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Regular Article

Perceptions of Kenyan healthcare workers: Assessing national and county governments' pandemic response

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ABSTRACT

Background: During the coronavirus-19 pandemic (COVID-19), governments tailored various containment measures and the perspectives of health care workers (HCWs) directly affected by these policies are therefore indispensable. The purpose of this study was to investigate perceptions of both the National and Kiambu County governments' responses to the COVID-19 pandemic from the perspective of HCWs.

Methods: We conducted a mixed-methods cross-sectional study using a semi-structured questionnaire with 438 HCWs in Kiambu County, Kenya, from March 11 to August 12, 2021. Qualitative inductive and deductive data analyses was used in this research.

Results: The majority of respondents were females (n = 276, 64.5%), middle aged (n = 170, 38.8%) and were caregivers (n = 322, 73.5%). Nine themes emerged: i) Adequate government response; ii) Laxity in public compliance; iii) Lack of healthcare resources; iv) Aggressive initial policy; v) A misinformed public; vi) Slow and inadequate response; vii) Optimism; viii) Decayed adherence to protocols; and ix) Breakdown of systems.

Conclusion: Although HCWs had a variety of viewpoints, both county and national governments received similar feedback. Most HCWs lauded the governments' early and sufficient actions as well as their confidence over the pandemic's future. However, there is still room for development. Concerning factors cited by HCWs included public apathy, false information, a lack of resources, a delayed first response, and systemic failure. HCWs should be included in government processes, such as healthcare budget allocation and guaranteeing prompt payment, to build trust in public institutions and prepare for future health crises. In addition, moderating social media, revising policies, and advancing public understanding are all necessary for combating public misinformation going forward. By putting these suggestions into practice, we can allay the grievances of HCWs and reduce inequities in response to health emergencies not just in Kenya, but similar low-to-middle income countries.

1. Background

Public governance is fundamental in times of crisis. This was no different during the Coronavirus disease-19 (COVID-19) pandemic. Governments worldwide responded by tailoring a myriad of policies to curb the spread of COVID-19 and contain it (Mallah et al., 2021). In low-and middle-income countries (LMICs), these efforts were also aimed at reducing the predicted collapse of an already fragile health system, such as the measures put in place in Kenya (Barasa et al., 2021). Therefore, governance structures have been vital in countries' initial reactions, and they will continue to be so throughout recovery from COVID-19, and in the aftermath. In light of this, HCWs' perspectives are indispensable due to their critical role in responding to the jolt of the pandemic (Mackworth-Young et al., 2021).

Following the promulgation of the constitution in 2010, Kenya's government was devolved, and thence comprised a national government and forty-seven county governments (The World Bank Group, 2019) . This system was then implemented in 2013 to remedy the resulting disparities associated with centralized governance such as imbalanced resource allocation (resulting in lop-sided regional development),

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marginalization of communities, and a failure to engage citizens in civic processes (The World Bank Group, 2019). Following devolution, the healthcare workforce fell majorly into the hands of the county governments of Kenya who were tasked with policy implementation and service delivery while the national government offered policy direction via the Ministry of Health (The World Bank Group, 2019; Wanyande & Mboya, 2016).

For this, then, context-specific gaps in the government response need to be fully elucidated, as the true test of governance comes in times of emergency and crisis. Therefore, the primary objective of this study was to explore the perspective of the HCWs on the initial response and current management of the COVID-19 pandemic by both the National and Kiambu County governments in Kenya, a middle-income country.

2. Materials and methods

2.1. Study design

This study adopted a mixed-methods cross-sectional approach using semi-structured questionnaires from the 11th of March to the August 12, 2021.

2.2. Study setting

Kiambu County (Latitude: 1.146188, Longitude: 36.966499), in central Kenya boasts a diverse economy and well-connected infrastructure. The county occupies a land area of 2543.5 Km^2 (Onsomu, 2023) in central Kenya and boasts the 2nd largest GDP of the country (Tabnacha, 2022). By August 2021, the total caseload of COVID-19 in the county rose to 11,314 (Onsomu, 2023), and this study was conducted during the third wave of COVID-19 in Kenya (Brand et al., 2021). The county cascaded several of the national government COVID-19 mitigation measures which included: educating the public about Covid-19, enforcing hand hygiene, social distancing, curfews, imposing travel restrictions into and from the county and enforcing compulsory wearing of masks in public (Ministry of Health, 2020; Ministry of Health: Kenya, 2023). Tigoni Level 4 Hospital was Kiambu county's COVID-19 isolation center.

