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Impact of the societal response to COVID-19 on access to healthcare for non-COVID-19 health issues in slum communities of Bangladesh, Kenya, Nigeria and Pakistan: results of pre-COVID and COVID-19 lockdown stakeholder engagements

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ABSTRACT

Introduction With COVID-19, there is urgency for policymakers to understand and respond to the health needs of slum communities. Lockdowns for pandemic control have health, social and economic consequences. We consider access to healthcare before and during COVID-19 with those working and living in slum communities.

Methods In seven slums in Bangladesh, Kenya, Nigeria and Pakistan, we explored stakeholder perspectives and experiences of healthcare access for non-COVID-19 conditions in two periods: pre-COVID-19 and during COVID-19 lockdowns.

Results Between March 2018 and May 2020, we engaged with 860 community leaders, residents, health workers and local authority representatives. Perceived common illnesses in all sites included respiratory, gastric, waterborne and mosquitoborne illnesses and hypertension. Pre-COVID, stakeholders described various preventive, diagnostic and treatment services, including well-used antenatal and immunisation programmes and some screening for hypertension, tuberculosis, HIV and vectorborne disease. In all sites, pharmacists and patent medicine vendors were key providers of treatment and advice for minor illnesses. Mental health services and

Summary box

What is already known?

- ▶ With COVID-19, tight restrictions on movement have brought health, social and economic consequences for slum communities.
- ▶ Effective public health strategies must consider the perspectives, insights and solutions of those who live and work in slums.

What are the new findings?

- ▶ Pre-COVID-19, diagnostic and treatment services were available for slum dwellers, preventive services were well used but services for mental health and gender-based violence were limited or non-existent.
- ▶ Stakeholders perceive a reduction in access to all healthcare services in slums during COVID-19 lockdowns, with inconsistent and inadequate attention given to ameliorating this.
- ▶ Access barriers include increased cost of healthcare, reduced household income, increased challenges in physically reaching healthcare facilities and exacerbated reluctance of residents to seek healthcare due to fear of infection and stigmatisation.

Summary box

What do the new findings imply?

- ▶ Clear communication with slum communities is needed about available healthcare services, infection control measures and the importance of continuing to seek care for non-COVID-19 conditions, including pregnancy and long-term conditions.
- ▶ Policymakers and those planning healthcare services should ensure that the costs of accessing healthcare do not escalate and further deter healthcare usage, or unfairly disadvantage slum communities.
- ▶ To ease access barriers, remote consulting to reduce face-to-face contact and the provision of mental health services and gender-based violence services should be considered.

those addressing gender-based violence were perceived to be limited or unavailable. With COVID-19, a reduction in access to healthcare services was reported in all sites, including preventive services. Cost of healthcare increased while household income reduced. Residents had difficulty reaching healthcare facilities. Fear of being diagnosed with COVID-19 discouraged healthcare seeking. Alleviators included provision of healthcare by phone, pharmacists/drug vendors extending credit and residents receiving philanthropic or government support; these were inconsistent and inadequate.

Conclusion Slum residents' ability to seek healthcare for non-COVID-19 conditions has been reduced during lockdowns. To encourage healthcare seeking, clear communication is needed about what is available and whether infection control is in place. Policymakers need to ensure that costs do not escalate and unfairly disadvantage slum communities. Remote consulting to reduce face-to-face contact and provision of mental health and gender-based violence services should be considered.

INTRODUCTION

COVID-19 is an infectious disease that has spread globally, infecting over 13 million people worldwide and resulting in >570 000 deaths by mid-July 2020.¹ Unsurprisingly, cities are at the epicentre of the pandemic and, in the megacities of low-income and middle-income countries, structural and institutional inadequacies could enable the virus to spread rapidly with a heightened risk of community transmission.²⁻⁴ In slums, 'closed spaces, crowded places and close contact',⁵ coupled with poor sanitation and lack of running water, amplify barriers to pandemic control efforts from hand washing to isolation, quarantining and social distancing.^{6 7} While tight restrictions on movement may contribute to reduced disease transmission, there are social and economic consequences of locking down slums and the impact on access to healthcare.⁸⁻¹⁰ It is the latter that we focus on in this paper. Effective public health strategies in slums cannot overlook the perspectives, insights and solutions offered by those who must work and live with them.⁸⁻¹⁰

Our study forms part of the NIHR Global Health Research Unit on Improving Health in Slums, a multi-partner, multimethod collaboration¹¹ exploring healthcare and access in seven slums in Bangladesh, Kenya, Nigeria and Pakistan. Although the term 'slum' is widely debated, for this paper, we define a slum as an area of high

population density that lacks sanitation, clean water, safe and durable housing, as well as basic services.¹² Here, we present stakeholder perspectives on access and barriers to healthcare in these sites over two time periods: pre-COVID-19 and during COVID-19 lockdowns. We ask, how stakeholders who are seeking, delivering and managing healthcare in the sites have perceived and experienced access to healthcare services for non-COVID-19 conditions, both before and during COVID-19.

CONCEPTUALISING ACCESS IN CONTEXT

Healthcare access is a complex notion and there is no commonly agreed definition or singular 'access' approach.^{13 14} However, there has been renewed interest in understanding access as: i) *relational and dynamic*, a process that is jointly negotiated and produced *between* those seeking (individuals, households, communities) and providing services (health workers, organisations, policies) and ii) *multidimensional*, finding expression in the affordability (financial access), availability (geographical/physical access) and acceptability (sociocultural access) of care.^{13 14} Drawing on the study by Levesque *et al*, we define access as 'the opportunity to identify healthcare needs, to seek healthcare services, to reach, to obtain or use healthcare services and to actually have the need for services fulfilled'.¹³ Given the 'highly contextual',¹⁵ geographically bound¹² nature of our study (table 1) and the urgency for policymakers to understand and respond to community needs in addressing COVID-19, we have focused on experiences and perceptions of stakeholders living and working in each site, that is, at the micro-level of the health system where health policies are experienced and 'tested'.¹⁶ We have also engaged with stakeholders responsible for planning, funding and implementing services locally—those operating at the meso-level of the system.¹⁶ The instrumental and ethical value of identifying challenges and finding solutions with those closest to the issue is well recognised.^{15 17} Insights from micro-level and meso-level are important for informing change at the macro-level where policies are formulated and decided¹⁶; and for generating community awareness and ownership of solutions for improving healthcare access.¹⁷

METHODS

Study setting

The seven slums for our study are described in table 1. We include in the table detail from community mapping, household and facility survey and fieldnotes collected pre-COVID as part of the wider study¹¹ in order to provide the reader with an understanding of what we know about these sites to assist with interpretation of stakeholder perceptions. This work indicates a range of healthcare facilities within each site. Healthcare use rates vary by site, with rates higher in South Asian sites than those in sub-Saharan Africa but all are relatively low compared

