Original Article

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Factors Associated with COVID-19 Vaccine Hesitancy in Georgia

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Abstract:

Objective: The prevention of Coronavirus Disease-19 (COVID-19) is most effectively achieved through vaccination. However, the issue of vaccine hesitancy and distrust is a challenge that is experienced globally. The objective of this research is to investigate the distrust of the COVID-19 vaccine and the barriers that prevent individuals from deciding to be vaccinated.

Material and Methods: This study utilized a qualitative research design, specifically in-depth interviews, to obtain data from respondents that have not yet received any COVID-19 vaccine.

Results: Three main categories relating to vaccination difficulties were identified: lack of confidence, complacency, and disadvantage. The lack of confidence pertains to concerns regarding the effectiveness and safety of the vaccine. Complacency involves the perception that the virus is not harmful and does not pose a significant threat. Lastly, disadvantage encompasses the problem of the availability of immunization services, time, distance, and similar factors.

Conclusion: This research evaluated the effectiveness, safety, necessity, and availability of the COVID-19 vaccine under these categories. The findings of this study suggest that people's decision to vaccinate is influenced by their distrust of the vaccine's effectiveness and safety as well as their skepticism regarding the actual need for vaccination. These individuals are not entirely against vaccination and partially recognize its benefits. However, they are uncertain about the outcome of immunization and harbor doubts about the vaccine's safety; particularly since it was developed in a relatively short period of time. Additionally, the possibility of side effects and adverse health effects were also a significant cause for concern.

Keywords: COVID-19, vaccination, vaccine acceptance, vaccine hesitancy, vaccine effectiveness, vaccine safety

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Introduction

The novel coronavirus, Coronavirus Disease-19 (COVID-19), was qualified as a pandemic by the World Health Organization on March 11, 2020[1]. COVID-19, due to its fast spread and high infection rates, rapidly emerged as a significant global challenge[2]. Following the creation of the COVID-19 vaccine, it has become the main tool for preventing the spread of the virus. The vaccines were developed in a short time; however, currently, vaccination is regarded as one of the most effective means of preventing COVID-19.

High vaccination coverage is important in control and elimination of COVID-19 within a country. According to data from the National Center for Disease Control, as of May 2022, the number of vaccinations administered in Georgia has reached 2.9 million, with the number of fully vaccinated individuals having exceeded 1.25 million; which represents approximately 34% of the total population. However, these figures indicate that Georgia is trailing behind many countries in Western Europe in terms of vaccination rates. For instance, Germany has fully vaccinated 76% of its population, Italy 79%, Great Britain 73%, and the United States 66%[3]. To achieve community-based immunity over 70% of the population will need to be vaccinated[4]. According to the National Center for Disease Control of Georgia, the vaccination plan to create public immunity is designed for 60% of the adult population.

According to research conducted by the CRRC Georgia in December 2021, 42% of the population reported that they would not get vaccinated against COVID-19. The main reasons cited for this were a lack of confidence in the quality of the vaccine and concerns about their own health conditions. In addition, 15% of vaccine opponents stated that it is possible to deal with the pandemic without a vaccine. The same survey also asked respondents as to whether they would vaccinate their child against the coronavirus: 59% refused.

However, it is significant to note that 64% of the Georgian population reported having sufficient information about the vaccination process; according to the same survey. Although there was no significant difference in willingness to be vaccinated by age group, those aged 55 and older were more likely to be willing to be vaccinated compared to younger age groups.

In late 2020, the National Statistics Office of Georgia conducted a study on the impact of COVID-19 on the well-being of families and children, during a time when vaccination was not yet available in the country. When asked if they would get a vaccine, if it were recognized as safe and effective by the government, almost a third of respondents (29.5%) reported being undecided, while slightly more people (31.4%) said that they almost certainly would not get vaccinated[5]. These findings clearly indicate a significant level of distrust toward the vaccines, which was still high even before it had arrived in the country. This would suggest that concerns regarding its safety and effectiveness were based on opinions rather than evidence.

In December 2021, GEOSTAT conducted a study as to vaccination attitudes among those who had not yet been vaccinated and found the following: 34.5% of respondents remained undecided about vaccination, 14.1% thought it was unlikely, and 18.5% had completely ruled out the possibility of being immunized. Overall, the proportion of respondents with undecided or negative attitudes toward vaccination was 67.1%, indicating a persistently high level of vaccine hesitancy.

