as mentioned earlier, which guided our research are as follows: (1) Is large-scale testing accessible,

practical, and affordable for LICs like Pakistan and PNG? (2) What are the socio-cultural, economic, and political factors that can impede efforts toward massive testing?

## Results: Socio-demographic factors, economic structures, healthcare profiles, and COVID-19

### *The case of Pakistan*

Ali and Ali (2020) critically revisited Pakistan's profile to reveal the underlying factors that make Pakistan vulnerable in the face of a critical pandemic, e.g., COVID-19, and that are related to socio-cultural, economic, and (geo-)political structures. To briefly present them, Pakistan holds the 152nd position out of 189 countries on the Human Development Index (HDI) (United Nations Development Programme (UNDP), 2019). Globally, it is the fifth most populous country, with a population of approximately 212.82 million (Ali and Ali, 2020). Although statistics are under contestation (e.g., either above 30% or below), it is agreed that around 25% of its people live below the poverty line (earning around US\$2 per day) (Ali *et al.*, 2020). Fifty percent of women do not have formal education, in contrast to 34% of men (Ali and Ali, 2020). Being in the last category of the Gender Inequality Index (GII), Pakistan's value is 0.747 (UNDP, 2019). Malnutrition is highly prevalent and has most critically affected women and children. For instance, 38% of children are stunted, 7% are wasted, and 3% are overweight (Ali *et al.*, 2020).

The country's healthcare system is in a critical state due to its lack of accessibility, affordability, and effectiveness. There are approximately 1,280 public sector hospitals; one hospital bed per around 1,610 people; one doctor per around 970 people; and one dentist per around 9,420 people (Government of Pakistan, 2019). Communicable diseases are substantially rising; for example, in Pakistan, numbers of HIV cases are growing at the second fastest rate in Asia (Ali *et al.*, 2020). Polio still exists in Pakistan as many children are not vaccinated against it, and for the same reason, measles outbreaks continue to occur. Hepatitis too is increasing; together, Pakistan and Egypt contain approximately 80% of the world's hepatitis-infected people (Ali, 2020a; Ali and Ali, 2020). When we are revising this paper, the spread of dengue is significant.

Now we would like to briefly mention about COVID-19. Pakistan reported its first COVID-19 infection on 26 February 2020, and then, as elsewhere, the numbers of the infected steadily increased (Ali *et al.*, 2020). By January 2021, according to government statistics, the virus had infected around 541,000 people and caused over 11,500 deaths (Johns Hopkins University, 2021). Pakistan's two most thickly populated provinces, Sindh and Punjab, have reported the greatest numbers of infections. The country has introduced and implemented numerous preventive measures, such as banning travel, halting gathering in groups, opening quarantine centers, conducting testing, enforcing lockdown, closing educational institutions, and announcing economic relief packages (Ali *et al.*, 2020). It is essential to mention that the country had no testing kits in the pandemic's beginning; thus, it sent specimens to China and the United States for testing and then imported a very low number—around 1,000—of testing kits (Ali *et al.*, 2020). Moreover, various rumors and conspiracy theories became widespread in the country, considering COVID to be a 'political game', 'a Western plot', or a 'supernatural punishment or test'. Some of these rumors insist on the efficacy of local

preventive remedies, such as 'brewing green tea and drinking five sips'. (Ali, 2020a; 2020b; Ali *et al.*, 2020; Ali I, Salma *et al.*, 2020).

### *The case of Papua New Guinea (PNG)*

The profile of PNG also reveals various criticalities. PNG stands at the 155th position out of 189 on the HDI (United Nations Development Programme (UNDP), 2019). Around 40% of its population lives below the poverty line, approximately 50% of children are 'stunted', and 53% of households lack clean drinking water (World Bank, 2020). In the GII, with an unpredictable value, the country is in the 'low human development' category (UNDP, 2019). The total population is over 8.5 million, and 85% live in rural areas difficult to reach (Government of Papua New Guinea, 2020).

