

## Original Research Article

# Community perceptions and willingness to participate in COVID-19 vaccine trials: a qualitative study in Northern Ghana

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## ABSTRACT

**Background:** Several COVID-19 vaccines were developed and are being tested to find effective vaccine to control the COVID-19 pandemic. The Navrongo health research centre was engaged to conduct trials on the safety and efficacy of some of the COVID-19 vaccines to inform policy in Ghana. This study explored perceptions and willingness to participate in the COVID-19 vaccine trials that were conducted in the Kassena-Nankana districts of Northern Ghana.

**Methods:** This study used qualitative research approach where 10 focus group discussions and 30 in-depth interviews were conducted with participants. The data were coded into themes using QSR NVivo 12 software before thematic analysis.

**Results:** The majority of participants perceived that the COVID-19 vaccine trial was a good initiative, which had helped people to get access to the vaccines to boost their immunity against the virus. However, some participants felt that it was not appropriate for NHRC to conduct the trials because of the perceived risks associated with the vaccines. Most participants said they were ready to participate in the trials if they were invited with many of them mentioning good health and compensation as the main factors that could influence their decision. Nonetheless, a good number of them maintained that they were not ready to participate because of perceived risks resulting from receiving the COVID-19 vaccines.

**Conclusion:** Our recommendation is that effective community engagement strategies by researchers such as collaborating with key community leaders, to actively get involved during community education prior to conducting clinical trials, could improve understanding and participation.

**Keywords:** Perceptions, Willingness to participate, COVID-19 vaccine trials, Northern Ghana

## INTRODUCTION

Globally, there has been an increase in the frequency of infectious disease outbreaks in recent years with African region recording high number of these disease outbreaks annually.<sup>1,2</sup> Some of these infectious diseases spread

quickly within populations when they occur, resulting in wider outbreaks and deaths.<sup>3</sup> A typical example is the recent COVID-19 pandemic that started in China in December, 2019 and subsequently spread to other parts of the world, making the World Health Organisation (WHO) to declare it a pandemic.<sup>4,5</sup> The intimate effect

that this COVID-19 pandemic has had in the lives of citizens around the world has fostered an ever-increasing circulation of user-generated content questioning the motivations and quality of scientific knowledge around the virus and suggested strategies to control the pandemic. This complicated scenario promises to be the backdrop stage for COVID-19 vaccination efforts by all stakeholders including pharmaceutical companies in the world.<sup>6</sup> Public health authorities around the world face considerable challenges in finding effective ways to engage in a constructive dialogue about the concerns and anxieties that undermine confidence in a potential COVID-19 vaccine development to control the pandemic.<sup>7</sup> Further, there have been signs of escalating mistrust and fears that rapid development of vaccines could come at the cost of safety, aggravated by potential limited and short-lived effectiveness as well as the emergence of vaccine nationalism. These oftentimes generate heated public debates about the need for a COVID-19 vaccine when even the existence of the virus is perceived as uncertain.<sup>8</sup> As part of efforts to find effective COVID-19 vaccine to control the disease, several COVID-19 vaccines have been developed and tested in various countries in the world. The Navrongo Health Research Centre (NHRC) located in Northern Ghana, established in 1989 to conduct high quality demographic and health research to inform health policy was engaged to conduct trials on some of the COVID-19 vaccines. This was to help inform policy decision regarding the efficacy and safety of the vaccines prior to licensing for widespread public use. Therefore, this study explored community perceptions and willingness to participate in the COVID-19 vaccine trials in the Kassena-Nankana East Municipality and Kassena-Nankana West District of Northern Ghana.

## METHODS

### *Study design*

This was a cross-sectional study using qualitative research approach where focus group discussions and in-depth interviews were conducted with participants between May and June, 2022. This approach was employed because the study sought to gain deeper understanding on community views and concerns regarding the COVID-19 vaccine trial studies in the area and their willingness to participate. The study used phenomenology and narrative qualitative research approaches. Phenomenology approach to qualitative enquiry is used to study participants' feelings, experiences and views on a particular issue, in this case people who were recruited into COVID-19 vaccine trials in the area.<sup>9</sup> Narrative research approach on the other hand allows study participants to describe their perceptions regarding what they know regarding the issue under investigation.<sup>10</sup> These methods enabled the study team to solicit views from other community members and opinion leaders about the implementation of the COVID-19 vaccine trials in the area.

