Rapid Evidence Review

[17th, March, 2022]

What can research evidence tell us about:

Strategies to mitigate COVID-19 vaccine hesitancy in Ethiopia

Key messages

Mitigation strategies for addressing COVID-19 hesitancy includes education provision and decision-making facilitation, Behavior Change Support (BCS), and system participation.

Where did this Rapid Evidence Review come from?

This document was prepared in to supplement the COVID-19 Vaccine HTA (https://www.cgdev.org/publication/understanding-cost-effectiveness-covid-19-vaccination-ethiopia). It was prepared by KnowledgeTranslation Directorate, Ethiopian Public Health Institute, Addis Ababa, Ethiopia

✚ Included:

- **Key findings**from research
- **Considerations about the relevance** of this research for policy decisions in Ethiopia.

✗ Not included:

- Recommendations
- Detailed descriptions

1. Introduction

1.1. Why was this rapid evidence synthesis conducted?

The Knowledge Translation Directorate (KTD) at the Ethiopian Public Health Institute (EPHI) in collaboration with iDSI has recently conducted COVID-19 vaccine Health Technology Assessment (https://www.cgdev.org/publication/understanding-cost-effectiveness-covid-19-vaccination-ethiopia) to provide alternative policy options on the type of vaccines and mechanisms of delivery in the Ethiopian context for reducing COVID-19 infectivity and disease severity. However, the HTA does not include the currently increasing trend of COVID-19 vaccine hesitancy in the country. To supplement the COVID-19 vaccine HTA, this rapid evidence synthesis was prepared to map the mitigation strategies to address vaccine hesitancy.

Background to COVID-19 vaccine hesitancy

COVID-19 has placed significant burden on the health systems around the world(Lynch & Pusey-Murray, 2020). In an effort to return to normality, it is vital to develop herd immunity against COVID-19 through vaccination rather than by infection, but it is estimated that up to 90% of the population would require vaccination to achieve this(OECD, 2021).As of April 14, 2022, however, 65% (globally) and only21% (Ethiopians) of the general population have received at least one dose(MoH/ EPHI, 2022).

The global effort to respond to COVID-19 pandemic through vaccinations has been challenged by concerns on vaccine hesitancy. Vaccine hesitancy refers to delay in acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place and vaccines types(MacDonald et al., 2015).

1.2. Factors for COVID-19 vaccine hesitancy

Multiple frameworks have been developed to classify the reasons affecting vaccine uptake. The Strategic Advisory Group of Experts (SAGE) Working Group (WG) on vaccine hesitancy has developed the 3Csmodel to classify the factors for hesitancy: **complacency** (i.e., not perceiving diseases as high risk and vaccination as necessary), **convenience** (i.e., practical barriers such as accessibility of vaccination services), and **confidence** (i.e., lack of trust in safety and effectiveness of vaccines)(MacDonald et al., 2015).In addition, Betschet.al, has developed a 5C model to classify the factors related to vaccine hesitancy and builds on the 3C model to include constructs of **calculation** (i.e.,

seeking out extensive information searching to inform vaccination decision-making can lead to non-vaccination due to the high availability of anti-vaccination sources, for instance, in the internet) and **collective responsibility** (i.e., lack of social responsibility to get vaccinated or no willingness to protect others by one's own vaccination as a means of herd immunity) (Betsch et al., 2018).

With the current increasing levels of COVID-19 vaccine hesitancy, we believe utilizing the 3C/5C framework can help to identify the complex factors that can influence an individual's choice to vaccinate and to navigate mitigating strategies towards COVID-19 vaccine hesitancy.

Low-and-Middle-Income countries in general and Sub-Saharan Africa (SSA) in particular, have been confronted by a dearth of comparable evidence on COVID-19 vaccine hesitancy. Few pocket studies conducted in Ethiopia have indicated vaccine hesitancy among the general population (Tesfaye et al., 2021; Wake, 2021), sub-populations including Healthcare Workers (HCWs) & university students (Aemro et al., 2021; Mohammed et al., 2021; Shiferie et al., 2021).

The few pocket studies conducted in Ethiopia have shown the reasons for hesitancy which are in line with the above 3C/5C model constructs indicating factors for vaccine hesitancy(Aemro et al., 2021; Mohammed et al., 2021; Mose et al., 2022; Tesfaye et al., 2021).

2. Approaches/methods used for this review

Rapid evidence review method, adapted from SURE guide for Rapid Response Services, was applied to search and summarize the best available evidence on the mitigation strategies of COVID-19 vaccines hesitancy.

Data sources

To answer the question under review we searched for high quality studies (Systematic Review) from the following international data bases: Health Systems Evidence, COVID-END, Epistemonikos, PDQ-Evidence, the Cochrane Library, JBI Evidence Synthesis and PubMed. The searching was made with no date or no language restriction. The following search term was used to identify the best available evidence on mitigation strategies of COVID-19 vaccines hesitancy.