2.3. Study population

3700 HCWs of various cadres serve the county public health system of Kiambu, which is distributed among 449 public health facilities. These HCWs were targeted to take part in this study.

2.4. Study sample

A sample size of 384 was calculated using Cochrane's method ($n = \frac{Z^2pq}{e^2}$), with a 95% confidence interval providing $Z = 1.96$. In the absence of a comparable study, p was taken to be 50% and the sampling error e to be 0.05. This calculated sample size was integral to our mixed-methods cross-sectional approach, facilitating the analysis of the quantitative data.

HCWs that formed the sample exclusively consisted of healthcare workers (HCWs) in Kiambu county, selected through volunteer sampling.

2.5. Participant description

438 HCWs volunteered to participate.

The HCWs were classified into caregivers, administrative staff and environmental health workers. Medical officers, consultants, nurses, clinical officers, dental officers, dental technologists, pharmacists, pharmaceutical staff, laboratory staff, orthopedic technologist, nutritionists, radiographers, physiotherapists and mortuary attendants were classified as "caregivers". Health administrative officers and staff, health-supportive staff, medical engineering technologists, health records & information officers, medical social workers, ambulance drivers, and HIV testing services staff were classified as "administrative staff". Community health volunteers, health promotion officers, and public health officers/community health officers were classified as "environmental health workers".

2.6. Data collection

A semi-structured questionnaire with responses in a Likert scale ranging from "strongly agree" to "strongly disagree" was used as it reduced the "frustration" of respondents while concurrently increasing response quality and response rate (Sachdev & Verma, 2004). The questions are depicted in Table 1. Each question was followed up with an open-ended question to allow the HCW to freely expound on their initial response.

2.7. Data analysis

Both inductive and deductive data analyses were conducted on the open-ended questions (Azungah, 2018), in a method mirroring that of Bennet et al. (Bennett et al., 2020). To guarantee that a name, definition, and an extensive amount of data were selected to support each category, the initial analysis was carried out by PJ, and the data were rigorously examined by MK and team members. This led to the basic codes being further expanded, and then indexing and graphing were carried out until a consensus on the emergent themes was obtained.

Ethical approval

Ethical approval was sought and granted (Ref. UEAB/REC/June 07, 2020). All the study activities and data handling were in strict compliance to the Code of Ethics of the World Medical Association (Declaration of Helsinki). Written informed consent was obtained from each participant before conducting the survey. Personal identifiers were not included during data collection, data entry or analysis.

3. Results

3.1. Participants

Table 2 summarizes the demographic characteristics of the participants of the study. There were 438 health care workers who consented and participated. Most of the respondents were female (n = 276, 64.5%) and middle-aged (n = 170, 38.8%). Majority had a diploma (n = 263, 60.0%) and were directly involved with patient care (n = 322, 73.5%).

Fig. 1 illustrates the proportion of responses from the surveyed participants.

Kenya was in a good position to contain COVID-19 according to more than half of respondents (51.1%), whereas the government of Kiambu received similar sentiments from 45.3% of respondents. The statement "At the beginning of the pandemic, Kenya handled the pandemic well" revealed that 52.3% agreed that nation handled the pandemic well at its

Table 1
Questions asked to the HCWs to deduce both the national and county government's handling of the pandemic.

	Questions
1	Kenya is in a good position to contain COVID-19
2	Kiambu county is in a good position to contain COVID-19
3	At the beginning of the COVID-19 pandemic, Kenya handled the pandemic well
4	At the beginning of the COVID-19 pandemic, Kiambu county handled the pandemic well
5	Currently, Kenya is handling the pandemic well
6	Currently, Kiambu County is handling the pandemic well

Table 2
Sociodemographic characteristics of the respondents.

