RESEARCH ARTICLE

Recruiting students for the COVID-19 emergency response: lessons from eight African countries [version 1; peer review: 1 approved, 1 not approved]

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Abstract

Background: This paper examines how African countries can innovatively use pre-qualified undergraduate and postgraduate students, as well as retired clinical, laboratory and epidemiological technocrats in dealing with medical emergency situations, such as the COVID-19 pandemic.

Methods: An online questionnaire was sent to key informants in six universities and two research institutions working with the Tackling Infections to Benefit Africa (TIBA) program eight African countries. The return rate was 88.9% and data was analysed using the framework method.

Results: Students and other personnel trained in the medical and health professions are a valuable resource that can be mobilised by African governments during medical emergency situations. These are found in research, academia, non-governmental organisations, and government. However, without clear plans and mechanisms for recruiting, supervising and remunerating or reimbursing the costs of engaging someone not employed by the government, the legitimisation and authority for such recruitment becomes a challenge. Currently, postgraduate students in the biomedical sciences are the most preferred because of their level of experience and exposure to medical techniques. They also have a degree certificate, which serves as a quality and competence assurance tool. Engagement of postgraduate medical students undergoing their residence programmes also seems a lot easier. While on the other hand, undergraduate students, who are the majority, are considered underexposed and with low technological capabilities. They also lack

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certificates needed to ensure competence, although we argue that not all tasks during pandemics require specialized skills.

Conclusion: As a step towards strengthening national disaster preparedness capacities, African governments need to develop plans that clarify protocols for engaging, training, supervising and protecting students, especially undergraduates and those taking non-biomedical courses. Such plans may form part of the National Pandemic Response Plan, while considering both specialised and non-specialized roles of emergency response.

Keywords

COVID-19, pandemic, Africa, medical students, local resources, emergency response, universities

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Collinson (2003) argues that political economy analysis focuses on economic and political process interactions in a society and explains the distribution of power and wealth between groups and individuals and the transformation over time. Governance viewed from three dimensions; “authority, decision-making and accountability-determining who has power, who makes decisions, how other players make their voices heard and how accountability is rendered” (Tait & Banda, 2016) is also a useful lens to understand legitimization and authority invested in institutions set up to manage the COVID-19 pandemic. The governance of the COVID-19 pandemic has been steeped in emergency acts and proclamations by governments across the world, and indeed governance through guidelines, standards and regulation has been critical for assessing the efficacy of diagnostics and therapies proposed for treating COVID-19. However, in this paper, we are interested in the marshalling of resources, their allocation and application using the eco-social framework for epidemiology (Johnson-Walker & Kaneene, 2018). Johnson-Walker & Kaneene (2018) present the epidemiologic triad of infectious diseases where the disease at the centre is driven by three core factors; the host, agent or pathogen, and the environment. The interaction of these three factors provide intervention programming. First, agent/pathogen-environment interaction can be resolved through removal of breeding ground and improvement of sanitation interventions. Second, the host-environment interaction can be controlled by interventions premised on education, changing activity (behaviour) patterns and quarantines. Third, the host-agent/pathogen interaction can be managed through protection, education and altering exposure patterns intervention strategies.

Consequently, pandemics and emerging infectious diseases, such as COVID-19, are not the exclusive terrain of microbiologists, virologists and practitioners in public health. But there are social institutions embedded in social organisations, and delivery is through other organisations and social processes involving social interactions amongst different actors/agents (Dingwall *et al.*, 2013). Pandemic responses depend on socio-cultural backgrounds, existing knowledge infrastructure, technological capabilities and human resources for managing the various stages of a pandemic. We borrow the eco-social framework for epidemiology from Johnson-Walker & Kaneene (2018:9), and we use the individual, social and structural factors. We are more interested in the social and structural factors as these are critical in pandemic or epidemic programming, and in the case of this paper COVID-19 pandemic preparedness resource allocation for surveillance, testing, contact tracing, clinical management and ensuring societal resilience to national lockdowns. Abramowitz *et al.* (2015) called for mobilization of experts who bring relevant locally contextualised medical, epidemiological, and political information on global health emergencies. Interventions effectiveness depend on provision of data collection, cleaning and analysis capabilities and this can be aided by mobilising academic institutional resources, sharing expertise and technical information (Abramowitz *et al.*, 2015).