### *Study site*

The study was conducted in the Kassena-Nankana Districts of Northern Ghana. The two districts share borders with Burkina Faso in the north and covers a land area of about 1675 km<sup>2</sup>. The districts have a combined population approximately 200,000 form part of the coverage area of the Navrongo Health and Demographic Surveillance System (NHDSS). The districts have two distinct seasons, a wet season that runs from May to September and a long dry season from October to April. The main languages spoken in the area are Kasem and Nankani. The districts are predominantly rural with subsistence farming as the mainstay of the local economy.

### *Study population and sampling techniques*

The study population comprised male and female community members who were recruited into NHRC COVID-19 vaccine trials, community members who did not show interest in taking part in the vaccine trials and other community members as well as opinion leaders were interviewed in the study. Purposive sampling method was used to select study participants. Trained data collectors visited community members and opinion leaders at the community level and invited them into the study after the rationale of the study was explained to them. Those who agreed and signed/thumb printed consent form to participate were included.

Data collectors visited the COVID-19 vaccine trial clinics, identify and purposively select people who were recruited into the trials during their follow-up visits and invited them to participate in the study. However, snowball sampling technique was used to identify community members who did not show interest in taking part in the COVID-19 vaccine trials implemented by NHRC in the area. Using the snowball sampling approach, community members in the study area and people who were invited to take part in the FGDs were asked by the study team whether they knew people in the community who did not show interest in taking part in the COVID-19 vaccine trials.

The justification for selecting people who took part in the COVID-19 vaccine trials was to gather their views on the COVID-19 vaccines, the reasons for their participation and their experiences regarding possible side effects following vaccination. For those who did not show interest in taking part in the COVID-19 vaccine trials, we were interested in the reasons for their lack of interest to participate in the trials. Other community members and opinion leaders were included to share their views and concerns regarding the implementation of COVID-19 vaccine trials in the study area. All participants in addition shared their ideas on strategies to effectively engage community members in similar future vaccine trials to improve community trust, support and participation.

### **Data collection procedures**

Interview guides were developed and used to conduct the FGDs and IDIs with participants. Trained data collectors booked appointments with study participants before the interviews were conducted after informed consent was obtained. Study rationale, objectives and other ethics procedures stated in the protocol and consent form were adequately explained to all participants in their preferred language prior to their participation in the study. A total of 10 FGDs and 35 IDIs were conducted with participants. All interviews were recorded with consent of participants.

### **Data management and analysis techniques**

The recorded interviews were transcribed verbatim after repeatedly listening to them. Two independent people with experience in qualitative research were engaged to transcribe the audio recorded interviews. A codebook was developed containing the main and sub-themes to guide data coding and analysis. The transcripts were prepared and imported into QSR NVivo 12 software before data coding. The coding process involved a critical review of each transcript and coding of the data into emerging themes. Memos were created in the NVivo software and attached to themes during coding processes. This enabled the research team/coders to put down key findings from the data during the coding. Thematic content analysis was used to analyse the data and results presented as narrative and supported by relevant quotes from the data.

## **RESULTS**

The themes discussed included participants' perceptions of the COVID-19 vaccine trials, willingness to participate in COVID-19 vaccine trials, motivations to participate, reasons for not showing interest to participate and strategies to improve community participation in COVID-19 vaccine trials

### **Perceptions about the COVID-19 vaccine trials**

Views expressed in both the FGDs and IDIs by community members, opinion leaders and people who took part in the COVID-19 vaccine trials suggested that they were happy about the COVID-19 vaccine trials conducted in the area. The majority of the participants held that the COVID-19 vaccine trial was a good initiative, which had helped people to get access to the vaccines to boost their immune system against the disease. I think the conduct of COVID-19 vaccine trials will help people in the community to get access to the vaccines. (IDI-55yr old female trial participant, Doba). R5: I think the trial studies are very good interventions that can produce COVID-19 vaccine for us to vaccinate and protect ourselves against the disease. (FGD-Women 41 yrs plus, Kologo).