Variable		Number (%)
Sex (N = 428)	Female	**276 (64.5%)**
	Male	144 (33.6%)
	Prefer not to say	8 (1.9%)
Age (N = 438)		
	20–34	165 (37.7%)
	35–44	**170 (38.8%)**
	45–64	103 (23.5%)
Education (N = 438)		
	Certificate	40 (9.1%)
	Diploma	**263 (60.0%)**
	Bachelors	84 (19.1%)
	Masters	40 (9.1%)
	PhD	6 (1.4%)
	Other	5 (1.3%)
Cadre (N = 438)		
	Care givers	**322 (73.5%)**
	Administrative staff	66 (15.1%)
	Environmental health staff	50 (11.4%)

onset. Similarly, 46.5% of HCWs in Kiambu County agreed with the initial handling of the pandemic in the county. However, when it comes to the current handling of COVID-19, less than half of the respondent's expressed confidence in both Kenya (44.0%) and Kiambu County (44.1%) in effectively managing the situation. Thus concludes the responses garnered for the structured questions.

Open-ended questions were followed-up for each response. As illustrated in Table 3, part A of this study presents the responses as regards the county and country preparedness. Part B presents HCW opinions on the initial government response. Part C covers the current handling of COVID-19 both nationally and at the county level. This table entails the emerging themes from the survey responses.

3.2. A. Country and county are in a good position to contain COVID-19

3.2.1. Adequate government response

Proponents of the favorable position of Kenya in the fight against COVID-19 county argued that the guidance and measures put in place by the national government were effective because there were "limited cases". Curfew, educating the public, establishing and equipping isolation centers, and allocating resources towards COVID-19 measures were well praised.

> "Mortality has remained low and with vaccine roll out its going to be contained" **Respondent_14**

> **"**The country has taken expert opinion irregardless of the public perception**"** **Respondent_19**

> **"**Because it's taking this issue seriously by imposing night curfews to curb movement, always encouraging Kenyans to clean their hands and wear protective equipment and the recent arrival of the vaccine, all these are a proof of a country that is ready to protect the pandemic from infecting and killing it's citizens." **Respondent_103**