Table 1 Study setting: seven slums in Nigeria, Kenya, Pakistan and Bangladesh

Site	Location	Approx. pop. (000s)*	Approx. density (000s/km ²)	Description of community†
BD	Dhaka, Bangladesh	60.0	171	Centrally located, well-established area, mostly Bengali, Muslim population working in blue collar jobs (eg, rickshaw pulling, security/house work in nearby wealthy suburbs), with some seasonal migrants (farmers from rural villages). Structures are semi-permanent, with regular demolitions, reconstructions and ongoing site expansion. Residents have variable access to water, sanitation and other services. Pharmacies (n=92) make up most of the 160 recorded health facilities, followed by faith healers, homeopaths/ayurveds and herbalists (n=46). There are only four clinics in the site: one non-governmental organisation (NGO)-run centre providing maternal-child services and three donor-funded clinics providing specialist services for neurodevelopmental disabilities, autism (both child-focused); and palliative care (run mostly by health volunteers), with primary care provided 1–2 times/week by a doctor from the nearby state-run academic hospital. A large research and training centre on the boundary of the site provides specialised clinical care for infectious and non-communicable diseases, maternal/neonatal health and malnutrition.
PK	Karachi, Pakistan	33.5	91	Centrally located, well-established area. Mixed religion and ethnicity, mostly settled population working in blue collar jobs. Structures are permanent and multistory, with high levels of new construction underway. Residents have variable access to basic services and sanitation. Of the 32 recorded health facilities, most comprise small private clinics run by individuals known as doctors (regardless of formal qualification) (n=12) and pharmacies/medical stores (n=8), followed by traditional and spiritual healers (n=4). There are two private laboratories in the site and female/polio health workers carry out home visits.
KE1	Nairobi, Kenya	24.4	52	Located about 12 km from Nairobi Central Business District (CBD). Has a settled community with ethnically segregated and multigenerational residents. Dwelling units are mostly in rows and are made up of timber, mud and tin roofing material. Basic amenities are limited leading to poor sanitation and frequent disease outbreaks. Of 12 primary health facilities, one is government-owned and the rest operate as either private-for-profit or NGO or faith-based primary health facilities. There are also two private-for-profit maternity homes and one NGO-run secondary hospital accessible to the residents, as well as 14 pharmacies.
KE2	Nairobi, Kenya	44.9	83	Located about 7 km from the CBD, the site consists of a multiethnic population with many economic migrants working in the surrounding industrial area. Structures are mostly made of iron sheet and tin walls with iron sheet roofs. There are limited basic services and poor sanitation. The site is prone to frequent episodes of fire outbreaks often linked to unregulated electricity connections. There are 46 pharmacies and 26 primary health facilities in the site—some operating as stand-alone private-for-profit clinics, NGOs and only one government owned primary health facility. Residents also frequent government-owned primary health facilities and one large subcounty hospital, located nearby (but not in the site).
NG1	Ibadan, Nigeria	5.8	5	Resettled community on city edge, built around a long, tarred road and central food market. Multiethnic population including many migrants from northern Nigeria. Structures are well-spaced, mostly permanent with variable energy-access, poor sanitation and refuse-filled drains. Of the 32 health facilities documented in the site, most are patent medicine stores (n=22) followed by herbalists and spiritual healers (n=5). There is one state-run primary health clinic, which offers preventive and treatment services, and a few small private clinics, including a maternity home. Some private community birth attendants also serve the community.

Continued

Table 1 Continued

Site	Location	Approx. pop. (000s)*	Approx. density (000s/km ²)	Description of community†
NG2	Ibadan, Nigeria	5.5	14	Centrally located in historical area along an old tarred road, with many residents working as traders in three major markets in the site. Mostly permanent but run-down structures, poor sanitation and refuse-filled drains. The area is poorly planned with a limited road network—many health facilities are not easily accessible during emergencies. Out of 36 recorded health facilities, most are patent medicine stores (n=15) and herbalists and spiritual healers (n=14). There are four 1–2 bed private maternity homes and three state primary health clinics, two of which are affiliated to a university teaching hospital (dentistry and general care).
NG3	Lagos, Nigeria	8.1	11	Centrally located with multiethnic population, most of whom are educated and employed. Structures are mostly temporary, sanitation and basic services are limited and the site has a higher crime rate than in sites NG1–2. Of the 14 health facilities documented, most are patent medicine stores (n=5) and herbalists and spiritual healers (n=5). There is one state primary health clinic and three private clinics, two of which are maternity homes.

*Estimated from data collected in the wider study.

†From fieldnotes and healthcare facility surveys.

with high-income countries. Healthcare costs are high for residents, particularly drugs.¹⁸

Selection and recruitment of stakeholders

We purposefully selected stakeholders for diversity within the micro-level and meso-level of each country's health system. At a micro-level, health workers included pharmacists and patent medicine vendors (PMVs), polio workers, clinical officers, nurses and community health workers and assistants. Residents were selected for diversity of age, gender and religion, as well as leadership roles in the community. Pregnant women and women with children were included in group discussion in all sites and in Kenya, the team also recruited people identifying themselves as living with disabilities and members of youth groups. At a meso-level, we selected district/county health service managers. We identified stakeholders through our organisational networks, site contacts and interactions with community leaders, residents and health service providers.

Data collection

Pre-COVID-19 stakeholder engagements were conducted through face-to-face workshops and individual meetings over three phases: (i) inception meetings to introduce the project, identify key stakeholders and map out broad issues raised; (ii) micro-level community engagement using semi-structured guides to explore perceptions of common illnesses, health-seeking behaviours, healthcare service availability, including preventive services and access challenges and (iii) feedback and discussion of study results. Each country team read relevant available policy to inform the engagements. Individual discussions (20–50 min) and group engagements (1–3 hours) were facilitated by researchers trained in the methods and ethics of qualitative stakeholder

engagements, in a language common to all participants. They were audio-recorded, transcribed and translated into English, and supplemented by notes from regular team debriefings.

In April 2020, as COVID-19-related lockdowns were imposed in each country, we initiated a fourth phase of rapid cycle stakeholder engagement involving weekly discussions (15–30 min each) with stakeholders located at the micro-level and meso-level of the health system, namely community leaders, residents, health workers, volunteers and managers. Based on preliminary findings from our pre-COVID engagements (which directed us to key stakeholders and their roles in each community), discussion with local leaders/community advisors, and our wider contextual knowledge, participants were selected for their role/expertise, site-familiarity and involvement with the COVID-19 response. They were recruited by fieldteam members who lived in the site (Bangladesh, Nigeria) and/or had been working there prior to the lockdown (Kenya, Pakistan). For safety reasons, we switched our mode of engagement to individual telephone conversations, each lasting 10–30 min. We ensured that in each site, at least one stakeholder per category was engaged each week. We captured perceptions on state/community responses to the pandemic, challenges facing non-COVID patients and service delivery and access during lockdown. Each team read websites of media, governments and global agencies (eg, WHO, International Monetary Fund) throughout data collection and used these as a resource during stakeholder conversations to both prompt stakeholders and act as a check on what they were saying. Detailed notes were made of each discussion.

All data were encrypted and stored on a secure server at the University of Warwick for analysis.

Table 2 Illnesses perceived as common by residents/leaders, health workers and local authorities in each country pre-COVID-19

Disease classification	Common health conditions	Bangladesh	Kenya	Nigeria	Pakistan
Non-communicable diseases	Hypertension/High blood pressure	✓	✓	✓	✓
	Gastric problem/Ulcer	✓	✓	✓	✓
	Stroke/Heart-related issues	✓		✓	✓
	Arthritis/Bone weakness	✓		✓	✓
	Drug addictions		✓	✓	✓
	Obesity		✓		✓
	Asthma	✓	✓	✓	✓
Communicable diseases	Cough/Tuberculosis	✓	✓	✓	✓
	Fever/Malaria	✓	✓	✓	✓
	Food poison/Diarrhoea	✓	✓	✓	✓
	Cholera/Waterborne disease	✓	✓	✓	✓
	Typhoid		✓	✓	✓
	Measles/Skin infections			✓	✓
	Hepatitis				✓

Source: Stakeholder Engagement 2019; ✓ indicates that the condition was mentioned.