Dingwall *et al.* (2013) discuss that disease is socially produced and requires organisational networks to implement pandemic response strategies. Policy design and implementation are key drivers and, as it is applied in a dynamic society, the public reacts to the interventions. The challenge for many African countries, as described earlier, is resource scarcity, especially skilled health practitioners for epidemiological surveillance and modelling work including wet lab activities. Well-endowed countries are able to leverage infrastructures and institutions that are already in place for pandemic responses. However so huge is the demand for resources for COVID-19 responses that, for example, Public Health England reached out to Universities for skills in molecular biology and diagnostics to aid in testing for COVID-19. This paper considers how African countries can cover the gap in specific epidemiological and other skills as well as resources. Steyer & Gilbert (2013) assert that co-production of solutions during epidemics depend on collaborations between public authorities and private interests. There are however tensions on legal and reputational issues that the private sector may struggle with, while the government cannot fully delegate all its responsibilities. However trade-offs are required to avoid weak co-production of pandemic solutions. This paper considers the successes and failure of using the private, quasi-public (universities) and public sector resources to manage COVID-19.

Methods

We used the case study approach (Yin, 2009) to study a real-life phenomenon within its context. The paper is based on eight African countries using key informants in research and academic institutions working with the Tackling Infections to Benefit Africa (TIBA) program (www.tiba-partnership.org); namely The University of Botswana, University of Ghana, Kenya Medical Research Institute (KEMRI), University of Rwanda, University of Khartoum (Sudan), National Institute of Medical Research (NIMR) Tanzania, Makerere University (Uganda), and University of Zimbabwe.

Data collection

Qualitative data was collected between February and March 2020 from six universities and two research institutions in Botswana, Ghana, Kenya, Rwanda, South Africa, Sudan, Tanzania, Uganda, and Zimbabwe (as above). A questionnaire was sent by email to TIBA program principle investigators (PIs) in each country with instructions that responses should be based on a team effort to capture as much information as possible. The return rate was 88.9% with only one non-response. The questionnaire was structured to elicit rich data whilst allowing flexibility as an explorative study to unearth new areas of interest. We were guided by Yin (2009) who argued that questions for case studies should include potentially important variables, however, they should avoid linking variables and theories as much as possible.

The questionnaire had nine questions covering three domains: (1) availability of students and other professionals that could be mobilised during the COVID-19 emergency, (2) roles,

arrangements and logistics for engaging these additional resources, and (3) plans and frameworks required to implement COVID-19 resource mobilisation and deployment. The questions included were: 'Does your institution train medical students or other health care workers?', 'Is there provision for your students to be mobilised during a public health emergency?', 'Are there plans for this to happen during the COVID-19 emergency?', 'How many students are/might be involved?', 'What role will the students play?', 'What arrangements are in place for continuing their studies after emergency?', 'How are the students paid or otherwise compensated for their time?', 'Do you have any other cadres of people that could assist during and emergency?', and 'Have you any advice to other institutions thinking of implementing a similar scheme?'. The questionnaire has been updated and shared with WHO-AFRO to gather more information including from other African countries.

Data analysis

We used the 'Framework Method' for analysis, as recommended by Gale *et al.* (2013). The Framework Method is appropriate for thematic analysis of textual data where it is important to be able to compare and contrast data by themes across many cases and retain the connection to other aspects of each individual's account (Gale *et al.*, 2013, p.2). According to Gale *et al.* (2013), the method originated in large-scale social policy research, but is now popular in medical and health research (p.117). We extracted themes from the responses and compiled a matrix with codes and cases, which we analysed and present in the next section.

