



Media influence on COVID-19 vaccine hesitancy and uptake in Africa

Policy Brief

Key messages

- Messaging about COVID-19 vaccine benefits and potential side effects during the pandemic must be integrated into and a high priority of every government and partner discussion to ensure clear and consistent communication that results in accurate information in the media.
- The accuracy of information disseminated in the media should be mandated and overseen by regulators empowered by legal instruments to ensure that people are not misled, which has the potential to put their health at risk;
- Access to media outlets must be expanded to reach hard-to-reach people and groups to ensure the broad distribution of information about COVID-19 vaccines. This will also advance SDG goal 11 on reducing inequalities, and
- African countries must seek to decrease fear of COVID-19 vaccines through for example community engagement programmes and local manufacturing.

Background

The novel COVID-19 pandemic is triggering unprecedented crises in human wellbeing and economies[1, 2]. It has also accelerated the development of vaccines that will prevent further spread of infection and will induce herd immunity in the long term[3]. While COVID-19 non-pharmaceutical control measures such as social distancing, washing hands regularly and wearing masks have proven potential to curb the spread of the disease[4], vaccination is the most effective public health intervention for communicable infectious disease and will result in long-term prevention and control. The urgent search for effective vaccines, and their acquisition and administration, has resulted in the development of a variety of vaccine types, each with different efficacy, development pathways and costs. Because of these complexities, the role of media in monitoring the perceptions and attitudes towards these vaccines is important [5]. Both the content of information about COVID-19 vaccines and the process of its dissemination influence their acceptance. Vaccine hesitancy -- delay in the uptake or outright refusal of vaccines, despite the availability of vaccination services [7] -- is a severe threat to global health, according to the World Health Organization (WHO) [6]. It presents a serious risk to those who refuse vaccination as well as to the wider community from potential viral strain mutation.

As elsewhere, vaccine hesitancy is a critical issue in Africa, and it is connected to media influence. Only about 1% of all 1.3 million Africans have been fully vaccinated against COVID-19. This is significantly lower than vaccination rates in high-income countries, such as the UK where more than 50% of the population has been vaccinated. Vaccine hesitancy can be driven by both genuine concern and by polluted media content, especially on the benefits and safety of vaccines.

The media plays a major role in providing real-time information on disease outbreaks and influencing the understanding, attitude and behaviour of the general population toward public health emergencies [8]. An important role of the media is to promote transparent conversation around public health, including pandemic outbreaks, transmission, impact and remedies. It is one of many factors that influences vaccine hesitancy and uptake.

Media helps to distribute information to both the general population and targeted groups[9]. For example, information about COVID-19 and its prevention is pitched to everyone, while some community stations target only a specific population. For example, promotion of plastic face shields to supplement masks may be relevant in urban areas where they are available, but not in a remote village where they generally are not. Beyond the intended reach of messaging, the channel of communication and message content are crucial factors in communicating intervention information. Various channels, that appeal differently to different audiences, include social media and traditional radio outlets. Similarly, some audiences respond well to aggressive messaging, while others are more responsive to soft approaches. Radios, flyers, TV programmes, community performance activities, posters, phone messages and public speakers are other interventions that can be tailored to various groups of audiences.

The high rate of transmission of COVID-19 has been driven by unpredictable symptoms and disease course, virus mutations, the variable effectiveness of different policy responses globally, and the “false sense of safety” that may be created by the rapid development of COVID-19. Potential contributors to vaccine hesitancy [10] in Africa as elsewhere include health beliefs and fears. If not addressed, hesitancy will leave the African population at high risk of infection by COVID-19 even if the rest of the world dampens the pandemic. This possibility, compounded by the fragility of most of Africa’s healthcare systems, makes the study of vaccine hesitancy critically important on the continent. This systematic review seeks to assess the influence of the media on COVID-19 vaccine uptake in Africa and to identify the most effective media platforms for various audiences for information on COVID-19 vaccination.