Other minor themes included political goodwill and early and

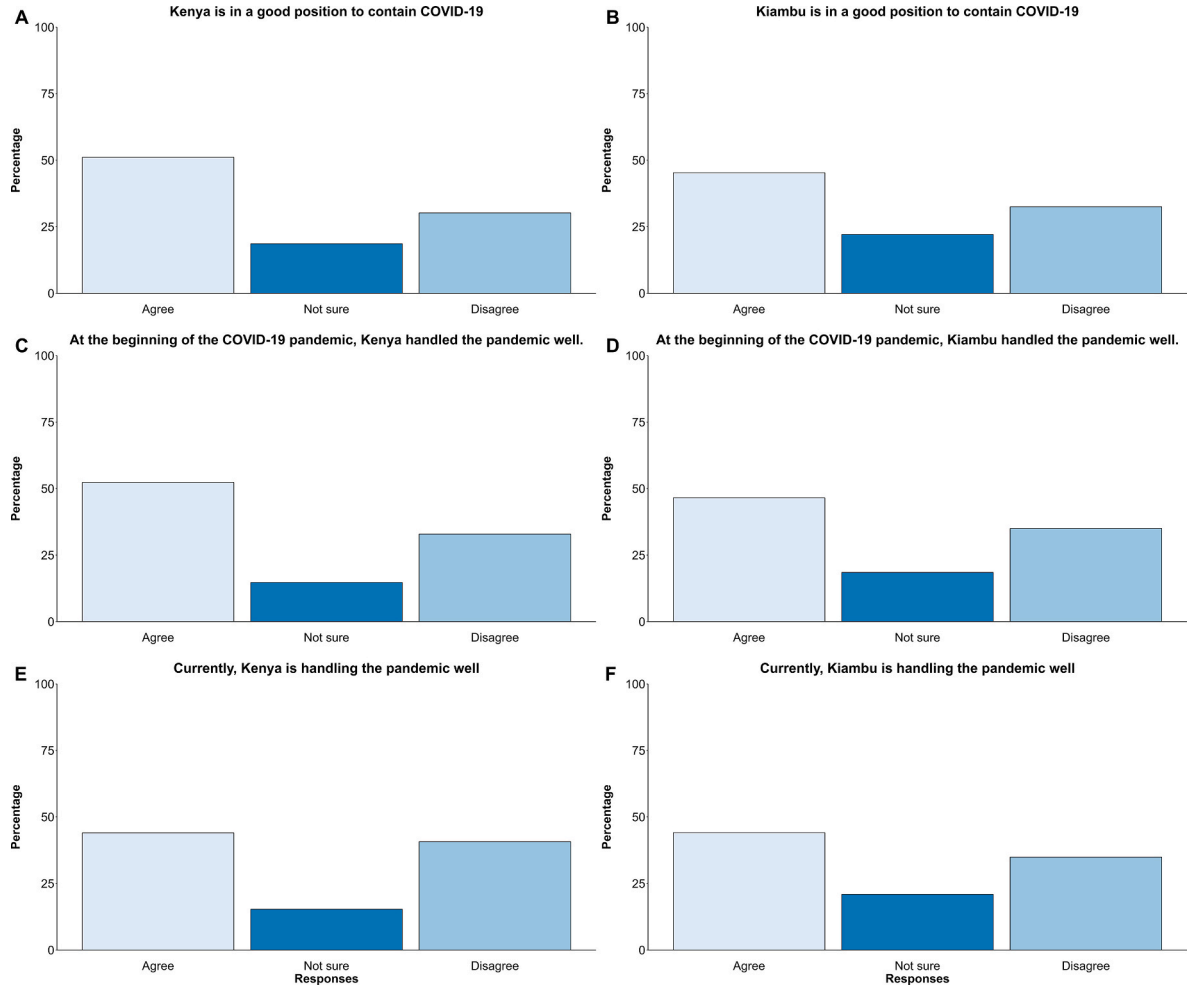

Fig. 1. The proportion of questionnaire responses for each closed-ended question. This was then followed up with an open-ended question which allowed respondents to expound on their initial response.

Table 3
Emerging themes from the three different questions asked to the respondents, the subthemes and the number of times the codes were mentioned in the raw data.

	Theme	Subtheme	Number of times mentioned
A: Country and county are in a good position to contain COVID-19	Adequate government response	Containment measures Awareness Resources Low infection/ death rates Vaccine	89
	Laxity in public compliance	No enforcement Disregard of guidelines	39
	Lack of healthcare resources	Corruption "Not enough …" Limited capacity Poor management	102
B: Initial response at the country and county level	Aggressive initial government policies	Fast Lockdowns/ Containment measures/curfew Training/ Education Sensitization	148
	A misinformed public	Stigma Ignorance	19
	Slow and inadequate initial response	Foreigners/Chinese Late Lack of resources	118
C: Current handling of COVID-19	Hopeful	Vaccine Protocols Updates & education Enough resources	131
	Poor and decayed public adherence	Relaxed public Not strict	45
	System breakdown	Corruption No resources No vaccines	57

stringent measures being followed to curb the spread of the virus resulting in low mortality. These themes were conditional and based on the hypothetical situation that the Ministry of Health guidance was followed.

"… If there is political support from the leadership." **Respondent_6**

"… If we follow ministry of health guideline toward eradicating and preventing spread of covid-19" **Respondent_23**

"… If the preventive measures put in place are enforced and adhered to." **Respondent_57**

Those who agreed with Kiambu county's favorable position to contain COVID-19 echoed many of the reasons given for the nation as a whole. However, there was an emphasis on the establishment of a COVID-19 isolation centre within the county, and creating awareness on COVID-19 stood out.

"Because we have isolation hospital and the county administration are helping to install government rules on covid −19" **Respondent_63**

"Kiambu was on the fore front in conducting webinars that were meant to educate it's health workers about covid 19, it has also distributed information on where it's health workers will get a jab for covid 19.**" Respondent_103**

3.2.2. Laxity in public compliance

Respondents who doubted or disagreed with the success of the national government's response pinned it on neglected measures and misinformation which contributed to "New infections … rising each day".

"… The population are still stuck with their beliefs" **Respondent_5**

"Frequent outage of PPEs, test kits, normal lifestyle in general population, rising number of infections and mortality, top leaders' disregard for preventive measures, limited infrastructural capacity**" Respondent_7**

"Because a good percentage of Kenyans are still seeing covid 19 as a hoax, they are not social distancing, wearing masks and sanitizing**" Respondent_50**

"Kenyan[s] have [chosen] to live carefree li[v]es**" Respondent_114**

At the county level, similar responses were given.

"Haven't seen strong enforcement of safety measures amongst the public." **Respondent_99**

"Patients are seen in large numbers crowded in the hospital and some not wearing masks" **Respondent_10**

3.2.3. Lack of healthcare resources

There was a general sentiment that Kenya lacked resources that were crucial in the fight against COVID-19 such as personal protective equipment (PPEs), healthcare workers (HCWs), intensive care unit (ICU) beds, equipment, vaccines, and funding.