The analysis involved three steps:

- First, we manually compiled responses for each question from each country into nine individual matrices (i.e. one for each question). The individual matrices enabled us to understand and compare responses per country;
- Second, we manually extracted themes from the nine matrices and compiled them into a separate matrix. This matrix highlighted key themes generated from the different answers provided by the different countries. We used this to create an 'Analytical framework', which is defined as "a set of codes organised into categories that have been jointly developed by researchers that can be used to manage and organise the data", Gale *et al.* (2013). The framework creates a new structure for the data (rather than the full original accounts given by participants) and summarizes/reduces the data in a way that supports answering the research questions (p.117);
- Finally, we interpreted the results and various themes that emerged, namely: sources of skills; experience categories for students; specialist vs non-specialist skill-sets; planning, training and management of resources; and integrating resources in the epidemic preparedness plans

All matrices generated during the three steps were shared for analysis with colleagues and sent back to the eight countries for verification and amendment to initial observations. Interpretations from the data are presented in the next section.

Ethical considerations

The study was part of Work Package 6 of the TIBA program⁴, which has prior consent from its Partner countries indicated in the partnership agreements. Therefore, based on the nature of the study, i.e. no clinical trials and no interviews with non-TIBA partners etc. were involved, there was no additional ethical approval process required for this study. All those we interviewed are part of the TIBA Partnership and have agreed to work with the program whenever required.

Results and discussion

Universities, retirees and private sectors as sources of skills

Our study indicates that undergraduate and postgraduate students, as well as personnel trained in the medical and health professions are a valuable resource that can be mobilised in medical emergency situations such as COVID-19. These resources were found in sectors that spanned research, academia, non-governmental organisations and government. An often-ignored source of skilled resources are retirees. However, given our emerging understanding of the age risk factor to COVID-19, it is important to carefully shield this cohort and clearly consider the roles they can safely play without endangering their health. Using Johnson-Walker & Kaneene's (2018) framework we argue that retired experts may be better placed in strategy formulating roles to deal with issues on dynamics of designing quarantine metrics, mentoring emerging technocrats and education. Their role, according to the Johnson-Walker and Kaneene framework, will be addressing the agent/pathogen-environment interaction and host-agent/pathogen interaction aspects of dealing with pandemics.

Our study revealed that, setting up recruitment, governance and management structures is important in order to ensure effective coordination of human resources mobilization activities during pandemics requires. Respondents reported that one of the greatest challenges was the absence of mechanisms for engaging, managing and remunerating, or reimbursing costs for resources not employed by government. This generates difficulties of legitimization and authority for recruiting staff. Our study raises the importance of the need for national disaster preparedness plans where they exist, to clearly define governance issues on who has the authority, decision making and resource allocation powers to recruit, manage, and where necessary, remunerate/reimburse mobilised skills. A second issue identified by respondents was the need to proactively consider how private and public actors could be integrated into public health programmes. Government departments have clear reporting lines. However, these transient public private partnerships need clear governance and management structures. Secondary sources (see Dacombe *et al.*, 2019; Nkengasong *et al.*, 2018; Olmsted *et al.*, 2010) revealed that standards, accreditation and certification are critical governance tools for laboratory equipment, diagnostics and reagents, especially for assuring the reliance, efficacy and dependability of results. In Zimbabwe, for

⁴ <http://tiba-partnership.org/projects/wp6-emergency-response>

example, COVID-19 tests were delayed because the National University of Science and Technology had equipment, however the laboratory did not have the required accreditation status (personal communication, March 22, 2020). Suggestions were made to move the laboratory equipment and staff to an accredited health institution to avert this anomaly.

Postgraduates preferred over undergraduate students

Students were identified as the largest source of skills by all surveyed countries. However, there was a preference for postgraduate over undergraduate students, and this depended on area of specialisation and levels of competence. Key specialisation categories that were identified were medicine, nursing, laboratory science and public health, with an evident bias towards biomedical sciences because the institutions surveyed work in the biomedical space. However as discussed previously, pandemics and medical emergencies are not the preserve of biomedical sciences. It is therefore important to recognise that since diseases occur in a social setting, students with social sciences, as well as mathematical and statistical skills, need to also be included amongst the mobilised skills.