Data analysis

During pre-COVID engagements, stakeholders at micro-level and meso-level were asked to identify common illnesses for which community residents frequently sought care. Lists were compiled for each site and categorised into communicable and non-communicable diseases (table 2). From online reports from media, government and global agencies, we summarised key COVID-19 containment and relief measures instituted in each country (table 3). With the remaining data we carried out thematic analysis,¹⁹ guided by our understanding of access as dynamic and multidimensional in terms of availability, affordability, acceptability,¹³ while staying open to emergent themes. Four researchers (one per country-team MA, PK, KA, SAKSA) coded and extracted the transcripts and notes into an Excel template. Codes were reviewed in consultation with the broader team and developed into initial themes, then refined through further coding. The whole team met frequently to resolve differences and reach agreement about final themes. These were compared across countries and overtime (both before and during the COVID-19 pandemic).

Rapid feedback to policymakers and media

Key messages were identified and developed into policy briefs²⁰ and news articles²¹ for rapid dissemination in order to inform policy where possible.

Patient and public involvement

As part of the wider study, prior to project initiation, we consulted with community leaders and residents through launch events and individual consultations in each site. Community members were recruited to fieldwork teams in Nigeria, Kenya and Bangladesh and were involved

in conducting stakeholder engagements. Community leaders (Bangladesh, Nigeria, Pakistan) and Advisory Groups (Kenya) are advising on our dissemination plans.

RESULTS

Between March 2018 and May 2020, we engaged with a total of 860 stakeholders across the seven sites. In the pre-COVID period, we reached 774 people through 51 workshops/meetings and 110 individual discussions. In April–May 2020 of the COVID-19 era, we spoke to 86 people via phone (table 4). First, we present stakeholders' perceptions about the burden of illness and access to care prior to the declaration of COVID-19 as a pandemic. Then we share emerging issues in the early COVID-19 period.

Stakeholder perception of illness burden and access to care before COVID-19 in the slum communities

Building on stakeholder engagements in each site, we developed a list of 14 common illnesses for which residents frequently sought care (table 2). Respiratory, gastric, waterborne and mosquitoborne illnesses and hypertension were perceived as common in each country. Hepatitis was perceived as common only in Pakistan. Beyond these common illnesses, health workers in Pakistan and Kenya mentioned that sensitive or stigmatised conditions, such as sexually transmitted infections or HIV, were often ignored or left unaddressed within households until symptoms were serious. Community leaders and residents described a range of health providers in each site providing diagnosis and treatment, which matched the findings of the facility survey undertaken as part of the wider study (table 1). They were aware that some clinics refer emergencies and complicated cases to hospitals

Table 3 Country-level COVID-19 status, control measures and relief efforts (April–May 2020)*

April–May 2020	Bangladesh		Pakistan		Kenya		Nigeria	
	01/04	31/05	01/04	31/05	01/04	31/05	01/04	31/05
Confirmed cases (WHO) ¹	54	47 200	2000	69 500	59	1900	139	9900
Recorded deaths (WHO) ¹	6	650	26	1500	1	63	2	273
Containment measures initiated in all four countries included lockdowns/curfews, closure of non-essential services, travel restrictions, social distancing, quarantine and self-isolation	<p>08/03: First case detected⁴⁹ 26/03: lockdown initiated via 10-day nationwide holiday, then extended to 30/05: with ● closure of non-essential services. ● people strongly advised to stay at home, ● social distancing ● places of worship closed ● public transport limited ● face-masks compulsory during travel (only for work or emergency reasons) ● law enforcers deployed to ensure adherence. Early/Mid-March: Media reports reveal ‘unethical’ hoarding and price hikes in masks and hand sanitizers. In response, law enforcement raids are carried out on shops and pharmacies across Bangladesh.⁵⁰ Certain public hospitals are designated as COVID-19 treatment facilities⁵¹, reducing options of nearby low-cost non-COVID-19 hospital services for residents.</p>		<p>26/02: First case detected 13/03: All educational institutions closed 17/03: First death recorded 21/03: All international flights suspended 23/03: Lockdown initiated in Sindh Province (location of study site), with ● closure of public transport, market places, offices, restaurants and public areas. Mid-April: Gradual easing of lockdown with ● partial restart of low-risk industries/small retail shops (limited opening hours) Lifting of travel restrictions ● Sealing of high-risk areas Schools remained closed. Media reports suggest that many people believe COVID-19 is a conspiracy or does not exist.⁵²</p>		<p>19/02: Government states its preparedness to handle COVID-19. Urges people to observe preventive measures.⁵³ 13/03: First case detected. Government restrictions on gatherings, ● social distancing ● closure of most non-essential social spaces ● implementation of COVID-19 19 measures in malls, public transport⁵⁴ (reduced passenger capacity) ● sealing of epicentre areas, including Nairobi (sites 1–2), with movement allowed within but not beyond the city boundaries⁵⁵ (movement allowed within but not beyond boundaries) ● teleworking where possible ● restrictions on international travel (with 14-day quarantine for those returning from abroad) ● establishment of isolation facilities.</p>		<p>28/02: First case detected 30/03: Lockdown imposed in three major cities/states (site 3) 20:00–06:00 hours curfew elsewhere (sites 1–2). Lockdown included: ● ban on travel/movement of persons, ● shutdown of all of non-essential services, including schools, markets ● places of worship closed ● public transport highly restricted ● international/interstate travel restricted ● law enforcement agencies deployed to ensure adherence 14/04: Lockdown/curfew extended for 3 weeks ● ban on all interstate movement 04/05: Lockdown eased, with curfew 22:00–04:00 hours compulsory use of facemasks social distancing 21/05: Partial lockdown lifted in some states, religious congregation permitted.</p>	
State-led relief efforts in all four countries included the development of COVID-19-related policies for healthcare, health infrastructure, increased testing services, financial and relief aid programmes for low-income groups, the establishment of national stimulus packages	<p>End-March: COVID-19 preparedness and response plan: including expansion of existing cash transfer programme, Open Market Sale (OMS) programme—rice sales at 33% market price, district-level distribution of food supplies. Protection for home remittances and garment exports.⁵⁶ 15/04: Further state relief announced including housing scheme for homeless (Tk. 21.3 billion), job losses (Tk. 7.6 billion), health insurance for at-risk government employees (Tk. 7.5 billion) and bonus pay for health workers treating patients with COVID-19 (Tk. 1 billion).</p>		<p>24/03: PKR1.2 trillion relief package: including PKR 75 billion in cash transfers to 6.2 million daily wage workers; and PKR 150 billion in cash transfers to over 12 million low-income families (PKR 1.5 billion for Sindh Province^{56 57} (location of study site).</p>		<p>27/03: Ksh40 billion relief package: including social protection, food relief, cash transfers, health expenditure for isolation units, testing and laboratory services, communication, equipment and supplies.⁵⁸</p>		<p>Early-April: N500 billion COVID-19 crisis intervention fund established to upgrade health facilities.⁵⁹ Lagos State: granted N10 billion (US\$28 million) to support containment efforts Contingency funds of N984 million (US\$2.7 million) released by Nigeria’s Center for Disease Control, and additional N6.5 billion (US\$18 million) made available for training of medical personnel, test kits, isolation centres. 16/04: N42.6 billion raised, including US\$50 million grant from the European Union.⁵⁶</p>	
Information and communication	Updates and information disseminated regularly via mobile text/voice messages, television advertisements, radio, leaflets, loud-speakers, electronic and print media.							

*In this table, we have highlighted certain containment measures and elements of relief packages as they might immediately pertain to residents in the study sites. However, we recognise that all of the countries have adopted wider fiscal and macro-economic plans which will affect the whole society, with long-term implications for equity and health in the sites and beyond.

outside the site. In all sites, pharmacists and PMVs were presented as key providers of treatment and advice for illnesses such as colds and influenza, diarrhoea, stomach ache and headache, allergies and first aid.