Regarding healthcare services, in 2008, PNG contained 22 provincial hospitals, 14 district and rural hospitals, around 200 health centers, approximately 430 health subcenters, and around 2,670 open aid posts (World Bank, 2018, p. 19). Yet there is confusion around how many such facilities are functional. And population coverage of these facilities varies from 5,000 to 20,000 based on the area (*ibid.*). The doctor-patient ratio is 1/10,000 (World Health Organization, 2012).

According to the government of PNG (Government of Papua New Guinea, 2020), various infectious diseases have been prevalent and have caused severe outbreaks. For instance, there was an outbreak of cholera in 2009–2011, infecting 15,500 people, of whom more than 500 died. During 2012–13, the country faced its first outbreak of Chikungunya (a virus spread by infected mosquitoes), which affected all 22 provinces. In 2014, there was a severe outbreak of measles, which infected around 5,000 children and caused 365 deaths; there were further measles outbreaks during 2017–2018. In 2018, polio re-emerged in PNG after 18 years, putting over 3.3 million children at a notable risk. Also, PNG was affected by the Severe Acute Respiratory Syndrome (SARS) in 2002–2003; the pandemic influenza A (H1N1) in 2009; Middle East Respiratory Syndrome (MERS) in 2012–2014; the Zika virus in 2016; and most recently, COVID-19.

Such diseases easily spread in PNG, where many people live together; one extended family may have around 15 members (the same is true for families in rural regions in Pakistan) (World Bank, 2020). Rumors and conspiracy theories also prevail in PNG, for example, people believe that sex workers and HIV/AIDS are government plots to eliminate Indigenous Papuans (Butt, 2005). These narratives demonstrate people's suspicions and perceptions of oppression and unequal access to resources, and mistrust between citizens and the government.

As far as COVID-19 is concerned, PNG reported its first COVID-19 infection in late March 2020. Declaring a health emergency, the country banned international and domestic flights, stopped movements from one province to another except for approved cargo, medicine, and security personnel, increased school holidays, required all nonessential workers to self-isolate at home, and asked people who had arrived in the country from 7 March on to contact a government hotline (Lyons, 2020). By January 2021, the virus had infected around 850 people and caused 9 deaths across PNG (Johns Hopkins University, 2021). Even these low numbers of cases quickly overwhelmed the country's healthcare system, and nurses protested the unavailability of PPE (Lyons, 2020). Left without gloves and sanitizers, they improvised by using rice packets as gloves and laundry detergent (Kokopo, 2020).

## Discussion

As the COVID-19 pandemic spread and continued, many countries introduced and implemented multiple containment measures. Despite the lower numbers of their populations, several HICs have reported substantially greater numbers of infections than LICs. For example, the United Kingdom (UK) has a population of around 67.8 million and has reported 3.47 million infections. Italy with a population of around 60 million has reported around 2.53 million, including 88,000 deaths (Johns Hopkins University, 2021). And the US that has a population of 328.2 reported around 26 million infections, encompassing 437,000 deaths (ibid.). In contrast, Pakistan, with its population of around 222 million, has only reported around 541,000 infections. Similarly, PNG has reported only 850 cases in its total population of 8.5 million (one case per million).

These substantial differences compel us to ask, has the virus in actuality infected a smaller number of people in both countries than in these HICs? Have the governments of Pakistan and PNG been 'cooking' their numbers by reporting fewer cases to make them appear to be doing a good job of viral containment (Ali, in publication)? Have their reporting systems simply been inadequate, so that the full numbers of cases have accidentally not been reported? Or are these relatively low numbers due to lack of mass testing?

HICs have placed great emphasis on testing as an important containment measure. Yet extensive testing is beyond the resources of Pakistan and PNG. Also, the aforementioned characteristics of these countries reveal that mere testing may not substantially help these countries to deal effectively with the virus. First, as mentioned at various places, affordability and accessibility are two prime issues related to testing as there were no testing kits available in Pakistan at the beginning of the pandemic. Second, the quality and validation of testing in LICs is another vital aspect that needs attention and raises questions. Media have been informing us about such validations, such two reports of the same person at the same time may be contradictory. Especially the test type, available resources, and staff capacity (to follow the required protocols) can greatly affect the test results. Hence, it is more important to give as much attention to other preventive measures, as possible.