Our study shows that there is a preference for postgraduate students in the biomedical sciences arena. This is an understandable choice given the level of experience and exposure to laboratory equipment and techniques. Overall, undergraduate students in most developing countries tend to be underexposed to complex laboratory equipment and technological capabilities, which needs to be addressed. We surmise that the under-exposure for undergraduates may be driven by resource limitations for practical and is more prevalent for early years of undergraduate compared to final year students. Respondents explained that approaches for engaging postgraduates were easier because countries leveraged their residence programmes especially for medical and wet lab-based students. It is harder to engage undergraduate students. Rwanda and Sudan mentioned the possibility of engaging them only as part of an ‘outreach program’, while Botswana reported that ‘they cannot be mobilized’. Respondents from other countries, such as Zimbabwe, Rwanda and Sudan implied that undergraduate students ‘should volunteer’ or ‘paid in kind’. They wrote: *[When students are involved in outreach activities, they are usually not paid...]* (Respondent, Rwanda); but also pointed out that there are currently no mechanisms for volunteering. Respondents wrote, *[“Difficult to answer but most students will do voluntary work”]* (Respondent, Zimbabwe); and *[“Financial compensation is provided to support their thesis research such as provision of support for field work and lab supplies. A few are financially supported by cash payment”]* (Respondent, Rwanda).

Specialist vs non-specialist skills sets

Respondents explained that postgraduates are preferred because they already have a degree certificate, which serves as a quality and competence assurance tool. As one Respondent wrote; *[“These [i.e. Post-graduate nursing students] are qualified registered nurses and midwives, regarding the role they would play would be determined by the emergency response team. The MMED [i.e. Master of medicine] are also qualified medical officers doing their specialization. Both nurses and doctors*

will be assuming their roles as per protocols”] (Respondent, Botswana).]

Specifically, postgraduate medical students are easier to recruit because they will be undergoing their residence programmes; *[“The residence group is made up of qualified medical doctors, the group will be available for case identification, preventive services, case management, sample collection, and offering public health preventive education to the public”]* (Respondent, Tanzania).] A key challenge identified was therefore the de-facto position of assuming that recruited individuals would be conversant with basic protocols and be able to make sound judgments during a crisis without much supervision. These are traditional expectations embedded in university structures and the labour market that individuals gain specific skills as they progress through defined academic pathways, which later, and upon successful accomplishment, defines what they can and should do. We argue that mixing these emerging skilled technocrats with retirees provides an opportunity for skills transfer and mentoring through learning by doing as espoused by innovation systems (ref – Lundvall, 2010).

Literature shows that during a public health emergency there are roles that require specialist skills such as surgical work, diagnosis e.g. using rapid tests Reverse Transcription Polymerase Chain Reaction (RT-PCR) or Immunology based diagnostics (Clarke, 2005; Draper *et al.*, 2010; General Medical Council (2008); MacDonald *et al.*, 2007; WHO, 2005). It was emphasised that these roles are better handled by postgraduates compared to undergraduate students who may be better placed for administrative, data gathering or analysis roles. Consequently, undergraduate biomedical students may be useful for non-lab work, such as contact tracing and surveillance, because they understand epidemiology and dealing with pathogens.

Evidence from the literature shows that undergraduate students have performed both technical and administrative duties in emergency situations, such as blood sample collection and issuing laboratory reports (Kshirsagar *et al.*, 2006), working in morgues (Lipkin, 2002) and translations to non-native language speaking emergency responders (Gorry, 2010). In Rwanda, final year medical students participated in airport screening during the COVID-19 outbreak. As Ladds (2010) argues, even without certification undergraduate students can be trusted to perform tasks that need little specialist knowledge, such as providing information, observing patients, clerk work, and even more complex clinical skills and duties tailored to their abilities that maximize their knowledge of the environment (Ladds, 2010). Yonge *et al.* (2010) explains that medical and health science students are a unique subgroup of the university population who have an invaluable skill set that prepares them to be providers of frontline care, and have been socialized as professionals which would result in the likelihood of their participation in the event of a pandemic. Yonge *et al.*'s argument highlights the socialization process that occurs in universities beyond teaching, which shapes students to adapt to different professional expectations in society.