Preventive services in maternal and child health, including immunisations and antenatal care, were reported by almost all stakeholders in all sites. They were perceived to be well-used by residents and supported by private traditional birth attendants (TBAs) and midwives, who were said to provide referrals and recommend immunisations. In Nigeria and Kenya, these are (mostly)

available for free at point of use in public sector services. Primary-level screening services, delivered through fixed/mobile primary healthcare clinics, community health workers or health campaigns, were identified by health workers, managers and community residents for hypertension (Kenya, Nigeria), tuberculosis (Nigeria, Pakistan), HIV (Kenya, Nigeria) and vectorborne diseases, for example, malaria, dengue fever (routinely in Bangladesh and more occasionally in Nigeria and Kenya, via a bednet campaign). In Bangladesh, residents and health workers, including pharmacists, mentioned

Table 4 Summary of stakeholder engagements pre-COVID-19 (March 2018–January 2020) and during COVID-19 (April–May 2020)

Phase*	Activity/Stakeholder	Bangladesh	Pakistan	Kenya	Nigeria
Phase I	Inception meetings (n=343 participants)†				
	Multistakeholder meetings	1 (n=25)	1 (n=45)	1 (n=59)‡	5 (n=70)
	Specific stakeholder groups	–	–	7 groups (n=59)	Individual discussions: n=85
Phase II	Micro-level engagement (n=320)§	Bangladesh	Pakistan	Kenya 1	Nigeria 1
	Community residents/stakeholder groups	1 (n=15)	1 (n=21)	2 (n=20)	3 (n=18)
	Men (n=101)	–	1 (n=15: 6 Muslim, 9 Christian)	2 (n=20)	3 (n=18)
	Youth groups (n=16)	–	–	1 (n=8: 4 men, 4 women)	–
People identifying themselves as living with disabilities (n=16)	–	–	–	1 (n=8: 3 men, 5 women)	–
	–	–	–	1 (n=8: 4 men, 4 women)	–
	–	–	–	n=8 (3 men, 5 women)	n=2 (men)
	Community leaders (n=19)	n=1 (man)	–	–	n=1 (man)
Local healthcare workers workshops and discussions	Nurses/clinical officers/doctors (n=3)	–	–	–	n=1 nurse
	Pharmacists/PMVs (n=8)	1 (n=5)	–	–	n=1 nurse
	Community health workers (n=34)	–	▲ 1 polio workers (n=18)	–	n=1 PMV
	–	–	▲ 1 female health workers (n=16)	–	n=1 PMV
Phase III	Traditional healers (n=3)	–	–	–	n=1
	Feedback meetings (n=111)**	Bangladesh	Pakistan	Kenya	Nigeria 1 and 2
Multistakeholder workshops (n=111)	Planned but interrupted by COVID-19 outbreak	–	–	–	n=1
	–	–	–	–	n=1
Multistakeholder workshops (n=111)	Planned but interrupted by COVID-19 outbreak	–	–	–	n=1
	–	–	–	–	n=1
	–	–	–	–	n=1
	–	–	–	–	n=1
Multistakeholder workshops (n=111)	Planned but interrupted by COVID-19 outbreak	–	–	–	n=1
	–	–	–	–	n=1
	–	–	–	–	n=1
	–	–	–	–	n=1
Multistakeholder workshops (n=111)	Planned but interrupted by COVID-19 outbreak	–	–	–	n=1
	–	–	–	–	n=1
	–	–	–	–	n=1
	–	–	–	–	n=1

Continued

Table 4 Continued

Phase*	Activity/Stakeholder	Bangladesh	Pakistan	Kenya	Nigeria	Nigeria 1	Nigeria 2	Nigeria 3
Phase IV	COVID-19 phone discussions	Bangladesh	Pakistan	Kenya 1	Kenya 2	Nigeria 1	Nigeria 2	Nigeria 3
	(n=86) ^{††}							
Community residents/ stakeholder groups discussions	Women (n=15) Men (n=16) Community leaders (n=14)	n=2 n=3 n=2 (men)	n=6 n=10 -	- - n=3 (men), total 9 discussions	- - n=4 (2 women, 2 men), total 12 discussions	n=2 n=1 n=2 (men), total 8 discussions	n=3, total 6 discussions n=1, total 4 discussions n=1 (man) discussions	n=2, total 5 discussions n=1 discussions n=2 (men) total 5 discussions
Local healthcare workers and managers discussions	Nurses/clinical officers/doctors (n=12) Pharmacists/PMVs (n=8) Community health workers/ volunteers (n=8) Traditional healers and birth attendants (n=5) Subcounty health managers (n=8)	n=3 n=4 n=4 n=2	n=2 - n=2 -	n=1 - n=1 - n=4 (1 man, 3 women)	n=1 - n=1 - n=4 (women)	n=2, total 5 discussions n=2, total 5 discussions - -	n=2, total 5 discussions n=1, total 4 discussions -	n=1, total 4 discussions n=1, total 4 discussions -

*Pre-COVID-19, the three stakeholder engagement phases were designed to support and complement wider project activities. They ran sequentially in each site and were tied to the availability of data from these other activities. Thus, each site followed a slightly different timetable in the implementation of their stakeholder engagements. This enabled cross-site information-sharing and helped us to streamline our approach as a whole. The timing of other data activities, as well as COVID-19, delayed planned activities in phase II (Bangladesh) and phase III (Bangladesh and Pakistan), leading to the smaller sample sizes reflected here.

[†]Phase I: inception meetings with stakeholders at micro-level and meso-level of the health system to introduce the project, identify stakeholder concerns about access to healthcare in each site and identify additional stakeholders for engagement (n=343).
[‡]In this meeting, participants undertook a mock exercise in which each stakeholder group assumed the role of another group to identify 'their' challenges and issues (eg, healthcare workers took on the role of community members/service users, county teams became healthcare workers). This role-play encouraged participation and provided an opportunity for clarification and discussion of access issues from multiple perspectives.

[§]Phase II: micro-level community engagement to explore health beliefs, practices, challenges and solutions with residents, leaders and healthcare workers (n=320).
[¶]Depending on the flow and direction of the discussion, researchers asked 'what if' questions to ground the issues in the experience of participants, for example, "What would you do if your neighbour needs urgent medical attention?" "What would happen if a young child has diarrhoea?"

**Phase III: feedback meetings to explore the meaning of the study results with stakeholder groups at micro-level and meso-level (n=111). Immediately prior to the COVID-19 pandemic, multistakeholder dissemination meetings were held in Nigeria and Kenya, bringing together a range of stakeholders, including many from previous engagements, to share and discuss results from our broader study. Similar events were planned in Bangladesh and Pakistan. However, these plans were disrupted with the emergence of COVID-19.

^{††}COVID-19 phase IV: telephonic engagement with stakeholders at micro-level to explore health needs and access to healthcare during the pandemic (n=86). Telephone calls were conducted over 4 weeks in April and early May 2020 with individuals drawn from different stakeholder categories. In Nigeria and Kenya, we held repeat conversations with some community residents/leaders and health providers (two to four calls per person). For all other stakeholders, we held once-off telephone discussions, in recognition of COVID-19 pressures on health workers and to bring in a breadth of perspectives in each stakeholder category.