Few participants made references to similar studies that were conducted in the past by NHRC, which had helped to address health problems in the area. These individuals believed that the current COVID-19 vaccine trials exercise could also produce similar benefits to them as demonstrated in the following quote by a 42-year-old opinion leader during the interviews. I think it is very good for trials to be conducted in Navrongo because some years ago, NHRC conducted similar studies on malaria and other diseases, to improve health. So, I think these trials (referring to COVID-19 vaccines) will also benefit us. (IDI-42 yr old male opinion leader, Korania). A few community members who were recruited into the COVID-19 vaccine trials underscored the importance of personal benefits such as compensation they had received for taking the decision to participate in the trial as remarkable. As a participant in one of the FGDs put it: R10: As for research, their study is very good because I have participated in it and I have used the money I was given to buy goats and fowls. (FGD-Men 41 yrs plus, Nayagnia). Nonetheless, some participants had contrary views about the COVID-19 vaccine trials conducted in the area. These individuals held that it was not the best for the research centre to conduct the COVID-19 vaccine trials because of the perceived risks and side effects associated with the vaccines. Somebody asked me not to get vaccinated because the vaccine was perceived not to be good and that a woman took the vaccine and got serious side effects. (IDI-36yr old male trial refusal). Whereas, some participants perceived that the centre was hired to use the vaccine to inject and kill people in the area. Others raised concerns on what the centre would do if somebody took the vaccine and had problems. As a result, these individuals felt that it was not right for new vaccines to be tested on humans. I see it as a disturbance because when they give you the vaccine and later, you encounter a problem, what will you do? (IDI-35 yr old male trial refusal). R9: They said you (referring to the research centre) has been bought to vaccinate and kill people with the vaccines. (FGD-Women 41yrs plus, Kajelo)

### **Willingness to participate in COVID-19 vaccine trials**

Regarding community willingness to support and also take part in the COVID-19 vaccine trial studies, most community members and opinion leaders in the FGDs and IDIs said they were ready to participate in the trials if they were invited. Various reasons were advanced by participants with majority mentioning good health as the main factor that could influence their decision to take part. R2: I will say that it is good to participate in these studies because it will improve on your health. (FGD-Men 41 yrs plus, Nayagnia). R: I will like to participate because it will protect us from getting the disease. (FGD-Men 18 to 40 yrs, Kajelo). Contribution to science and health education were also reported as other factors that could motivate them to participate in the trials. R3: For me, I think contributing to science will be one of the key things because if we take it and it is accepted globally, it

will motivate them to manufacture more vaccines/drugs to save lives. (FDG-Women-18- 40 yrs, Koronia) R6: I will agree to participate because I will be able to learn something from it. (FGD-Women 18-40 yrs, Kakungu). Views shared by community members corroborated with opinions expressed by individuals who were recruited into the COVID-19 vaccine trials conducted in the area. According to them, protection against COVID-19 virus and other benefits associated with being the first to take part in human vaccine trial studies motivated them to take part in the trials. It is because the vaccine will protect me against the disease, motivated me to take part (IDI-57 yr old female trial participant, Paga). I was motivated because I felt if the vaccine is tried and there is any benefit, we will be part of it for taking part in the study. (IDI-35 yr old female trial participant, Chaina). Some of these individuals reported that it was the compensation or money that was given to participants motivated them to take part in the COVID-19 vaccine trials. The money motivated me because you will need to eat good food to replenish the blood sample that was taken. (IDI-35 yr old female trial participant, Chaina). Money was given as transport and that is why I joined the study. (IDI-57 yr old female Trial Participant, Paga). Whereas, some participants perceived that it was their personal interest and decision to take part in the trial, others reported that they were influenced by their friends to participate. The thing that motivated me to take part in this vaccine trial is that, I like to take part in trial studies. (IDI-24 yr old male trial participant, Mirigu). My friend influenced me to go for the COVID-19 vaccine trial because I am working with three people and all of them went for it and because of that, I also decided to go for the vaccine (IDI-40yr old female trial participant).

### ***Reasons for refusing or not showing interest to participate***

Though some participants reported that they were ready to participate in the COVID-19 vaccine trials, a good number of them said they were not ready to participate. These participants advanced various reasons such as perceived death resulting from receiving the vaccine coupled with the money that was given to participants as well as misconceptions that they had heard regarding the COVID-19 vaccines discouraged them and other community members from taking part in the trials. R4: I will not take part because I heard that people are dying as a result of receiving the vaccines. (FDG-Women-18-40 yrs, Koronia). R1: I think it is the rumors or misconceptions about the COVID-19 vaccines and the money given to people that brought fears that is why some people have refused to take part. (FGD-Women 41 yrs plus, Kologo). These views were confirmed by individuals who qualified but did not show interest in taking part in the COVID-19 vaccine trials when they were invited as demonstrated in the following excerpts. What I heard about the COVID-19 vaccines has influenced my decision not to take part in the trials. (IDI-40 yr old trial refusal). They said people receive the

COVID-19 vaccine and died. So, I will not like to die now and that is why I did not take part in the trials. (IDI-36 yr old female trial refusal, Mirigu). Perceived “no illness” was also reported as one factor that made some people not to take a decision to receive the COVID-19 vaccine. According to these participants, they did not understand why they should take a vaccine in the name of clinical trials meanwhile they were not having the condition. For me, my mind is that when I am sick, I go to the health center for treatment. I am not sick and why should I take vaccine? I will never go and take trial vaccine (IDI- 48yr old male trial refusal, Bui). Others believed that their God could protect them against the disease and so, they did not see the need to take vaccines. From my childhood up to date, God has been taking care of me and I have never fallen ill to go to hospital. So, I am not even bothered to receive vaccines (IDI-35yr old male trial refusal).