Planning, training and management of resources

Training emerged as a key requirement for preparing individuals, especially students, for pandemic work because they are not conversant with such situations. The question of whether undergraduate students have the skills and mental readiness to work in an emergency situation, and how to impart those skills is widely discussed in the literature (see [Weiner, 2006](#); [Yonge et al., 2010](#)). According to Weiner, being a university student is not enough and they may be ill-prepared to fill front-line roles. Weiner advocates for their training in advance since educating them ‘at the scene’ is not nearly as effective ([Weiner, 2006](#)). In this study, the respondents recommended training in biosecurity and biosafety, as well as the importance of personal protective equipment for those likely to come into contact with patients or handling samples and equipment used in diagnostic tests. The training should provide the latest knowledge on COVID-19, using different platforms that observe social distancing rules. The offered knowledge should focus on aetiology, diagnosis, case suspicion and handling, isolation, sample collection, information transfer about the suspected cases, management and preventive measures at health facilities levels, and public preventive measures to the general public. Given the unprecedented occurrence, respondents impressed that a crash programme in training was unavoidable. Respondents wrote: [“... Biosecurity and biosafety training is needed” (Respondent, Sudan)]; and [“Just to emphasise training on use of complete PPE and very strict infection control measures, at personal level and at institutional level” (Respondent, Botswana)]; and [“The most important thing is to plan to offer correct knowledge about COVID-19 to students using different platforms which do not bring them to normal lecture halls. The offered knowledge should focus on aetiology, diagnosis, case suspicion and handling, isolation, sample collection, information transfer about the suspected, managements and preventive measures at health facilities levels and public preventive measures to the general public” (Respondent, Botswana)]. However, we argue that countries will always face one or another medical emergency, and it is therefore important to develop programmes for disaster preparedness that cater for continuous training for students and people identified as first responders in emergencies. Recruited students should also be properly screened to prevent them from infecting others and also be provided with insurance cover in case they get infected or face any other form of accident. Essentially, these findings highlight the need to develop a comprehensive understanding of the complex web of activities performed during pandemics, the wide range of skills and qualifications required, the need for training and coordination. We argue that although our study was specific to COVID-19 pandemic, the findings can be applied to other disasters that include public health emergency, fire outbreaks, environmental catastrophes and epidemics.

Conclusion

The challenge for many African countries is resource scarcity, especially skilled health practitioners for carrying out epidemiological surveillance and managing pandemics. This calls for innovative measures to mobilise experts who bring relevant and diverse locally contextualised information on global

health emergencies ([Abramowitz et al., 2015](#)). Findings from this study show that although African countries have significant numbers of undergraduate medical and allied health students, not many are already involved, or might be involved in responding to the COVID-19 emergency. The study also shows preference to recruiting postgraduate students who already have degree certificates and thus considered to have specialized knowledge than undergraduates. This means special mechanisms are needed if undergraduates are to be recruited during pandemics. Managing the logistics and meeting the costs of engaging such resources also need to be addressed by both the national governments and university administrations. Issues of training, protection and compensation of students and other non-government recruits were also raised by the study, which need strategic responses.

The observations surrounding national policies and governance issues discussed in this paper are likely consistent with many African countries where lack of purposive programming and planning affects the ability to integrate different skill resources available in these countries, especially those beyond biomedical staff employed by the government. The paper therefore advocates for policy makers to look at the broader context of pandemics and emerging infectious diseases, such as COVID-19 disease, and not as an exclusive terrain of microbiologists, virologists and practitioners in public health, but as social institutions embedded in social organisations, which deliver through other organisations and social processes that involve social interactions amongst different actors/agents ([Dingwall et al., 2013](#)). Looking at the broader context when planning for disaster and pandemic management could address some of the systemic challenges discussed in this paper, specifically, this could be in mobilizing, training, equipping and managing human resources currently outside the government payroll. This will also help in framing policy narratives and practice for managing pandemics and epidemics by involving both private and public institutions and all government sectors rather than making it an exclusive role of the ministries of health. The shift in thinking and planning required to achieve this is expected at two levels: the central government level where planning and high-level decisions are made; and at the level of institutions, such as universities, hospitals, boarder posts and laboratories, where students are managed and expected to work (see [Figure 1](#)).