NGO, non-governmental organisation; PMV, patent medicine vendor.

that private pharmacies have facilities for blood sugar-level testing and blood pressure measurements. In Pakistan, community residents, female health workers and pharmacists explained that screenings for hypertension, diabetes and HIV are only available at secondary/tertiary levels in the public sector, or by private providers. Stakeholders reported limited availability of public sector mental health services in all countries, except for Pakistan, where residents and health workers reported that there were no such services within the site. However, in all sites, traditional and spiritual healers were reported to provide services related to mental health and well-being. For gender-based violence, limited health services were identified by residents and local authorities in the two Kenyan sites but not the others.

COVID-19

Following the declaration of COVID-19 as a pandemic, the governments in all four countries instituted a range of containment and relief measures, including lockdowns, movement restrictions, curfews and financial aid packages (table 3). At the community level, stakeholder accounts reveal disruptions to healthcare service access as well as interrupted access to basic human needs like food. Illustrative quotes for each theme from each country are presented in table 5. Within the results text we provide additional illustrative quotes. To protect participant confidentiality, all quotes are attributed using the following convention: country-site/stakeholder role/gender.

Perception of access to care with the imposition of COVID-19 lockdown

With the imposition of restrictions due to COVID-19, stakeholders across all sites and categories reported disruption to services (table 5). Some facilities, including some pharmacists/PMVs, were no longer functioning at all. Others were only providing emergency care (eg, the non-governmental organisation (NGO)-run maternity centre in Bangladesh). While a few were operating on reduced or minimal services where opening hours were limited, stocks of medicines and other supplies were compromised and staff numbers low (or sometimes none) as staff could not get to work due to the lockdown:

Outpatient services are reduced because not all members of staff are able to come to work. Our ambulance goes round to pick staff who live close by (Nigeria Site 3/Nurse/Female)

Stakeholders reported reduced availability of some preventive services, including immunisation and reproductive, maternal and child health preventive services. In Kenya, routine growth monitoring and health promotion for children under 5 years was suspended. In Bangladesh and Pakistan, community-based immunisation and family planning programmes were suspended. In all sites, services delivered by community health workers in households were stopped due to movement restrictions.

In Kenya, a nurse explained that her primary care centre had diverted its emergency resources to COVID-19 preparedness:

Health facility has been forced to spend its emergency kitty on COVID preparedness. All money has been diverted to COVID. (Kenya Site 2/Nurse/Female)

In Nigeria, a health worker reported the arrival of a variety of resources for COVID-19 preparedness:

Support was provided for primary care health workers from the local government, Family and Community Development Initiative (FCDI) and Aids Prevention Initiative in Nigeria (APIN). These supports are in form of protection such as hand sanitizers, hand wash, face masks, gloves and basin for hand washing (Nigeria Site 1/Nurse/Female)

Health workers and managers reported that their national governments had issued guidelines for prevention of COVID-19 and for accessing care for COVID-19 cases. However, they were unaware of guidelines for continuing provision of healthcare for non-COVID-19 illnesses and preventive services in all but Bangladesh, where some mentioned recommendations for use of telemedicine and guidance for hospitals.

The general reduction in availability of healthcare to access was exacerbated for many residents because of increased costs of healthcare alongside reduced household income, increased challenges in physically reaching healthcare facilities and exacerbated reluctance of residents to seek healthcare due to fear of infection and stigmatisation.

Increased cost of healthcare alongside reduced household income with COVID-19 lockdown

Community leaders and residents explained that most residents survive through highly insecure employment in the informal sector, often undertaking multiple jobs that pay low daily wages. Before the pandemic, the cost of buying medicine was a problem for many residents. In Pakistan, health workers mentioned that patients sometimes reduce the dose of their medication so it lasts longer. In Nigeria, residents and PMVs described negotiating prices of medicines at the point of sale. Residents said that they would sell assets or borrow from neighbours or relatives to meet transport and healthcare costs in an emergency.

Price hike due to lockdown

In all sites, stakeholders across categories noted an initial increase in the cost of many health-related items, including facemasks, hand sanitizers, disinfectants, gloves and drugs, especially those bought from private providers:

Prices of drugs have increased greatly and this has affected the ability of people to buy drugs. (Nigeria Site 1/PMV/Male)

In Bangladesh and Nigeria, private-for-profit pharmacists and PMVs identified lockdown-related disruptions

Table 5 Key themes and quotes from stakeholders living and working in the study sites during the COVID-19 pandemic

Stakeholders	Bangladesh	Pakistan	Kenya (sites 1 and 2)	Nigeria (sites 1-3)
Increased cost of healthcare alongside reduced household income with COVID-19 lockdown	<p>Initial price hike due to lockdown</p> <p>Community residents and leaders</p> <p>Since the shops have closed, they are having problems regarding food supply. They are not being able to buy food. (Bangladesh/Resident/Female)</p> <p>Healthcare workers, including pharmacists, patent medical vendors (PMVs), nurses, doctors and volunteers</p> <p>Due to the citywide lockdown and closure of public transport, the medical supplies are slowly decreasing and therefore the price of medicines is going up. (Bangladesh/Pharmacist/Male)</p> <p>The supply of medicines is as normal. If the pharmacy does not have one particular medicine, they will restock it within a couple of days. She does not know if the prices have increased or not in this shutdown. (Bangladesh/Health worker/Female)</p>	<p>Prices of basic necessities are increasing day by day, and with lockdown and reduced household income, people cannot afford to buy basic items. (PK/Resident/Male)</p> <p>Prices of drugs related to fever and influenza have gone high in the past few days and supply are also short in the market. The drug stores who have these drugs available are charging high prices which people cannot easily afford so they have to take loans from others. (Pakistan/PMV/ Male)</p> <p>Public hospitals where drugs are available free of cost are also having shortage of drugs and people have to buy them from outside where the drugs are quite expensive and not all the people can afford it. (Doctor/Female)</p>	<p>Since wearing masks was made a requirement, a lot of people have had to reduce spending on other household items in order to afford them (referring to masks). (Kenya 2/Resident/Female)</p> <p>Cost of non-pharmaceuticals that are related to COVID-19 prevention has gone up, eg, masks and gloves. Price for other things has remained the same, although supplies have been disrupted. (Kenya 1/ Clinical officer/Female)</p> <p>There is no price hike in our facility. Being a public facility, the government cannot raise the price of its services at this time, although most essential supplies have been delayed making the patients purchase them outside which is expensive for them. (Kenya 2/Nurse/ Female)</p>	<p>Access to healthcare is quite hard for people now... Drugs are now expensive and people who need to use drugs continuously may not be able to afford the drugs anymore. (Nigeria 1/Community leader/Male)</p> <p>People can no longer afford to buy drugs, as drugs are expensive now. Also, buying drugs as vendors during this pandemic is a challenge because not all offices and companies are opened. (Nigeria 3/PMV/Male)</p> <p>People are complaining that there is no money... available antimalarial drugs and injections are therefore given/administered for free. (Nigeria 2/Nurse/Female)</p>
Lack of income for slum households due to lockdown	<p>Community residents and leaders</p> <p>Since there is no business at this moment he is suffering financially. Although his meagre savings are helping him for now, he is concerned about the future. He is embarrassed to ask his neighbours for any help. (Bangladesh/ Resident/Male)</p>	<p>Most people living here are working on daily wages. Some people were doing double jobs to earn money while many took loans. Now, they have to pay the loan and are very much worried. They do not have food to eat. (Pakistan/Community Businessman/Male)</p>	<p>Many have lost their income since most are casual labourers due to closure of many non-essential businesses such as hotels and restaurants. (Kenya 2/ Resident/Male)</p>	<p>There is low inflow of income and community members are finding it difficult to afford healthcare... if there is a serious case that requires going to the hospital, friends and family may help raise funds. (Nigeria 3/Resident/Female)</p>
Increased challenges in physically accessing healthcare facilities and services	<p>Healthcare workers, including pharmacists, PMVs, nurses, clinical officers, doctors and volunteers</p> <p>Due to financial problems created by the lockdown, people are having trouble affording or paying for general healthcare services. She herself has diabetes and is having difficulties in purchasing medicines like many others in the lockdown. (Bangladesh/Health worker/ Female)</p>	<p>People do not have enough money to buy medicines sometimes it happens that people come with a prescription of 1 week and due to less amount available they buy medicines for 3 or 5 days only. (Pakistan/PMV/Male)</p> <p>Most of the people coming to the clinics are working on daily wages and they are badly affected after lockdown. After getting the prescription people ask how much these drugs will cost, some also ask if there are any free samples available at the clinic. (PK/Doctor/Female)</p>	<p>The economic situation has become extremely difficult. A lot of people have been laid off and a lot of companies have closed down. (Kenya 1/Health Volunteer/ Male)</p> <p>Factories have also closed down or downsized, thus many people are now out of work. (Kenya 2/Health worker/ Female)</p>	<p>...sales have not been like before. Customers have been requesting to buy drugs on credit as they complain of not having money ... people are not going out as much as before. (Nigeria 1/PMV/Male)</p> <p>People would buy drugs only as last resort and after they must have tried other means. The money which should be used to buy drugs, they would prefer to use it to eat and would only buy the drugs when it is highly necessary. (Nigeria 3/Nurse/ Female)</p>