"We don't have enough facilities, PPES and workers**" Respondent_385**

"ICU beds are full in all the hospitals" **Respondent_333**

"The PPEs are usually not enough and sanitizers are always out of stock" **Respondent_259**

"So far from the media there is no enough Astra Zeneca vaccine for the 2nd dose" **Respondent_229**

Some of the respondents attributed this lack to government corruption and national government mismanagement of resources, which discouraged their efforts.

"Theft of [covid] funds overruned health facilities and lack of PPES makes us not well prepared" **Respondent_338**

"Corruption, misappropriation of funds" **Respondent_331**

"Corruption, politics, very frustrated staff" **Respondent_312**

"No PPES for medic who are the Frontliner in Kenya coz of corruption" **Respondent_100**

Similar themes emerged at the county level where those who opposed Kiambu county's readiness attributed it to similar lack of resources.

"Patients are still sharing beds in our hospitals including COVID suspects plus county politics are just busy doing PR instead of providing the relevant services." **Respondent_60**

"Even the health workers do not have proper ppes, managing suspected cases of covid 19 together with other patients.This in turn increases the spread of the virus." **Respondent_15**

"THERE is No ICU in their Covid centre. Not even one bed" **Respondent_72**

"Enforcement issue.limited supply of masks to [HCP]. [You're] given only the exact number if one gets spoilt when on duty you sort yourself.No strong ipc (infection committee. Kiambu public do not take the measures seriously." **Respondent_43**

3.3. B. Initial government response

3.3.1. Aggressive initial government policies

Respondents who agreed with the robustness of the initial response at national level attributed it to the "aggressive" handling of the pandemic in the early stages and the myriad of measures to control the spread of the scourge. The HCWs were supportive of the measures put in place immediately and were pleased with the timing of the response.

"There was daily briefing on the disease, containment measures was done, contact tracing was done restricted travel, isolation and quarantine measures was done." **Respondent_17**

"… Contact tracing,lock down,washing hands,sanitizing in public vehicles ,mandatory wearing of masks" **Respondent_97**

These feelings were further reflected at the county level.

"We had proper ppes,acted faster in case of a suspect," **Respondent_15**

"Electives were suspended immediately, screening tents were set up, holding rooms and isolation wards were built and equipped, the public health dept worked tirelessly to sanitize, hand washing stations were put up everywhere, protocols were set up for each department and the mobile outreach team performed wonderfully" **Respondent_25**

"Setting the guidelines to follow by every person, creating awareness of the disease and it's dangers, contact tracing for the suspects and isolating the infected ones." **Respondent_111**

3.3.2. Public misinformation

Those who did not agree that the country and county had a good initial response pinned it on a mixture of misinformation and ineffective communication about COVID-19.

"… there is an illusion and misg[u]iding among the population trying to convince others that the infection does not exist." **Respondent_88**

"People did not believe that there is covid" **Respondent_42**

"The people mostly in rural areas dint have information about [covid] so they dint follow the guidelines from MINISTRY OF HEALTH" ***Respondent_308***

"No[t] sure because of lack on proper information people were not well informed so the guidelines from WHO were not fully followed" **Respondent_301**

"The general population is still s[k]eptical about the measures they are supposed to implement to protect themselves. The politicians are also not leading by example." **Respondent_26**

3.3.3. Slow and inadequate response

Respondents who either strongly disagreed or disagreed with the statement "In the beginning, Kiambu/Kenya handled the pandemic well" seemed to pin it on the delayed response. For Kenya particularly, the continued arrival of foreign flights in the country was the more recurrent reason.

"The government waited till too late to ban foreign flight esp from china where the virus originated" **Respondent_32**

"For example you can not open the door to a [biting] dog and thats what the government did when they allowed the plane touch down on our soil from the source" **Respondent_88**

"If international movements or flights had been prevented from entering the country, I strongly believe that it would have prevented the pandemic from reaching" **Respondent_103**

On the side of the county, however, the respondents laid blame on the lack of resources on the ground which was coupled with stigma. This culminated in a slower and less robust response than was expected. The HCWs also relayed that their training and sensitization were inadequate.