Vaccine hesitancy is recognized as a threat to public health by the World Health Organization[6]. This phenomenon is quite complex and determined by various factors, such as the risk and severity of the disease, emotional state, incomplete awareness; and social context, among others. In the case of the COVID-19 vaccines, distrust can be attributed to several unique factors. For instance, the use of relatively new technologies in the vaccine development

process and its production in an unprecedentedly short time have raised doubts in people. Despite the strong scientific evidence supporting the effectiveness and safety of vaccines against the virus, a large proportion of people remain hesitant and unwilling to be immunized[7].

In addition, the constantly evolving information surrounding COVID-19 affects people's perceptions of the disease[8]. The multitude of information regarding its symptoms, severity, and health effects creates confusion and uncertainty about the efficacy of vaccines. Furthermore, personal experiences and practices of acquaintances or relatives can also influence an individual's attitude towards vaccination. It is worth noting that attitudes towards immunization have changed over time. As the vaccine development process came to a close and more information became available, misinformation has also emerged, causing a decrease in public confidence. Thus, vaccine hesitancy is a multifactorial problem that requires a comprehensive approach to address[9].

Through a literature review, it has been found that vaccine hesitancy can arise from various social, cultural and psychological reasons. There are three main categories that encompass the reasons for vaccine hesitancy: lack of confidence (doubts about safety and effectiveness, mistrust of health professionals and the health sector itself); complacency (perceived low risk of infection and its consequences), and inconvenience (availability of immunization services, location and time problems)[10].

According to various researches, the factors contributing to vaccine hesitancy are primarily lack of confidence and complacency. Even when vaccines are readily available, a significant portion of the population may exhibit reluctance to participate in the immunization process. This hesitancy is often exacerbated by mistrust, which can stem from information disseminated by various media outlets[11].

In Georgia, anti-vaccination sentiment is prevalent, and the number of individuals willing to receive vaccinations remains low. This presents a risk that the pandemic will continue to affect the population, and contribute to further viral spread. Expired vaccines are a prominent example of vaccine hesitancy. In April 2022, the use of "Pfizer" vaccines was halted due to their expiration, causing a delay in the vaccination process until new doses arrived. To combat such occurrences and facilitate effective vaccination efforts, it is necessary to utilize available resources to the fullest extent possible, while also working to shift societal attitudes towards immunization.

The aim of this research was to examine the barriers that prevent vaccination decisions that contribute to hesitancy towards the COVID-19 vaccine.

As already mentioned, three main categories are distinguished in the literature, which are considered to be the source of mistrust of the vaccination. In accordance with these categories, this study established the following research objectives: to assess how respondents perceive the effectiveness of the COVID-19 vaccine; to evaluate how respondents perceive the safety of the COVID-19 vaccine; to examine how respondents perceive the necessity of receiving the vaccine, and to evaluate how respondents perceive the availability of the vaccine.

Material and Methods

The research employed a qualitative methodology, specifically in-depth interviews. This approach enabled the researchers to identify the primary factors that influence trust in the vaccine, and to thoroughly examine the reasons underlying vaccination barriers. To guide the research process, a semi-structured interview guide was utilized that allowed respondents the freedom to express their opinions, while ensuring that all relevant topics were covered.

A non-probability sampling method and its most convenient type, snowball sampling, was used for the

respondent selection. Using snowball sampling, starting from personal contacts, some research participants were identified who, in turn, recruited more subjects from among their acquaintances. Specifically, participants were asked to provide their opinions on several questions about vaccination hesitancy. The inclusion criteria for this study were Georgians above 18 years of age, having not yet been vaccinated for COVID-19. In total, the convenience sample was composed of 26 participants, who volunteered to participate in the research after providing informed consent and ensuring the anonymity and confidentiality of their responses. The youngest respondent was 23 years old, while the oldest was 56 years old.

The survey was prepared in a Google form, and the questionnaire was distributed using personal contacts via emails, through web-based applications and social media; such as Facebook, Instagram, LinkedIn, Telegram, Twitter (now X), and WhatsApp.

The questionnaire had 4 items regarding factors associated with COVID-19 vaccine hesitancy: evaluation of vaccine effectiveness, vaccine safety evaluation, evaluation of the real need for the vaccine, and evaluation of vaccine availability. Each interview lasted between 30-40 minutes on average. Qualitative research software Nvivo-12 was used to analyze the interview transcripts. This present study protocol was reviewed and approved by the Caucasus University (Approval No. 2022-09/12).