### ***Strategies to improve participation in clinical trials***

Study participants proposed various strategies to improve participation in clinical trials including the COVID-19 vaccines trials. Participants suggested that community members should be constantly educated to create awareness about these trial studies to improve community understanding and participation. Platforms such as community meetings, television and radio discussions were highly recommended by participants. R4: I will say that if it is possible, you should go into the communities every week and educate people and that will help spread the information fast. (FGD-Women 18-40 yrs, Kakungu). What I think we can do is education because if you are going to do something and you don't educate the people well, you will not get their support. The information could be discussed at the local radio stations for everybody to hear. (IDI-42 yr old male opinion leader, Koronia). Market squares or common community meeting areas and door to door education were also recommended as strategies that could be used to pass information to community members prior to implementation of these clinical trials such as the COVID-19 vaccines trials. This could improve community understanding and involvement according to views shared by participants. R7: We should do door-to-door education at the community level so that people will be encouraged or motivated to take part. (FGD-Women-18-40, Mirigu). R: What they could have done was to come to the market to announce and I think most people would have heard about the information. (IDI-44 yr old male opinion leader, Kologo). Some participants called for key stakeholders such as chiefs, community opinion leaders assembly members and youth group leaders to be used to disseminate information to their own community members. I think the chiefs and elders in the community should be well informed first. These stakeholders at the various community should be involved, as well as youth and women groups leaders because, they are good at propagating messages at the community level (IDI-35 yr old male opinion leader, Kajelo).



## DISCUSSION

The Navrongo Health Research Centre, since its establishment in 1989 has conducted many community-based research studies, including clinical trials in the two Kasena-Nankana districts of Northern Ghana. Following the outbreak of the COVID-19 pandemic in the world, health authorities and pharmaceutical companies have made efforts to find effective vaccines to control the disease. As a result, NHRC was engaged to contribute to this important initiative by conducting trials on some of the COVID-19 vaccines to help inform policy decision regarding their efficacy and safety. Thus, this study explored community perceptions and willingness to participate in the COVID-19 vaccine trials. Our study participants shared very interesting views and experiences touching on various reasons for their participation in COVID-19 vaccines trials. Community perceptions of research studies especially biomedical research remain critical, particularly in Africa.<sup>11</sup> Generally, community members in this study especially those who were recruited into COVID-19 vaccine trials saw the need for the conduct of clinical trials including the COVID-19 vaccine trials. Apart from helping in the advancement of science, the conduct of clinical trial according to views expressed by participants could help researchers to find effective medicines for the management of diseases especially in Africa where there has been an increase in the prevalence of infectious diseases in recent times such as the COVID-19 pandemic. Medicines are produced to be used by human beings and therefore, it is important for these medicines to be tested on people to ensure their safety and efficacy before they are made available for public use. Few participants in this study made references to similar studies conducted in the past by NHRC, which had helped to address health issues in the study area. Therefore, these individuals believed that the current COVID-19 vaccine trials could also produce similar results and benefits to them. These views expressed by participants suggest that conducting clinical trials and for that matter, the COVID-19 vaccine trials is necessary to ensure that these vaccines are safe and will not cause harm when people use them. These findings corroborate previous studies conducted in the area demonstrating that clinical trials are conducted to determine the efficacy and safety of new medicines.<sup>12,13</sup> Further, perception is a constructive process that allows individuals to make inferences on what they think about a particular phenomenon or event, in this case the conduct of clinical trials.<sup>14</sup> Perceived benefits people get from participation in research studies could be one of the reasons why participants in this study reported that the conduct of clinical trial is necessary. Across sub-Saharan Africa, evidence exists that the conduct of research studies especially biomedical studies has largely been perceived to have positive impact on the lives of individuals largely because of the benefits associated with such studies.<sup>15</sup> Indeed, it has been demonstrated that benefits such as free medical care, access to medical doctors, good health and allowances given to participants

in the form of compensation for their time could serve as relief to them within the period of the study.<sup>16</sup> Indeed, these factors have been reported by participants in the current study as motivations for their participation in the COVID-19 vaccine trials in the area.