First and most importantly, extensive educational groundwork is necessary to mobilize people to willingly adopt the essential preventive measures, such as staying at home, observing self-quarantine if one does contract COVID or has contact with someone who has, maintaining physical distancing, wearing masks, and washing hands. This groundwork is lacking in both countries, where many people are skeptical that COVID in any of its forms is real, and so take no precautions against it. Population-wide education becomes truly essential here. In addition, in both these countries, those who do believe COVID is real have stigmatized and marginalized COVID+ people and those suspected of being COVID-positive, resulting in negative psychological effects on such people and reluctance on the part of others to be tested for fear of that stigmatization. HIV+ people are also stigmatized. The kind of education we recommend could put an end to such stigmatization. And when those who test positive yet are not ill enough to need facility care do self-quarantine as they should, the state should take care of their primary needs, including short-term needs for food and basic supplies, and longer-term needs such as helping them get back the jobs they may have lost

while self-isolating, assisting them in finding other jobs, and providing economic support in the meantime. This would help governments build a trustworthy relationship with their citizens, especially needed because the strong mistrust of their governments has impeded people in both countries – and many others – from implementing containment measures.

Precisely, preparedness should be inclusive without politicizing any step to deal with the pandemic. Governments must devise thorough preparedness programs that begin with testing and go on to include appropriate socio-cultural, economic, political, and educational measures, such as creating mass awareness of how viruses work and how important it is to follow preventive measures to contain viral spread. Schoolchildren should be shown viruses and bacteria through microscopes so that they can understand that these are really early on in their lives and why frequent handwashing is so important. They should also be taught how to do it properly, using soap and for at least 20 seconds. We can even envision local health workers showing up in villages with microscopes, soaps, and buckets to do the same, just as we can envision government programs in both countries designed to ensure the Number One most important public health intervention: an easily available supply of clean water. Such interventions would do far more to prevent or limit viral spread than testing, and financial resources, including those from foreign aid, should be allocated accordingly. *Far more lives can be saved with clean water than with expensive testing and hospitals.*

Education both for schoolchildren and for the general public should focus on the causes and consequences of viral outbreaks and of (not) following the preventive measures like mask wearing and physical distancing. Creating cultural- and context-specific policies and practices would play a pivotal role, as a universal, standardized approach may not work effectively.

## Concluding remarks

While writing this paper in the beginning of 2021, the 2020 COVID-19 pandemic and its accompanying mutant viruses continue to challenge the world and are likely to do so for much longer, despite the advent of vaccines – as, due to their mistrust of governments and scientific authorities alike, many people in both HICs and LICs are likely to reject these vaccines, thereby preventing the development of herd immunity. Yet as we and many others have shown, dealing with the pandemic is more challenging in LICs than in HICs. Herein, we have placed specific focus on the LICs in Pakistan and PNG. Although testing is important as a preventive measure, we have shown that the socio-cultural, economic, and political characteristics of these two countries make mass testing both overwhelmingly challenging and impractical. We suggest that it is more important for these countries to foster trust between governments and citizens by directly helping individuals and families, providing clear guidelines for preventive measures, and effectively educating the public about the critical causes and consequences of viral outbreaks and of (not) following these preventive measures.

In addition to such measures, we note that LICs, including Pakistan and PNG, should focus on alleviating the existing forms of structured inequalities and inequities that play influential roles in exacerbating the impacts of transmissible diseases such as measles, polio, HIV, and COVID-19. HICs, many of which already provide a great deal of foreign aid to LICs, should make greater

efforts to ensure that this money, rather than being eaten up by syndemic corruption, instead works to accomplish the above, essential, goals.

Furthermore, we invite detailed ethnographic and multi-disciplinary studies that should examine and analyze various socio-cultural, economic, and (geo-)political aspects related to massive testing, which can reveal various lessons learned—successful or unsuccessful. These studies may take massive testing as an analytical entry point to comprehend the relationship between micro and macro policies, between micro-organisms and humans, between humans, between countries, and between available resources—and among all of them. Precisely, testing can reveal various visible and invisible entanglements of various factors and processes.