Methodology

The premise of this study was derived from a series of consultations among policy makers and researchers across the African continent. We also performed a comprehensive search for peer-reviewed studies published in English from December 2019 to 5 August, 2021 that explore media misinformation on COVID-19 vaccine and its primary outcomes. These are vaccine hesitancy, uptake, and a lack of accurate information on the COVID-19 vaccine. Randomized controlled studies, duplicate studies and reviews were excluded from this study. The literature search was performed on the following databases: PubMed, Cochrane COVID-19 Study Register and the LOVE platform. The resulting articles were pooled into Endnote software to avoid duplications and imported into the Rayyan platform (<http://rayyan.qcri.org>) an integrated web application for systematic reviews. The Rayyan software helped to further de-duplicate articles, and screened titles and abstracts: 753 research outputs were derived from 975. Further review of this content netted 83 studies; full manual (human) review of these resulted in 14 [11-27] that had policy relevance for narrative synthesis.

Global literature findings

The challenges of vaccine hesitancy and low uptake that was found in the African studies was also present in non-African countries [12, 13, 16]. This could be evidence that information tailored to different media outlets varies greatly in its accuracy and possesses the power to influence the vaccine acceptance of individuals. Given the digitization of information, it is likely that all regions of the globe, including Africa, are picking up information from each other. For example, in Bangladesh, Belsti and others (2021) [13] documented increased vaccine hesitancy orchestrated by media misinformation about vaccine safety. When better information was distributed in Ecuador and Malaysia, people were willing to take vaccines in

high numbers. Other researchers reported hesitancy in Russia and Colombia, particularly when the media widely covered rare but serious cases of thrombosis in some who received the Astra Zeneca vaccine[11]. Although vaccine hesitancy everywhere is a concern, Obregon et al (2021)[28] reported that in Eastern Europe and South Asia hesitancy is not as significantly widespread because of how media content was framed, increasing confidence in the vaccines. The subjection of a population to particular messaging over a period of time influences some behavioural patterns. As reported by Guntuku and others (2021), there is an association between the vaccine hesitancy of members of the African-American community with information shared on twitter within its community, relating vaccines to issues of trust and history[16]. This observation can inform message framing and socio-engineering in which patterns of messages can be targeted ethically to particular communities to create more effective messaging.

Africa-based literature findings: Influence of media on vaccine hesitancy in Africa

Media platforms used to access COVID-19 vaccine information in Africa

Television, radio, newspapers, magazines, medical journals, books, pamphlets and popular social media outlets such as twitter, Facebook, YouTube and WhatsApp [2, 13, 18, 25] were reported to have influenced COVID-19 vaccine hesitancy and uptake. In a study conducted in Zimbabwe and South Africa [17], 513 respondents indicated that their top sources of COVID-19 information were social media (88), television (67), radio (53), health workers (51) workmates, (39), newspapers (38), Ministry of Health outlets (31), and community leaders (8). In South-eastern Ethiopia [13], 33.7% used conventional mass media as their primary source of COVID-19 information, 31.8% used social media, and 1.7% and 32.9% used newspaper and other internet browsers, respectively. While conventional media outlets were controlled in their message output, social media was not [18]. Consequently, social media was found to be more prone to share unverified, false and inaccurate information[13] related to vaccines. This has led to confusion and panic in some people and eventually has contributed to vaccine hesitancy.

Media influence on vaccine uptake and hesitancy in Africa

The influence of media on vaccine hesitancy and uptake has also been reported in many African countries to varying degrees. In Sierra Leone, the availability of media outlets and the framing of COVID-19 vaccine messages helped to achieve 32.4% willingness of people to take the vaccine according to a survey of 2,146 people [24]. The content studied was framed to clearly show the benefits and potential side effects of the vaccine, which increased people's trust in it. Of course, even when the content of media is good and effective, it does not work when access to it is not available. This was noted in a study by Masele (2021) in Ethiopia where access to media correlated with higher COVID-19 vaccine acceptance [21]. It has also been documented that vaccine acceptance is strengthened by a sense of collective responsibility to end the pandemic and "return to normal" [17]. This would suggest that African states have an opportunity to continue to spread messaging through various means to reach the most remote areas possible.