"Supplies,knowledge,coordination,isolation,documentation,reporting was not well coordinated" **Respondent_53**

"Stigma was high, no proper training to front line workers was done with majority not even trained to date" **Respondent_40**

"Capacity building of workers not done across board, PPE supply not adequate and appropriate. Stigma took a centre stage thus the initial patients not handled well. May have long lasting psychological issues. Testing not done frequently and results taking too long. Lockdown, fumigation exercise sensitization etc" **Respondent_69**

A less prominent sentiment about a lack of adequate remuneration by Kiambu county was put across by the HCWs.

"Health workers are misused without allowances" **Respondent_234**

"They never paid the casuals health work their salaries and all the covid allowances" **Respondent_229**

3.4. C. Current handling of COVID-19 at the country and county level

3.4.1. Resource availability

The availability of the vaccine and the controlled lifting of restrictions nationally was received well by many of the HCWs. This was also coupled with cascading of timely information and equipping the hospitals well enough to handle COVID-19 cases.

"They have equipped our hospitals and brought the vaccine" **Respondent_63**

"Daily reporting" **Respondent_73**

"Acquisition of the vaccine, imposing curfews which I thing can be tightened a little bit, making masks available to all Kenyans at an affordable cost." **Respondent_103**

"There is continued enforcement of containment measures and also presence of vaccine that may bring hope for eliminating the disease" **Respondent_111**

At the county level, the same sentiments were shared. However, aside from the vaccination, the HCWs lauded the better availability of resources such as drugs, a county-level isolation facility, and ICU beds.

"Conducting continuous education on covid 19 advising health facilities in kiambu about the vaccine and where to get it." **Respondent_103**

"Vaccination exercise, supply of Ppe and other commodities, set up isolation centres and bulk oxygen supply, continuous education for health care workers among other interventions." **Respondent_69**

3.4.2. Poor and decayed public adherence

At the national level, the general public was observed to be lax and the adherence to preventive measures was noted to have decayed. The rationale behind this, according to the HCWs, was partly due to the hypocrisy displayed by some of the politicians in the public arena.

"People are not strict on washing hands, wearing masks, sanitization, keeping social distance,and unnecessary gatherings and travel." **Respondent_17**

"There is alot of laxity. Nobody cares." **Respondent_43**

"They are giving bad example as leaders. Attracting doubts to public" **Respondent_47**

This laxity was further echoed at the county level where the HCWs noted similar observations.

"No strict rules since young people are still taking beer in hiding places since putting themselves into higher risks Some people do not wear masks so the rules are not followed. Authority is not serious also lack of facilities in health centers" **Respondent_340**

"People have relaxed on hand washing, putting on masks, sanitization, gatherings and social distancing, and unnecessary travels still on." **Respondent_17**

"Social places still 0pen business as usual" **Respondent_125**

3.4.3. System breakdown

Nationally, the HCWs were disappointed by a seemingly long-standing shortage of necessary equipment to carry out their duties while cases continued to rise. This was largely attributed to government corruption.

"Increasing number of infections, shortage of supplies" ***Respondent_7***

"Most Kenyan's are not tak[i]ng the issue seriously and all thank[s] to the gover[n]ment of kenya leaders who have set the wrong picture starting from Kemsa Corruption to BBI campaign[in]g amid covid pand[em]ic. This has disabled the power of health workers" **Respondent_40**

"Public gatherings still happen, leaders do not walk the talk, funding for covid 19 has been misappropriated and healthcare workers and government hospitals have borne the brunt of the pandemic without adequate support" **Respondent_25**

"Testing capacity is below par" **Respondent_92**

"A lot of corruption on covid money" **Respondent_194**

"Corruption and embezzlement of covid-19 funds, Poor healthcare system" **Respondent_260**

"The government officials bought fake PPEs and mismanaged the money allocated for covid" **Respondent_229**

Similar responses were given at the county level, however, an additional issue of timely payment of salaries to the HCWs was raised.