This study highlights the importance of integrating social and structural factors in pandemic programming ([Johnson-Walker & Kaneene, 2018](#)) and building organisational networks ([Dingwall et al., 2013](#)) needed to mobilise resources to implement pandemic response strategies. It emphasizes the need to identify and engage locally available resources beyond the traditional pools, such as those of doctors, nurses and lab technicians, by identifying such resources and developing strategies and mechanisms to effectively engage, manage and supervise them. Engaging students and retired professionals in disaster and public health emergencies might pose some challenges to most African governments, but it is an important step towards strengthening their national disaster preparedness capacities.

NATIONAL DISASTER MANAGEMENT PLANS

The plans should integrate,

- The role of students,
- Partner responsibilities in integrating students,
- Logistics and budget.

MEDICAL PRACTICE GUIDELINES

These should address the following:

- Student's practice (what they can do)
- Students training requirements
- Student supervision
- Risk and safety procedures
- Legal matters

UNIVERSITY POLICIES

These should address and inform expectations of:

- Students (I.e. mental preparedness)
- Examination boards,
- Sponsors, and
- Parents and the public

Figure 1. A possible framework for engaging students in public health emergency response.

Data availability

Underlying data

Edinburgh DataShare: Recruiting students for COVID-19 emergency response: Lessons from eight African countries, <https://doi.org/10.7488/ds/2895> (Mkenda *et al.*, 2020).

This project contains the following underlying data:

- TIBA recruiting student for COVID response data 2020.docx.xlsx (spreadsheet containing country responses)
- TIBA COVID response and analysis notes.docx

Data are available under the terms of the [Creative Commons Attribution 4.0 International license \(CC-BY 4.0\)](#).

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Akshaya Srikanth Bhagavathula

Institute of Public Health, College of Medicine and Health Sciences, United Arab Emirates University, Abu Dhabi, United Arab Emirates

Thank you for providing the opportunity to review your work. I read the manuscript carefully and have some comments and suggestions that can improve the quality of the manuscript.

1. Please describe the study design: This is an opinion survey and the present title is not truly reflecting the nature of the research work.
2. Abstract - Background: describe the gaps/rationale of the study. Please do not start the background with personal statements or conclusive information.
3. Questionnaire containing how many questions? Please describe the content and composition of the questionnaire. Response rate should be mentioned in the results section.
4. Results: Detail how many approached and response rate. Detail the key findings. I presume this is a quantitative study, the results presented are descriptive. The first sentence in the results section looks like a conclusion. Kindly revise the manuscript accordingly.
5. Conclusion: Which nation? Which African countries (do not generalize the findings).
6. Overall, the abstract is weak.
7. Keywords: Please check the MeSH keywords.

Introduction:

1. Technological infrastructure challenges? (reference needed).
2. Split the second sentence into two. Very big sentence.

3. Please remove the WHO cases (these are changing over time).
4. References are not cited according to the Journal guidelines.
5. Stein *et al.* described that critically ill patients with COVID-19 will require oxygen in Africa. The citation is not really about the health system or infrastructure, but critically ill patients.
6. During February most of the countries did not have testing kits for COVID-19. This does not make any sense to readers.
7. Several sentences are misleading and not up to the point.
8. The authors should emphasize to provide background on:
 - Africa and healthcare (particularly the 8 countries of TIBA.
 - Students/others involvements in emergency response
 - How students/others involved or not involved in previous disasters.
 - The implications of involving them and what is known, unknown on this topic
 - Aim and objectives.

Overall the introduction is uncertain.