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## References

- Ali I (2020a) *Constructing and negotiating measles: The case of sindh province of pakistan*. (PhD), University of Vienna, Vienna, Austria.
- Ali I (2020b) Impacts of rumors and conspiracy theories surrounding covid-19 on preparedness programs. *Disaster Medicine and Public Health Preparedness*, 1–6. doi: [10.1017/dmp.2020.149](https://doi.org/10.1017/dmp.2020.149)
- Ali I (2021). Rituals of Containment: Many Pandemics, Body Politics, and Social Dramas During COVID-19 in Pakistan. *Frontiers in Sociology*, 1–8. doi: [10.3389/fsoc.2021.648149](https://doi.org/10.3389/fsoc.2021.648149)
- Ali I and Ali S (2020) Why may covid-19 overwhelm low-income countries like pakistan? *Disaster Medicine and Public Health Preparedness*, 1–5. doi: [10.1017/dmp.2020.149](https://doi.org/10.1017/dmp.2020.149)
- Ali I and Davis-Floyd R (editors) (2022). *Negotiating the Pandemic Cultural, National, and Individual Constructions of COVID-19*. London: Routledge.
- Ali I, Sadique S and Ali S (2020) Covid-19 significantly affects maternal health: A rapid-response investigation from pakistan. *Frontiers in Global Women's Health* 1. doi: [10.3389/fgwh.2020.591809](https://doi.org/10.3389/fgwh.2020.591809)
- Ali I, Salma S and Ali S (2021) Local perception of covid-19 in pakistan: “Political game”, supernatural test, or Western Conspiracy? *Disaster Medicine and Public Health Preparedness*, 1–6. doi: [10.1017/dmp.2021.220](https://doi.org/10.1017/dmp.2021.220)
- Butt L (2005) “Lipstick girls” and “fallen women”: Aids and conspiratorial thinking in papua, indonesia. *Cultural Anthropology* 20, 412–442.
- Government of Pakistan (2019) Pakistan economic survey 2018–19 Retrieved from Islamabad: [http://finance.gov.pk/survey/chapters\\_19/Economic\\_Survey\\_2018\\_19.pdf](http://finance.gov.pk/survey/chapters_19/Economic_Survey_2018_19.pdf)
- Government of Papua New Guinea (2020) Png emergency preparedness and response plan for covid19 ver17(2020-02-03). Retrieved from <https://www.health.gov.pg/covid19/PNGEPRPCOVID19.pdf>
- James JJ (2020) From covid-19 to covid-20: One virus, two diseases. *Disaster Medicine and Public Health Preparedness*, 1–5. doi: [10.1017/dmp.2020.363](https://doi.org/10.1017/dmp.2020.363)
- Johns Hopkins University (2021, 28 January 2021) Coronavirus covid-19 global cases. Retrieved from <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>
- Kokopo KF i. (2020, 11 April) ‘We have nothing’: Papua new guinea’s broken health system braces for covid-19 The Guardian. Retrieved from <https://www.theguardian.com/world/2020/apr/11/we-have-nothing-papua-new-guineas-broken-health-system-braces-for-covid-19>
- Lyons K (2020, 23 March) Papua new guinea declares state of emergency after first coronavirus case. The Guardian. Retrieved from <https://www.theguardian.com/world/2020/mar/23/papua-new-guinea-declares-state-of-emergency-after-first-coronavirus-case>
- United Nations Development Programme (UNDP) (2019) 2019 human development index ranking. Retrieved from <http://hdr.undp.org/en/content/2019-human-development-index-ranking>
- World Bank (2018) Service delivery by health facilities in papua new guinea. Retrieved from Washington, D.C.: <https://openknowledge.worldbank.org/bitstream/handle/10986/29824/AUS0000113-WP-PUBLIC-P154901-WBPNGServiceWEB.pdf?sequence=1&isAllowed=y>
- World Bank (2020) Papua new guinea economic update: Facing economic headwinds. Retrieved from <http://documents.worldbank.org/curated/en/584121580926099153/pdf/Papua-New-Guinea-Economic-Update-Facing-Economic-Headwinds.pdf>
- World Health Organization (2012) Papua new guinea health service delivery profile. Retrieved from [www.wpro.who.int/health\\_services](http://www.wpro.who.int/health_services)