"Tigoni is hellfire" **Respondent_124**

"The response teams are not functional due to lack of resources" **Respondent_180**

"Because i have encountered someone who had the virus or contracted the virus but while were trying to source for an ambulance to be able to transport him/her there was none we ended up sourcing from our own which costed us a lot basing on the economy right now and the fact that we have ambulance or persons trained for that." **Respondent_241**

"… no health cover for health workers" **Respondent_93**

"The county is not paying the frontliners on time" **Respondent_229**

"… No timely salary payments" **Respondent_210**

"They don't pay the frontline workers" **Respondent_311**

4. Discussion

Several qualitative studies have been carried out to elicit the personal and daily life experiences of HCWs during the COVID-19 pandemic. Most of these reviews refer to psychological scale measurements to provide quantifiable information on HCWs' well-being and mental health (Bennett et al., 2020; Bhaumik et al., 2020; Gunawan et al., 2021; Haq et al., 2021; Zerbini et al., 2020). While this is useful in assessing the scale of the problem at a personal level, such quantitative measures are insufficient in capturing the breadth of HCWs' experiences and the policy factors that impact such experiences. Given the relative infancy of the devolved government in Kenya, it also begged the question if there was incongruency between the view of the national and county government actions in regard to COVID-19.

4.1. A mixed assessment

Some HCWs perceived the pandemic response to be swift and thorough because the measures were put in place quickly. There was sentiment that the strict and quick enforcement of interventions at the beginning were effective due to the timeliness. They also lauded the availability of vaccines as a big win for both governments which was seen to control the surge. This is in contrast to a study conducted in the United Kingdom (UK) where HCWs felt that government decisions on vaccine rollout had not been supported by evidence-based science, and this impacted their level of trust and confidence in the program (Manby et al., 2022). However, another half of participants felt that this response was decayed. Other HCWs relayed that the measures, particularly locking down borders and preventing passenger flights from landing in Kenya, was greatly lagged. This is similar to a Lebanese study where frontline nurses noted anger towards the government because of the seemingly futile nature of their work (Fawaz & Itani, 2021). However, in the latter Lebanese study, the nurses cited the government's inability to enforce a lot of the measures with one nurse being quoted to feel that "sometimes the decisions taken are stupid … just stupid … it makes you angry all the time as if you are working for nothing".

4.2. Local and national handling of the pandemic

We found that the HCWs who disagreed with the national and county governments' handling of the pandemic cited a lack of resources. This has been one of the prominent barriers by HCWs globally during the pandemic, particularly in developing countries (Chemali et al., 2022). Two studies reporting frontline HCW's experiences with PPEs in the UK found a similar lack of resources leading them to reuse and improvise PPEs (Damian et al., 2021; Hoernke et al., 2021). Similar sentiments were echoed by nurses in Belitung, Indonesia who reported a lack of N95 masks which prevented them from exercising their duties (Gunawan et al., 2021). Another lack of resources reported was focused on the lack of facilities including ICU beds, drugs, and proper isolation amenities. These are all necessary equipment and resources to properly dispense healthcare in times of a respiratory pathogen.

4.3. Dissatisfactory public compliance

Our study showed that HCWs were dissatisfied with public compliance to mitigation measures. Frontline Lebanese nurses also echoed this feeling by expressing frustration over the perceived lack of caution among individuals who were acting as if the pandemic was not a serious issue (Fawaz & Itani, 2021). A previous study from the Congo during the Ebola pandemic revealed similar social resistance (Claude et al., 2019). Regardless of the initial concern, after the pandemic aged on for a while, respondents' concerns decayed in tandem. This has been pinned on the increased laxity in compliance to the strict measures with the simultaneous relaxation of the initial strict policies.

4.4. Hope in a vial

The hopeful perspective of the availability and beginning of the vaccination drive was similar to a study from London (Manby et al., 2022). Thus, the view that vaccination offered a 'light at the end of the tunnel' was common between the two studies and even extended to Australia where it was viewed as beneficial (Kaufman et al., 2021).

4.5. Recommendations

Although the questions asked did not explicitly ask what could be done to remedy critiques, the HCWs were free to volunteer their thoughts. Some felt that if both the political figures and members of the public followed the government guidelines to curb the infection, the country and county would be in a better position. In addition, improving the overall capacity (human resources and equipment) of the health care system to deal with such a situation again was suggested along with adequate and timely remuneration, speficially at the county level, which has now been tasked with HCW renumeration in the new government structure. This recommendation is pertinent to numerous LMICs grappling with similar long-standing health system challenges which struggle to satisfy both the patient and healthcare workforce (Kruk et al., 2018). This also remains a significant barrier to the achievement of health-related Sustainable Development Goals both within and outside the context of a pandemic.