Concerns about a lack of information and misinformation on COVID-19, its treatment and the vaccine have been reported in several African contexts [29]. Despite some positive reports on acceptance, other studies reported hesitancy that was influenced by the media. These showed

clear links to media access -- in particular to social media, with its lack of contextual control of messaging [18]. These studies also cited the framing of the content, which could frighten by emphasizing potential side effects, exaggerations and fake information as causes of vaccine hesitancy. These factors were further amplified by a lack of focus on correct information and the benefits of the vaccine as well as with an inadequate frequency in providing correct information [14, 21, 22].

The studies considered used surveys sent electronically or administered face-to-face or both. Healthcare providers in Nigeria reported hesitancy driven by intensive coverage of potential adverse events of COVID-19 vaccines [11, 23]. Obidile et al (2021) [36] reported that much of the negative information about COVID-19 vaccines was amplified by conspiracy theories on social media. Zewude and Habtegiorgis [27] reported only 46.1% COVID-19 vaccine acceptance among school teachers, university instructors and bank employees in Southern parts of Ethiopia; a population in Akaki Kality sub city in Addis Ababa by Dereje et al (2021)[22] reported that 51.8% of respondents had wrong or poor knowledge about COVID-19 and its vaccine, with 19.1% hesitancy. In this study, all those who registered hesitancy relied on social media as their source of information. Still another Ethiopian study found that women and the elderly were more willing to take the vaccine than other groups, and that those who were hesitant about COVID-19 vaccine depended on social media as their primary source of information[13]. Some of the reasons reported for hesitancy were: media-influenced doubts on safety (37% of respondents), effectiveness (20.7%) and lack of adequate information (12.7%)[27].

COVID-19 vaccine acceptance was reported to be 20.2% among health workers in Harare[17] and low acceptance was also reported in some selected populations in other parts of Zimbabwe and parts of South Africa[15]. This was mostly attributed to inaccurate information circulating on social media platforms. In Cameroon, Dinga et al (2021) [14, 19] reported 84.6% COVID-19 vaccine hesitancy from 2,512 respondents; this very low acceptance was similarly reported by Tawat (2021)[19] in a separate study, which was also largely attributed to uncontrolled false information on social media. In Tunisia, Zamit et al (2021) reported 51.9% hesitancy towards COVID-19 vaccine due to the proliferation of misinformation and fake news, especially on social media [26]. This study reported that 66.9% of respondents used social media as their primary source of information about COVID-19 and its vaccines. Kanyike et al (2021) [18] reported 37.3% COVID-19 vaccine acceptance among 600 Ugandan medical student respondents[18] with more male students accepting vaccines; the gender differential was mostly attributed to inaccurate information on social media. This study reported 90.6% of respondents using social media platforms to access information about COVID-19 and its vaccines. Another study [11] reported vaccine hesitancy influenced by the media in Burkina Faso, Sierra Leone, Rwanda and Mozambique.

Other factors that cause vaccine hesitancy include fear of potential side effects, reports of which are amplified by media outlets, particularly social media [13], where fake news and exaggerations form part of the narrative. Tawat [19] reported that information poverty was one of the reasons that vaccine hesitancy is rampant in Cameroon. This was attributed to low levels of digital literacy, limited access to the internet and some important media put behind paywalls.

At the beginning of the pandemic and at the roll out of vaccines, information was scarce for everyone, including scientists, due to the novelty of the disease and the challenges to even

responsible media to determine accurate information to disseminate. The media can have a powerful influence on life decisions[30, 31]. Studies suggest that while the media could frighten people, it also allowed them to make an informed decision on the vaccination. Social media users must take seriously their roles as a critical source of information to the public and avoid misleading the public, bearing in mind that messaging construct and framing heavily influence social behaviour [15].