Continued

Table 5 Continued

Stakeholders	Bangladesh	Pakistan	Kenya (sites 1 and 2)	Nigeria (sites 1–3)
Community residents and leaders	The pharmacies are told to be open 24/7 but usually the pharmacies here close by 20:00–21:00 hours therefore people coming after hours cannot get medicines if they need. (Bangladesh/Community leader/Male) There are currently no MBBS doctors in the area. There are mainly village doctors like pharmacists with diploma. The few MBBS doctors who used to provide treatment services are not coming during the pandemic...All health programmes like immunisation are completely closed now. (Bangladesh/Community leader/Male)	Vaccination services provided by the community health workers have been stopped completely. (Pakistan/Community member/Male)	Residents are accessing care only at nearby facilities due to the time of the curfew and also to avoid using public transport which could lead to infection. (Kenya 2/Resident/Male)	The issue of transportation as a result of movement restriction is a challenge. People cannot visit their healthcare providers and healthcare providers cannot also visit patients at home to treat them; except those within trekkable distance. (Nigeria 3/Resident/Female)
Healthcare workers, including pharmacists, PMVs, nurses, clinical officers, doctors and volunteers	Doctors and clinics outside the slum who work closely with pharmacies inside the slums have requested the pharmacists not to send any patients to them as the facilities are not offering services now. (Bangladesh/Pharmacist/Male) Pre-COVID-19, there used to be a MBBS doctor who would visit the centre every Saturday, but that service has also been halted, due to the transport shutdown. (Bangladesh/Health worker/Male)	A drug seller located close to the clinic reported that the flow of patients to the clinic has decreased and so the patient coming to his store has also decreased. (Pakistan/PMV/Male) Only those people whose problem is unavoidable and they are unable to cure it at home are coming to the clinics. (Pakistan/Doctor/Female)	The curfew, has had an impact on the operating hours of the health facility. Initially, the day shift would end at 17:00 hours but now it ends by 16:00 hours, this means that by about 15:30 hours we start reducing the queue of patients. (Kenya 1/Health worker/Male) COVID-19 has disrupted supply of essential commodities such as medicines, which are running out of stock, and we are afraid our patients might not get proper treatment from us. If we cannot perform a laboratory test in the health facility, then we are limited in our capacity to make diagnosis. (Kenya 1/Healthcare provider/Male)	As a result of the curfews, stores including PMVs have to close by 20:00 hours and anyone who needs drugs by this time may not be able to get. (Nigeria 3/PMV/Male) Turn out at health facility is low because of the imposed lockdown... Only people within this vicinity still visit the Primary Health Clinic. (Nigeria 3/Nurse/Female) ... drugs are no longer available in the health centre because the government is focused on eradicating COVID-19. Thus, other illnesses and diseases are being neglected. (Nigeria 1/Nurse/Female)
Exacerbated reluctance of residents to seek healthcare due to fear and stigma				
Community residents and leaders	Residents are reluctant to seek medical care or visit hospitals if they have fever, cough and cold for the fear of being isolated or quarantined and not being allowed to come back home. (Bangladesh/Community leader/Male)	People have the fear of disease in their mind but due to non-affordability they cannot take proper safety measures. (Pakistan/Resident/Female)	There is stigma for suspected COVID-19 cases discouraging people from seeking care. (Kenya 2/Health worker/Female) Many parents are no longer taking their children for their vaccination shots. (Kenya 1/Resident/Male)	People are now being careful about their health as nobody wants to fall sick. Also, people would rather treat themselves at home than visit health facilities for the fear of being diagnosed with COVID-19. (Nigeria 3/Resident/Female)
Healthcare workers, inc. pharmacists, PMVs, nurses, clinical officers, doctors and volunteers	People in slums are scared that they will be reported to the police if they are tested for the virus. Some of the residents even think the virus infects only sinners and God will protect the good and poor people like them. (Bangladesh/Pharmacist/Male)	People are not very much aware of the disease and so they are not very fearful. (Pakistan/PMV/Male) Few people are aware of the disease and taking it seriously, they are avoiding to come to the clinic. (Pakistan/Doctor/Female)	Pregnant women are becoming increasingly afraid of getting infected with the virus, especially because of the unknown effects to their unborn babies. (Kenya 2/Health volunteer/ Female)	Community members still have access to regular healthcare provision, but some are sceptical about going to the hospital at a time like this and therefore would rather patronise patent medicine shops. (Nigeria 3/PMV/Male)
Mobile consultation using phones				
Continued				