Therefore, we recommend the adequate and proper allocation of healthcare funding to handle emerging and re-emerging health crises. This can be done at the National and County level because both levels prepare budgets. Given the concerns about corruption and the subsequent plundering of public funds, this issue can be dealt with from two angles. First, HCWs should be involved in the structuring of both healthcare budgets and this process should be carried out transparently based on the healthcare needs of the population. Both county and national anticorruption organizations should play an enhanced role in this process to buttress this transparency. This will then serve to, secondly, restore public trust in the government bodies that handle public funds. This is important because HCWs serve as the clients of both governments and convention requires mutual trust and transparency in this employer-employee axis. Furthermore, we posit that renumeration for HCWs for their skilled professional services must be punctual at all times (pandemic or otherwise), and every effort possible should be put forward to realize this.

Further, efforts should be made to develop comprehensive public awareness campaigns in an effort to combat misinformation. This arose as a significant issue in this work. And this, we realize, is a significant problem in several LMICs (Roelen et al., 2020). Public awareness can be achieved by moderating the information spread on social media by collaborative efforts by the local county and national government structures. Furthermore, local guidelines should be frequently updated with comprehensive information to allow the public to fully comprehend the reasons behind changing narratives. Therefore, moving forward, we recommend a sustainable approach for recovery. This process can rely on open data sharing on COVID-19, building a new paradigm of trust in public policy such as anti-corruption adoption, and building transparent, clear, and concise communication systems.

By implementing these recommendations, future policies can address the concerns raised by HCWs, correct disparities in their responses, and ultimately improve the overall response to emerging and re-emerging health crises. Given that the county government effectively cascaded national health guidelines, the same should be implemented for vaccination and other health education drives in the future.

4.6. Limitations

Our study has limitations. It focused exclusively on healthcare workers in Kiambu county, omitting the perspectives of HCWs in the remaining 46 counties of Kenya during the COVID-19 pandemic. Additionally, our research considered responses solely from HCWs working in government facilities, excluding input from counterparts in private hospitals. However, our study offers substantial contextual evidence on a large scale. In addition, the mixed-methods approach is valuable for future planning at both national and county levels, not only within Kenya but also in other LMICs and similar settings. Importantly, our study protected participants' privacy by not collecting any unique identifying information, ensuring unbiased, unfiltered and unfettered responses from participants.

4.7. Conclusion

Although there were an-almost even range of opinions, both levels of government received consistent reviews from the HCWs. The majority of HCWs praised the government's response, praising its prompt and adequate efforts as well as their optimism over the pandemic's course. This study appraised the actions of the County government as the custodian of the county health workforce and the subordinate of the National government in Kenya. Kiambu county and Kenya as a whole had almost similar responses from HCWs.

However, there exists room for action and improvement. HCWs blamed both governments for their (in)actions on public indifference and misinformation, a lack of resources to carry out their duties, a slow initial response, and a systemic breakdown. Going forward, HCWs should be allowed and encouraged to participate in government processes such as healthcare budget allocation, ensuring timely remuneration and restoring trust in public institutions as part of the effort to prepare for future health crises and towards the achievement of a robust government healthcare system that serves both it's HCWs and it's public. Combatting misinformation is also an emerging problem in the 21st century and requires moderation of social media information, frequent comprehensive updates of local guidelines, and efforts to develop public understanding. By implementing these recommendations, policies can address HCWs' concerns, address response disparities, and improve overall handling of emerging and re-emerging health crises in LMICs.

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CRediT authorship contribution statement

Prabhjot Kaur Juttla: Validation, carried out data, Formal analysis, Data curation, preparation, creation and/or presentation of the published work, specifically writing the initial draft and critically reviewed the final draft. She also visualized the data. **Nicole Wamaitha:** took part in data, Formal analysis, and writing the initial draft (including substantive translation) and critically reviewed the final draft. **Ferdinand Milliano:** contributed via provision of study materials, Supervision, and, Project administration, and in writing the final draft. **Janefer Nyawira:** via provision of study materials, Supervision, and, Project administration, and in writing the final draft. **Samuel Mungai:** had a role in critically reviewing the draft and final manuscript. **Magoma Mwancha-Kwasa:** contributed in, Conceptualization, Methodology, Validation, Formal analysis, Investigation, Resources, Supervision, Project administration, data, Formal analysis, and revision of the final manuscript.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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