Perceived individual benefits such as improved healthcare are particularly relevant in the context of Ghana where doctor-patient ratio is very high making it difficult to get their services especially medical professionals who have the expert knowledge to handle certain health conditions.<sup>17</sup> In this case, the conduct of clinical research could result in availability of medical doctors and other health staff to support community members especially study participants in terms of their health needs.<sup>18,19</sup> In this study for instance, some participants express their happiness to be part of the COVID-19 vaccine trial studies implemented in the area because of benefits such as free consultation and medication as well as health education they have received to improve health status. Particularly, some participants reported that the money given to them for taking part in the COVID-19 vaccine trials have helped them economically. The reason for this finding could be attributed to the fact that there is high level of poverty in low and middle-income countries resulting to lack of access to quality healthcare.<sup>20</sup> Therefore, people in these settings and for that matter, the study area may take a decision to participate in research studies largely because of these benefits including financial support available to them as reported in the current study as motivators to their participation in the COVID-19 vaccine trials in the area. It must however be noted that research including clinical trials studies are often conducted within a particular period of time. Thus, these benefits and monetary incentives may only be available to people or participants within the study period.

Despite the positive views expressed by many participants in our study about the conduct of the COVID-19 vaccine trials, some community members had contrary views about clinical trials conduct. For instance, some participants perceived that the conduct of clinical trials to test new medicines as precarious and that people could take some trial medicines/vaccines and develop health complications. Others held that the conduct of the COVID-19 vaccine trials in the area was not appropriate because of perceived risks associated with the vaccines. Specifically, some community members claimed that some people lost their lives resulting from receiving these vaccines. They felt that the huge compensation paid to people was not the best because that has made community members to have doubts on the effectiveness of the COVID-19 trial vaccines. These factors including perceived “no illness” and religious beliefs were reported to have a negative influence on some community members resulting to their decisions not to participate in the trials when they were invited. These assertions could be as a result of the clinical trial team’s inability to adequately engage community members prior to the

implementation of the trials as reported previously to have a negative effect on trust and participation in similar studies.<sup>21-23</sup>

Various misconceptions about COVID-19 vaccines were also reported to have a negative influence on people's decision to participate in the trials. Generally, perceived death and severe side effects resulting from receiving COVID-19 vaccines were reported by most participants. The believe that COVID-19 vaccines have been developed to kill Africans in order to reduce the population in the sub-region was also reported by participants. It has previously been reported that these misconceptions about vaccines led to mistrust and their uptake.<sup>24</sup> Indeed, our finding reveal that these misconceptions about COVID-19 vaccines have actually made some community members to refuse participation in COVID-19 vaccine trials in the study area. Therefore, appropriate steps must be taken by stakeholders within the health sector and research institutions as well as ethics review committees to deal with this important issue. Our participants recommended appropriate engagement of community members on the conduct of clinical trials as very important strategy that could improve community understanding of research procedures especially clinical trials conduct, which could also facilitate their support and involvement. They further noted that effective community engagement helps researchers to address misconceptions community members may have regarding research studies. Platforms such as community meetings, evidence-based discussions on community radio stations as well as door to door education strategies have been highly recommended to enhance knowledge of research design and also help find solutions to unexpected issues that may arise in the process of the research as demonstrated in previous studies.<sup>25,26,27</sup> This highlights the fact that continuous community engagement is needed from the planning and designing of studies through their conduct to the end. Where researchers fail to genuinely and appropriately engage communities at the initial stages of research studies especially clinical trials, it may lead to mistrust, and this may affect participation.<sup>28</sup> This suggests that effective engagement with key stakeholders such as chiefs, elders and other opinion leaders at the community level could facilitated their support in the conduct of research studies such as the COVID-19 vaccine trial as suggested by participants in the current study.

## CONCLUSION

Vaccines are viewed by our participants as very important public health measures to control public health disasters. However, several factors including perceived no illness and misconceptions about COVID-19 vaccines contribute greatly to some community members refusing to participate in the COVID-19 vaccine trials. This should be a worrying trend to stakeholders especially health authorities and clinical trial scientists. Therefore, our recommendation is that effective community

engagement strategies by researches in collaboration with key community leaders' playing active role during community engagement processes prior to implementation of research studies especially clinical trial conduct could help improve understanding and participation in these studies.

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