Limitations

There are multiple limitations to consider regarding this work. Like any qualitative study one of the first limitations is that qualitative methods and approach cannot extrapolate and generalize the findings to the population. Given the qualitative nature of this study's exploration into vaccine hesitancy, its analysis does not comprehensively cover the underlying reasons for COVID-19 vaccine hesitancy within Georgia. As the study was not conducted longitudinally, it lacks information on how public attitudes towards the vaccine may have shifted over time, as to the responses to changes in infection rates, or the implementation of various restrictions aimed at controlling the spread of the disease. Furthermore, the interviews were conducted online; therefore, limiting the ability to see participant's body language, for use in the complexity of face-to-face interviews in full.

Results

Evaluation of vaccine effectiveness

Almost all participants in the study expressed skepticism regarding the effectiveness of the COVID-19 vaccine. According to several respondents, the vaccine frequently fails to achieve its primary objective: protecting individuals from contracting the disease. Respondents cited instances where acquaintances or individuals in their communities became infected with the virus despite receiving the vaccine. Such occurrences serve as a basis for doubt and contribute to hesitancy regarding the vaccine's efficacy.

"*I know people who were vaccinated, but still encountered corona and suffered quite hard. They had fevers, weakness and various symptoms. In short, they had a hard time fighting the disease. I was not vaccinated and I just had a fever for two or three days. I haven't lost my taste, nor my sense of smell*". (Male, 24)

"*It is clear that vaccination does not necessarily mean that you will not get Covid, but if it does happen to you, it should help you and it should not be difficult for you, but that is a lie because no one can give you a guarantee*". (Female, 56)

"*My parents had two doses and then they got this (Covid) and they got it in severe forms. That is why I have some mistrust towards the vaccine. What is the point of*

doing it? I can't understand the purpose, otherwise I would do it, without any hesitation". (Female, 28)

The respondents also placed great emphasis on the vaccine's inability to effectively combat different virus strains. Since the onset of the pandemic, various new strains of the virus have emerged; each distinct from the previous one. The original COVID-19 strain is now almost extinct, having been succeeded by new variants that differ from each other in terms of symptoms, duration of illness, and other characteristics. Notable examples of these variants are the "Delta" and "Omicron" strains, which are among the most prevalent forms of the virus. Additionally, respondents indicated that they often hear information suggesting that different vaccines exhibit varying degrees of effectiveness against different strains. This creates confusion and increases the hesitancy of those who are already uncertain about getting vaccinated. If there is no single vaccine that can protect against all strains, it becomes unclear whether vaccination is ultimately worthwhile.

"*After the appearance of different strains, they said that this particular vaccine is not effective against that particular strain. So what is the point of vaccination then*?". (Male, 27)

"*The virus has undergone so many mutations and changes that some new variants are going to appear, which will have different characteristic, and no one knows what complications it will cause, the current vaccines may turn out to be completely ineffective and have no results*". (Female, 56)

"*Actually, at first there was a feeling that; for example, a vaccinated person would not get the virus at all. Then they came down to eighty percent, then during the last strain they said that there is no common sense in immunization anymore, it doesn't protect anymore. In such and so, such mixed views were formed*". (Female, 43)

One of the respondents also expressed concerns about the timeline in which the vaccine was developed, and believes that a vaccine created in a relatively short period of time cannot be considered reliable. This concern mainly relates to the issue of limited experience over time in assessing the safety and efficacy of the vaccine.

"*We need to do a lot of research on the vaccine, and that research should take a long time. Right now, we don't really know how well the vaccine will work if it was created in just a year or two. This raises some concerns about the quality of the vaccines we are currently getting*". (Female, 28)

Moreover, some of the participants in the study asserted that the efficacy of the vaccine should be measured by its ability to prevent virus transmission after vaccination, minimize the risk of infection, and reduce the severity of the disease if contracted. They assert that they have personally seen that none of these standards were fulfilled, and that individuals they knew having been vaccinated still commonly experienced virus transmission and infection.

"*If there is such a vaccine that you get and it is not transmitted to others, I will personally give it a try. To protect others. But the point is that it (vaccine) is not so good that I can protect another by my action (vaccination). In other words, if it was more effective, I would probably do it, by effective I mean that it would not be transferred to someone else*". (Female, 35)

"*If I don't have a guarantee that I won't get COVID and it will pass normally, then why do I need a vaccination?!... To tell the truth, at first I thought that the vaccinated people were really more protected, but then and then they got it (virus) as well*". (Male, 51)

The efficacy assessment section of the study indicates a skeptical attitude among participants toward the productivity of COVID-19 vaccines. They question its actual benefits and state that they would only get vaccinated if they are persuaded of the effectiveness of immunization. However, it is worth noting that most respondents reported having received vaccinations for various seasonal viral

diseases, such as the flu as well as immunizations for measles and mumps. Despite this, they still approached COVID-19 vaccination with skepticism, citing a lack of information and inexperience of the vaccine as the primary reasons for their reluctance.