Methods:

1. Who are the key informants (what is their role)?
2. Data collection is not clear. Misleading. During the mid-February, the first case of COVID-19 was reported in Egypt, and later in Nigeria in March.
3. The current case study design and study period raise suspicion on the research. Did the authors conduct the research before the COVID-19 was declared a pandemic?
4. The authors are stating 88.9%. How many approached?
5. I was not convinced with the draft. The authors meshed the information and were not clear.
6. Confusing and redundant sentences.

I recommend the authors to spend more time to revise their work.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

No

Are sufficient details of methods and analysis provided to allow replication by others?

No

If applicable, is the statistical analysis and its interpretation appropriate?

No

Are all the source data underlying the results available to ensure full reproducibility?

No

Are the conclusions drawn adequately supported by the results?

No

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: COVID-19, epidemiology, research methods, systematic reviews, meta-analysis.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.

Author Response 11 May 2021

Vera Mkenda

Thank you for the review, and these are our comments as Authors.

1. Generally, we have noted that the reviewer read the paper with **epidemiology lens** and not as a **sociology paper**. The reviewer also made a **wrong assumption** in the comments that **'this is a quantitative study'** [he wrote, *"I presume this is a quantitative study, the results presented are descriptive"*]. But as it is clearly stated in the article, this was an **'exploratory study'** guided by Yin (2009)", thus a **qualitative study** using a **Case study approach**.

2. As a result of the wrong premise stated above, most of the comments are more around **'writing style'**, leaning towards making it an epidemiology paper. We therefore wish to keep it as a sociology paper. For example;

- Regarding the abstract - The reviewer argues that, *'the abstract should start by describing the rationale of the study, and not with a personal statement.'* However, the first statement in our abstract is not a personal statement. The statement explains what the study is all about. The statement in the article reads: **"This paper examines how African countries can innovatively use pre-qualified undergraduate and postgraduate students, as well as retired clinical, laboratory and epidemiological technocrats in dealing with medical emergency situations, such as the COVID-19 pandemic."** We are therefore of the opinion that this comment is more of a matter of personal style than of something that affects the quality of the message intended by the paper.

3. Several comments ask for information which is already in the article. Which suggests that the article was not read properly or not understood. For example:

- (A) [Q3-general:] The reviewer wrote *"The questionnaire containing how many*

questions? Please describe the content and composition of the questionnaire. Response rate should be mentioned in the results section." This is asked even where the information about the questions is provided in details under the data collection section. The article reads as follows: ***The questionnaire had nine questions covering three domains: (1) availability of students and other professionals that could be mobilised during the COVID-19 emergency, (2) roles, arrangements and logistics for engaging these additional resources, and (3) plans and frameworks required to implement COVID-19 resource mobilisation and deployment. The questions included were: 'Does your institution train medical students or other health care workers?', 'Is there provision for your students to be mobilised during a public health emergency?', 'Are there plans for this to happen during the COVID-19 emergency?', 'How many students are/might be involved?', 'What role will the students play?', 'What arrangements are in place for continuing their studies after emergency?', 'How are the students paid or otherwise compensated for their time?', 'Do you have any other cadres of people that could assist during and emergency?', and 'Have you any advice to other institutions thinking of implementing a similar scheme?'. The questionnaire has been updated and shared with WHO-AFRO to gather more information including from other African countries.***" The response rate has also been provided.

- (B) [Q4-General]: The Reviewer wrote "Detail how many approached and response rate". While the article reads "***Qualitative data was collected between February and March 2020 from six universities and two research institutions in Botswana, Ghana, Kenya, Rwanda, South Africa, Sudan, Tanzania, Uganda, and Zimbabwe (as above). A questionnaire was sent by email to TIBA program principle investigators (PIs) in each country with instructions that responses should be based on a team effort to capture as much information as possible. The return rate was 88.9% with only one non-response.***"
- (C) [Q5 - conclusion] he asks "Which nation, Which African countries?" Our paper mentions clearly that data was collected from ***Botswana, Ghana, Kenya, Rwanda, South Africa, Sudan, Tanzania, Uganda, and Zimbabwe***. And based on our conceptual framework, we are able to come up with a general conclusion that is applicable to other African countries and even to other developing counties.