Policy findings

- The world, including Africa, was caught off-guard by the pandemic. This includes media outlets and scientists, who were themselves not sure of the facts, fuelling misinformation sharing, mistrust and hesitancy. Considered policies on preparedness for future pandemics must be developed in partnership between public and private institutions as well as through international collaboration.
- The media generated frightening messages at the beginning of the pandemic [14]. There was no clear or consistent communications plan, exposing gaps in the expertise of the media as a source of information. Framing content is key to driving the agenda of any community [14].
- There is a compelling case to be made for policy that characterises COVID-19 vaccine as a generator of economic strength [25], whereby the productivity of the immunised is likely to exceed that of unvaccinated citizens. These cases can be made ethically, and incentivised.
- Social media is virtually uncensored, even when it is clearly wrong. This is hard to control because individuals have tools to access social media and rights to free expression[18]. Cyber law policy that protects the vulnerable from misinformation should be considered [15].
- There is lack of, or poor engagement between, stakeholders to ensure that accurate information about vaccines is circulated. Guidelines must encourage stakeholders to consult regularly to map the way forward, consistent with the geopolitical and socioeconomic considerations of their location.
- There must be an investment in the capacity to develop and distribute vaccines on the national level, mitigating dependence on foreign nations to supply them and thus reducing the fear and mistrust that can accompany the introduction of vaccines manufactured outside the continent [14].
- Access to information was found to correspond to vaccine uptake: priority must be placed on access to accurate information, even in hard-to-reach areas [20, 23, 25]

Ongoing activities on the African continent

Users engage more in anti-vaccine information than they do in pro-vaccine information [32]. To address COVID-19 vaccine apathy, African governments are seeking approaches to shaping social norms to encourage African populations to understand the importance of getting the COVID-19 vaccine. This will require reducing negative perceptions in various target groups through the media outlets most likely to reach them [2]. Potential strategies include development of policy frameworks that regard COVID-19 vaccine as a tool to strengthen the economy [25] — for example, by underscoring the advantage of immunised citizens in job productivity. African countries are also addressing COVID-19 vaccine risk misconceptions through the media outlets that are accessible to targeted communities with crafted, clear and easy-to-understand messages in local languages and dialects [20, 23, 25]. Local and cross-

country partnerships must be developed among stakeholders, including the media, scientists and policy makers, so that the flow of the right information is channelled correctly to the public. Governments must establish science policy engagement to inform future pandemic response plans. Media framing and construct must draw on the lessons of the COVID-19 pandemic to ensure information that is streamed in a correct and appealing manner with emotive language and illustrations[15].

The public can become confused or frightened by an onslaught of numbers channelled to them on a daily basis. Good intentions notwithstanding, communications must be re-shaped to convey public messages in context. In the long run, African countries must support their own scientists, independently or in collaboration with partners from the developed world, to create vaccines locally. For example, the East African block has the potential and resources to create vaccines according to Dinga et al (2021)[14], who forecast an increase in vaccine trust when African scientists are involved in its making. To combat the proliferation of fake news and misinformation in electronic media outlets, Dzinamarira et al [15] suggest that governments introduce and enforce regulations and policies that inhibit the sharing of false claims and information.

Policy recommendations

- Develop school curricula and empower industries to study and make vaccines, involving local scientists in current and future manufacturing[14];
- Create laws, policies and/or regulations to limit fake news and disinformation campaigns[15];
- Frame media content to avoid misinformation proliferation[15, 18], and
- Increase access to accurate information, especially in hard-to-reach areas[19].

COVID-19 vaccine hesitancy influenced by the media remains a challenge in most parts of Africa. The fact that studies have been conducted in only a few countries, and in small areas of these countries, deprive decision makers of important information to improve COVID-19 prevention. Comprehensive investigation into how social media can be used to convey accurate information and diminish misinformation is required urgently.

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