Table 5 Continued

Stakeholders	Bangladesh	Pakistan	Kenya (sites 1 and 2)	Nigeria (sites 1–3)
Responses to the reduced access to health facilities during lockdown	<p>Community residents and leaders</p> <p>There are video-call consultation options with professional doctors but they usually charge fees which is difficult for slum residents. Then, there is also this group of people who are uneducated or do not have adequate technological skills to use these services. (Bangladesh/Community leader/Male)</p> <p>Healthcare workers, including pharmacists, PMVs, nurses, clinical officers, doctors and volunteers</p> <p>There are hotline numbers for coronavirus-related services being disseminated on TV and everyone is aware of those, so they can call these numbers in cases of coronavirus-like symptoms. The information and awareness about where to contact and how to get consultation ...is widely available and well known in the community. (Bangladesh/Pharmacist/Male)</p> <p>Over the phone, health workers are regularly getting updates on their patients' health. They are also using this platform to inform the patients on the dos and don'ts in this pandemic to prevent virus transmission. (Bangladesh/Health worker/Male)</p>	<p>People call their doctors to whom they have been going since long time who know their condition very well and take guidance from them. (Pakistan/Resident/Male)</p> <p>People in the community are mostly illiterate and they do not know much about using phone to consult a doctor. (Pakistan/PMV/Male)</p>	<p>Using mobile phones to access healthcare is a good thing because it can reduce waiting lines at the health facilities and reduce self-medication because people can consult healthcare providers first. (Kenya 1/Resident/Male)</p> <p>Most mobile communication is between community health volunteers and the community. (Kenya 2/Health Volunteer/Male)</p>	<p>Community members use their phones to call health workers to discuss health issues. They also use it to read text messages relating to health and safety from Nigerian Centre for Disease Control. (Nigeria 2/Resident/Female)</p> <p>Community members more often call health workers to make enquiry about their health condition. They are either told what to do or referred to the PHC for medical examination. (Nigeria 2/PMV/ Male)</p> <p>The community members sometimes call the health workers. They have the contact number of the PHC. Whenever they have any health problem, they call the contact person at the PHC to know if the centre is open and whether they will be attended to when they come. (Nigeria 2/Nurse/Female)</p>
Increased patronage of local available services	<p>Community residents and leaders</p> <p>Only pharmacy vendors who have done certain short-term pharmacy courses/diplomas are available and are advising for and selling medicines for acute conditions but there are no professional doctors now inside slums to prescribe medicines formally. (Bangladesh/Community leader/Male)</p> <p>Patients are afraid of going to hospitals. Patients with non-COVID-19 illness are not getting proper treatment. Many private hospitals have closed and doctors have decreased their visits. So now patients with diabetes, hypertension are struggling and are relying on pharmacies for any health issues. (Bangladesh/Pharmacist/Male)</p> <p>There are no healthcare services here now, except for the handful of pharmacies (Bangladesh/Health worker/Female)</p>	<p>People consult female health workers for minor illnesses and also in case of major illness these workers guide them where to go. (Pakistan/Resident/Female)</p> <p>The earning power of most of the people is affected; people are avoiding to go to the doctor to save money and they are trying home remedies. (Pakistan/Resident/Male)</p> <p>People coming to get over-the-counter drugs for their illnesses have increased, many people come and they tell their symptoms and ask for medicines. (Pakistan/PMV/Male)</p> <p>People are coming to pharmacies with their old prescriptions and they buy the same drugs prescribed earlier. (Pakistan/PMV/Male)</p> <p>Over-the-phone consultations have increased after lockdown. (Pakistan/Doctor/Female)</p>	<p>People are more dependent on chemists than before. This is because of the long queues at the health facilities (where people are being instructed to stay 1.5 m apart). (Kenya 2/Resident/Male)</p>	<p>There are (auxiliary) nurses in the community who offer home treatment and they still provide drugs and treatment during the pandemic. (Nigeria 3/Resident/Female)</p> <p>The COVID-19 pandemic is having a continued negative effect on community member's ability to access health care. People are now using herbs (agbo) which is very cheap. (Nigeria 2/PMV/Male)</p> <p>(Since the lockdown) most people patronise the PMVs for their health problems. Others use private hospitals and traditional/fath-based healers. If the health problem is beyond the capability of PMV or traditional healer, they present at the (public) primary healthcare centre. (Nigeria 2/Nurse/Female)</p>

in the supply chain leading to price increases. However, staff working in public sector services in Nigeria, Kenya and Pakistan reported no rise in drug prices. Moreover, in Nigeria (site 2), a nurse mentioned that fees had been removed for various drugs in response to COVID-19-induced financial hardship within the community. However, drug shortages and supply chain issues in the public sector meant that in some cases, people had to purchase drugs from private-for-profit pharmacies and drug stores.

Lack of income for slum households due to lockdown

In all sites, stakeholders reported that, for most, work for a daily wage was halted during lockdown. Other residents lost their jobs as companies were shut or went out of business. The few on salaries generally had these reduced. The lack of income caused widespread distress, leaving residents unable to buy enough food, pay rent or afford healthcare.

The COVID-19 pandemic has affected the economic ability of community members to access healthcare ...people do not have enough money for food, hence, they cannot use what they have to buy drugs. (Nigeria Site 2/Community member/Female)

A pharmacist in Bangladesh explained that:

Around 80%–85% of the residents are stuck inside the slum with no work or mode of income so poverty is becoming the main problem. Therefore, people are more at risk of dying of hunger and poverty at this point than the disease outbreak. (Bangladesh/Pharmacist/Male)

He said that consequently, pharmacies were extending credit to their regular customers during lockdown.

There were a few reports that governments, NGOs and philanthropists were providing some relief:

One NGO is providing financial aid to each family and buying residents food... Another NGO gave aid to hundreds of families (rice, pulses, oil, salt) (Bangladesh/Community leader/Male)

Similarly, [table 3](#) identifies a range of immediate and long-term government and donor actions intended to mitigate the economic consequences of COVID-19, many aimed at low-income communities. Yet, in all sites, there was general agreement that such aid was ‘not enough’. (Pakistan/Community member/Female)

Increased challenges in physically accessing healthcare facilities

Community leaders and residents described pre-COVID-19 challenges of reaching healthcare facilities outside of the slum, particularly for emergencies. There are state-provided ambulances but in all study sites it was difficult for ambulances to enter due to congestion, narrow streets and haphazardly parked vehicles. In an emergency, a patient would usually be rushed by private transport (eg, motorcycle/tricycle) to the nearest hospital. Healthcare workers and residents in all sites explained that for pregnancy-related emergencies, a slum

resident might first call a traditional birth attendant who sometimes, if necessary, would accompany patients to hospital. However, this practice was reportedly declining in Bangladesh with residents generally able and preferring to access the NGO-funded maternity centre in the site. With COVID-19, stakeholders reported that the lockdown had reduced the ability of people to move around, even for emergencies. Furthermore, reduction in local healthcare provision meant people had to travel further for their care, but this too was difficult.

People find it difficult to go to the health centers or go to buy drugs as they may need to trek some distance. (Nigeria Site 3/Nurse/Female)

In Bangladesh, the public hospital generally used by slum dwellers was designated for patients with COVID-19, thereby requiring residents to seek care elsewhere for other health conditions.

Exacerbated reluctance of residents to seek healthcare due to fear and stigma

Across sites, it was reported that slum residents were reluctant to go to a hospital outpatient clinic for symptoms such as cough and fever for fear of being suspected of having COVID-19. Stakeholders explained that residents were concerned that if doctors in hospitals, working with protection, were contracting the infection and some were dying, how could they hope to avoid infection and if infected, death? Health workers thought fear of infection was one reason for a reduction in the number of residents seeking healthcare from facilities that were open:

About 10 to 15 patients visit the health facility daily. However, since they became aware of the pandemic, their visitation has reduced especially for general conditions like malaria etc. (Nigeria Site 1/Nurse/Female).

Fear of being quarantined and stigmatised were also identified as barriers to care-seeking in all of the sites:

Recently, there were medical teams from the government visiting the slum to collect samples from people with COVID-19 like symptoms. However, on the first day, hardly anyone showed up for testing. This was mostly due to the fear of stigmatisation. (Bangladesh/Health worker/Male)

Responses to the reduced access to health facilities during lockdown

Stakeholders identified efforts by health facilities, health workers and/or residents to overcome access problems caused by the lockdown.

Mobile consultation using phones

To mitigate the challenge of physical access, some health workers and residents reported using their phones for healthcare:

We have given out telephone numbers for the rapid response team to help with COVID-related cases. We also have a health facility telephone numbers for patients to call and talk to a health worker for non-communicable conditions that need monitoring. That way we can continue

providing other services besides COVID-19 and ensure continuity of services. (Kenya /Member of the subcounty health team/Female)

People call us over the phone for consultation they tell their symptoms and we try to help them as much as we can. (Pakistan/Doctor/Female)

In both Kenyan sites, a private-public partnership provided pregnant women with an emergency number for a free taxi transfer to a health facility at night during COVID-19 curfew hours. In Pakistan, female health workers were reported to be providing maternity-related advice over the phone or arranging consultations by appointment.