3. Some of the comments are founded on personal doubts, mistrust or lack of information. For example:

- He wrote: "Data collection is not clear. Misleading. During the mid-February, the first case of COVID-19 was reported in Egypt, and later in Nigeria in March." and he went further to write..."The current case study design and study period raise suspicion on the research. Did the authors conduct the research before the COVID-19 was declared a pandemic?" The article explains clearly that the study was conducted between February and March 2020 which was after the Egypt and Nigeria cases, and also after WHO declared COVID-19 a public health emergency of international concern (i.e. a global pandemic) in January 2020. Moreover, most African countries started to act even before the first case was recorded in the continent. This study focused on mobilizing resources to implement WHO guidelines which came out in January 2020.

- He also Wrote: *"I was not convinced with the draft. The authors meshed the information and were not clear."* We argue to this to be more of a personal issue than with the quality of the paper.

Generally,

- The review was biased towards a qualitative study and the epidemiology writing style,
- We are convinced that our article was not effectively read during this review,
- The reviewer lack sufficient knowledge on reviewing sociology papers and also on the subject covered by the article.
- So we wish to dismiss all his comments and request that paper is fairly reviewed or approved based on the previous positive review.

Competing Interests: I am the author

Reviewer Report 30 November 2020

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Patricia A. Omidian

Focusing Initiatives International, New York, NY, USA

Thank you for the opportunity to read this article: Recruiting students for the COVID-19 emergency response: lessons from eight African countries, Mkenda, *et al.*. The authors report on the results of an online questionnaire that was sent to six universities and two research institutions in eight African countries involved in the TIBA program. Having worked in Liberia during the 2014-15 Ebola outbreak, I found the survey and results interesting. This research forms an important base for understanding preparedness planning for infectious diseases. This paper clearly highlights the biomedical/technical aspect of a pandemic, and the difficulties of using graduate and medical students to support clinical responses. The qualitative process gives insight into the issues and challenges the respondents face in dealing with COVID-19.

It is also important to note that the research questions were not designed to assess the very critical component of community outreach, education, primary health care and community care. Therefore, I hope this small study signals the start of a larger participatory research project that includes the sociocultural aspects of pandemic preparedness and response.

Health and wellness issues need to be met at multiple levels (WHO/IASC Guidelines). When one looks at Liberia during the Ebola outbreak of 2014-15, it is clear that even with the structural collapse of the secondary and tertiary health care systems, communities learned to respond in healthy ways and, in fact, turned infection and death rates around so that newly constructed health centers were never used. In emergencies we must not ignore the role of community based care and cultural responses in our drive to address the emergent biomedical crisis. A holistic

response is critical for the success in any disaster situation, whether it is disease (Ebola or Covid-19), natural disasters (from earthquakes to tsunamis) or populations fleeing wars. As we found with Ebola, a pandemic cannot be brought under control through medical interventions alone.

The situation for the countries of West Africa in the Ebola emergency proved the value of university students and their willingness to engage in socially meaningful actions. University courses can be part of this preparation, training students in participatory qualitative research (design to analysis), non-technical clinical work, uses of social media for community education, and etc.

As noted in the article, supervision and payment can be problems, yet, there are ways to support undergraduate and social science students who work in the field. With supervision by their faculty, they can conduct research, health education and basic contact tracing for university credit, and can even have their names on key publications in recognition of their participation. Sociology, anthropology and social work departments are a goldmine for building such training and ensuring a valuable and workable response to future crises.

National government health departments can collaborate with their universities to ensure the trainings identified by the authors, and to go even further. Train social science and humanities students in community-based rapid assessments, qualitative research and participatory research. Such work empowers communities and gives students opportunities to be a part of real, positive change in their societies.

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Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are all the source data underlying the results available to ensure full reproducibility?

No source data required

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: I have a PhD in medical anthropology with a specialty in community mental health. I have worked as a mental health lead for WHO in Liberia (2014-5).

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.