Search term for PubMed: *((COVID-19 OR "COVID-19"[Mesh] OR "SARS-CoV-2"[Mesh]) AND ("Vaccine hesitancy" OR "Vaccination Hesitancy"[Mesh]))*

3. Review findings on mitigation strategies for COVID-19 Vaccine hesitancy

The mitigation strategies for COVID-19 vaccine hesitancy were framed around the 3C/5C models used to explain why people refrain from taking vaccinations. The mitigation strategies to address the framed causes of the hesitancy were thematized as follows: Education Provision and Decision-Making Facilitation, Behavior Change Support (BCS), and System Participation.

Education Provision and Decision-Making Facilitation

Evidence have shown that the provision of information and education to the public improves vaccine acceptance. Multi-component and dialogue-based interventions were found to be most effective. The use of social media and mass media as a platform can facilitate such dialogue based interventions(Jarrett et al., 2015; Lazarus et al., 2021).

The dissemination of scientific facts including data and knowledge can strengthen connectivity and build trust and government and health agencies can achieve this by working hand-in-hand (Dhama et al., 2021). High quality studies have shown that parent's attitude towards vaccine improved after receiving educational resources and information such as brochures, pamphlets and posters (Sadaf et al., 2013).

In another systematic review, reminder-recall interventions such as reminding people by telephone, and automatic calls, sending a letter or postcard or sending a text message likely increases the number of people who receive vaccination. In this review it was indicated that reminding people over the telephone is more effective than other types of reminders(Jarrett et al., 2015; Pich, 2019).Another study have shown health communicators hoping to encourage vaccination may be effective by appealing to the use of personal and collective health risks of not vaccinating(Motta et al., 2021).

To address vaccine hesitancy and improve vaccine uptake, public dialogue about vaccine concerns, mis-information and accountability from media, responsibility from citizens to report misinformation and remove harmful information were among the recommendations by the U.K national academy of sciences, the Royal Society(Mills et al., 2020).

Another similar guideline on the issue recommended the following. These include (Schoch-Spana et al., 2021):

- Value social science (generate research on social, behavioral, and communication science, and develop active partnerships);
- Inform public expectations about COVID-19 vaccination benefits, risks, and supply (e.g., temper expectations, provide transparency on vaccine-safety systems, and seek input from marginalized populations);
- Communicate in meaningful ways (e.g., centre public well-being, reject political tensions, conduct qualitative studies to understand local and community needs, attitudes and beliefs, and engage networks of trusted champions and spokespeople to deliver a unified message);
- Earn public trust and confidence in allocation and distribution (e.g., by developing strategies that take marginalized populations into consideration, and implementing guidelines that are consistent across providers and locations); and
- Make vaccination available in safe, familiar places (e.g., in schools, pharmacies, places of worship, workplaces, grocery stores, health departments, senior centers, home visits, prepare educational materials, train providers and other allied professionals, develop hesitancy campaign plans, and foster intersectoral partnerships with government, health departments and media); and
- Establish an independent body to instill public ownership (e.g., by establishing public committees to report on measures such as public understanding, access, and acceptance)

Behavior Change Support

Evidence for supporting behavior changes to encourage vaccine acceptance and reduce vaccine hesitancy are those grounded in frameworks from implementation-science. Accordingly, the use theory-based behavior changes interventions such as Health Belief Model, Theory of Planned Behavior, and Social Cognitive Theory (SCT) were found to have brought about change in behavior across vaccine acceptance spectrum. As per the finding of a systematic review, theory-based interventions generally were found to be more measurable and comparable and had more evidence to trigger the positive behavior change. It also emphasized that Interventions informed by behavior change theories and delivered via social media platforms offer an important opportunity for addressing vaccine hesitancy(Li et al., 2022).

System participation

Appropriate and timely dissemination of information related to protection provided by

vaccination could be effective in educating the public about the efficacy of COVID-19 vaccines both for self-protection and as a way of multisectoral approach that involves the deliberate collaboration between various stakeholders, such as government, private companies, religious groups, and other agencies to achieve a policy outcome(Dhama et al., 2021).

Governments and other stakeholders should provide appropriate and credible information to the public. To discharge this responsibility, the government and other stakeholders should look for whom to engage in the process. For instance, the engagement religious and traditional leaders in the process were impactful. In another systematic review and meta-analysis; regardless of role (educator, facilitator, administrator), the involvement of pharmacists in immunization process greatly increased vaccine coverage when compared to vaccine provision by traditional providers without pharmacist involvement (Isenor et al., 2016).

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What is Rapid Response?

Rapid Responses address the needs of policymakers and managers for research evidence that has been appraised and contextualised in a matter of hours or days, if it is going to be of value to them. The Responses address questions about arrangements for organising, financing and governing health systems, and strategies for implementing changes.

KTD: Knowledge Translation Directorate in EPHI is a drectorate that aims to translate knowledge from the research setting in to policy and practice.Since its establishment, this directorate has served as the focal unit for international networks and projects such as the Evidence-Informed Policy Network (EVIPNet), the Supporting the Uptake of Research Evidence in African Health Systems (SURE) project, and Partnership for Evidence and Equity in Responsive social systems (PEERSS) Project.

KTD collaborators:

iDSI Better decisions. Better health.

PEERSS Partnership for Evidence and Equity in Responsive Social Systems

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Conflict of interest

The authors declared no conflict of interest

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