Healthcare workers were also using their phones to gain advice from other team members when needed:

When pregnant women visit the centre with cases that cannot be handled by the nurse on duty, the nurse calls the matron or other senior staff for help on what to do. (Nigeria Site 1/Nurse/Female)

Increased patronage of local available services

Before the pandemic, residents in all sites reported that for common ailments such as fever or diarrhoea, they would usually start with home remedies (eg, boiled rice water in Pakistan) and self-medication (such as oral rehydration solutions or syrup purchased from the nearest drug store). Only if symptoms persisted, would they then visit a primary care clinic, doctor's chamber or hospital outpatient clinic near to them within or outside the site. In Pakistan and Nigeria, some mentioned that they might also visit a faith or traditional healer.

With disrupted healthcare access during the COVID-19 lockdown, stakeholders in all sites said residents were relying even more on home remedies and locally available in-site services for all of their health needs. As [table 1](#) shows, pre-COVID services available in the sites were mostly pharmacies or PMVs (often staffed by assistants without formal qualifications), traditional healers and some private health centres (usually small facilities for specific conditions). Going to their usual primary care or hospital clinics when they are not improving or are getting worse would be a last resort for residents, if a possibility at all.

DISCUSSION

In these slum communities, residents have been hit hard by societal responses to COVID-19, with reduction in local services, difficulties reaching healthcare facilities and increased cost of drugs. Slum residents are avoiding formal healthcare where it exists for fear of being diagnosed or becoming infected with COVID-19. Some residents and health workers are using their mobile phones for health consultations. Others are turning to locally available healthcare services, often staffed by providers with minimal healthcare training, and to traditional healers.

Our stakeholder perceptions of the illnesses common in the slum communities are broadly similar to the

patterns of communicable and non-communicable health conditions previously reported in African and Asian slum settlements.^{22–25} Pakistan is known to have relatively high prevalence of hepatitis.²⁶ Mental health issues were not perceived as common although there is evidence that slum dwellers are at higher risk of common mental disorders than non-slum dwellers.²⁷ Primary care—both preventive and responsive—was described as available in the slums pre-COVID-19 but included considerable use of providers who are not part of formal health systems. There was little provision for mental healthcare and, in only the Kenyan sites, were services for gender-based violence mentioned despite its prevalence and impact on slum dwelling women.²⁸

The findings of our stakeholder engagement about the impact on healthcare access of COVID-19 lockdowns are consistent across all four countries and seven slums and are similar to the predictions of experts.^{10 29} We found evidence of individual responses to the pandemic from within healthcare such as health workers providing remote consulting using their mobile phones. WHO advises the use of mobile consulting to protect health workers and patients but gives little detail about how.³⁰ However, there is growing evidence of the potential for mobile consulting to enhance provision of healthcare to remote and marginalised populations,³¹ although this is not without some loss in the quality of the patient-health worker encounter.^{10 31} Support from the state and non-governmental agencies varied with some providing support to tackle COVID-19 and mitigate the impact of the lockdown,¹⁰ but without mention of meeting the specific needs of women.³² Although some pharmacies assisted regular customers with credit and medication, there were reports of low stocks and indications from the media of stockpiling. The inability to provide for basic needs, which for many includes medication, is a factor in increasing stress and mental illness in these settings.^{33 34} Any reduction in provision of immunisation, even if temporary, should be avoided because of the potential for an increase in incidence of infectious disease such as measles.³⁵ Pre-COVID-19, there was little provision of services for mental health and gender-based violence and there are no reported new services with the onset of COVID-19 lockdowns. This is despite the impact the lockdowns are likely to have on mental well-being³⁶ and the rise in gender-based violence that is beginning to be reported globally.^{37–39}

We found little evidence of strategic action on the part of the communities in the study sites at the current time. This contrasts with initiatives in other slums, such as in Brazil where community leaders have used their existing community innovation organisation to provide healthcare.⁴⁰

Strengths and limitations

We have been able to compare the perspectives of stakeholders experiencing and delivering healthcare pre-COVID and during COVID-19 lockdown. Our seven slum sites were in four countries on two continents providing

diversity of context and increasing the transferability of our findings to other slums. We purposively engaged diverse stakeholders to ensure we were hearing from different groupings within the slum communities and from different types of healthcare provider. The country teams contextualised the stakeholder engagement findings with available policy and media coverage. However, what we report is the *perspective* of stakeholders who may not, for example, realise an apparently closed health facility is functioning by providing remote consulting or that what they experienced was transient as health services adapted to the lockdown. Yet, perceptions are important drivers of health-related behaviours.⁴¹ We focused our engagement with people at the micro-level and meso-level of the health system as this is where the effect of policies is experienced.¹⁶ This allowed us to recognise their challenges and solutions and feed them back to policymakers at the macro-level.^{15 17}

Participants were recruited by fieldworkers with site familiarity, working through organisations with experience of community-level research. However, we only reached (i) those self-identifying as disabled and (ii) belonging to formally constituted youth groups in two research sites and are likely to have missed engaging with people from other vulnerable groups. The research teams undertaking stakeholder engagements were trained to convey to the stakeholders that they were the experts and we, as researchers, needed to hear from them. We used facilitation techniques that aim to reduce power dynamics in groups. Despite this it is likely stakeholders were influenced by social desirability, their expectations of the research and researcher positionality.⁴² The shift from face-to-face interactions to telephone calls reduced non-verbal cues which can be important in deepening the conversation.⁴³ However, many stakeholders were already familiar with the project so rapport was established—important for interview quality regardless of mode.⁴³ Telephone calls enabled safe, timely stakeholder engagement which would not have been possible face-to-face during COVID-19 lockdowns.

Implications for policy and practice

Our findings suggest that for slum communities, effective communication is needed about COVID-19 and about health service provision: what services are available, what precautions are being taken to prevent virus transmission and who should continue to seek healthcare? This can build on lessons learnt from the Ebola outbreak⁴⁴ and COVID-19-related guidance for marginalised populations.⁴⁵ It could take the form of an information hotline, radio broadcasts and messages on social media. Communication with pharmacies and PMVs for onward communication to the community (eg, posters for their shops and information shared verbally) may be effective as residents rely on these providers for much of their healthcare. Traditional healers have a recognised role in communication about COVID-19.⁴⁶ Where there are existing good relations between formal healthcare

and traditional healers, they can be called on to direct patients to formal healthcare when it is in the patient's best interest (eg, pregnancy and long-term conditions such as diabetes). To support these communication initiatives, local healthcare providers should plan for remote consulting^{21 31} to reduce patient contact and reserve personal protective equipment for necessary face-to-face contact.

Policymakers and those planning healthcare access are responsible for considering the impact of their COVID-19 containment strategies specifically on slum communities so these communities are not disadvantaged to a greater extent than other communities. They need to ensure that healthcare costs and the costs of reaching healthcare facilities do not escalate and further deter healthcare usage. Provision of additional mental health services and services targeting gender-based violence should be considered.

CONCLUSION

In the face of COVID-19, slums pose a challenge. It is in this arena that we can observe how nations protect the most vulnerable in their society and, controlling the pandemic in slums is necessary for the benefit of the local and wider population. Strengthening their fragile healthcare provision would both help mitigate the effects of COVID-19 and future pandemics and contribute to meeting health-related sustainable development goals.^{47 48} In the face of COVID-19, slums are a challenge for controlling the pandemic for the benefit of the local and wider population and a challenge to nations to protect the most vulnerable in their society. Strengthening their fragile healthcare provision would both help mitigate the effects of COVID-19 and future pandemics and contribute to meeting health-related sustainable development goals.^{47 48}

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