Vaccine safety evaluation

In general, the widespread non-acceptance of the vaccine against the coronavirus can be attributed to concerns about its safety. Studies conducted across different countries have revealed that individuals refrain from getting inoculated due to uncertainty regarding the impact of the vaccine on their body and its overall safety. This study's interviews concerning this topic indicated that respondents primarily expressed fear of potential health risks associated with the vaccine. They were apprehensive that instead of protecting their body, vaccination may lead to adverse health consequences. Some participants in the study reported that they knew individuals in their close social circles that had experienced health problems after being vaccinated. Despite active campaigns to promote immunization and assurances from medical professionals regarding vaccine safety, people still harbor distrust towards the prophylactic.

It is important to note that the non-acceptance of immunization against the coronavirus is not absolute in nature. Some respondents indicated that they would be willing to receive the shot if certain conditions were met. One such condition is the requirement for a preliminary medical examination. They believe that it is not appropriate to vaccinate individuals without considering their health status and feel more assured if they undergo a medical examination before receiving the vaccine.

"*Before I get the shot, I think it's important to check some things like my lungs, blood, and heart to get a general picture of my health. If they did some kind of examination beforehand, I would feel more comfortable getting the shot.*" (Female, 28)

When queried about the potential dangers of receiving the vaccine, respondents cited various reasons; with the most commonly expressed concern pertaining to side effects. Given that the vaccine may impact individuals differently, the principal apprehension centers on how their body will react to the injection.

"*I'm not sure how the vaccine that hasn't been tested will impact me. Some people may not feel any side effects at all, even though it's normal to experience them. But not everyone reacts the same way. For me, I have allergies to many things, and I can't take the risk of injecting my body with the vaccine and potentially harming it*". (Female, 56)

A number of respondents recounted the case of a 28-year-old nurse from Akhaltsikhe, Georgia, who suffered an anaphylactic shock and lapsed into a coma within half an hour of receiving the COVID-19 vaccine; tragically, she passed away the following day. This incident occurred during the early stages of the vaccination campaign in Georgia when medical personnel, as part of the high-risk group for contracting the virus, were prioritized for immunization. The occurrence had a profound impact on the Georgian population's perception of vaccine safety and worsened existing suspicions and distrust. However, it's crucial to emphasize that these are rare events.

"*You may know, one of the first, if not the first, nurse to be vaccinated died after the injection... that also had an effect on the population, so to speak, in terms of creating a mood. The initial failure of the vaccine created a sense of fear*". (Male, 27)

In summary, it can be deduced that one of the most significant impediments to making a decision to receive a vaccine is concern surrounding safety; both in the short and long term. In addition to apprehensions about side effects, individuals are uncertain about the potential consequences of immunization in the years to come. Some respondents cited their own health status as a reason and

expressed their worry that vaccination may pose a risk for them. Certain individuals with a history of allergies were particularly hesitant to receive the vaccine; particularly given that they had heard about cases of post-vaccination health complications in others.

Evaluation of the real need for the vaccine

In the objectives assigned, the third block applies to the component of complacency. Complacency refers to erroneous perceptions regarding the necessity of the vaccine. As previously mentioned, some individuals contend that no medical intervention is required to combat the disease asit is a mild virus that will resolve itself. When such notions dominate, there is a risk of underestimating the actual threat and hazards of the pandemic. Due to such attitudes in the initial stage of the vaccination program many individuals declined to be vaccinated, resulting in high rates of infection in the country. Additionally, during the early outbreak of the virus, individuals did not perceive themselves at risk of the disease. The assumption that they would not get the virus resulted a severe epidemiological situation. These particularities contribute to complacency. To prevent such an outcome experts assert that it is essential to acknowledge that the risk of contracting COVID-19 is high, and that it has a negative impact on our health, to those around us and on our daily life.

During the interviews, in regards to this topic, two different viewpoints emerged. Some respondents expressed that the disease is genuinely hazardous and they have experienced its effects themselves and to their family members. Conversely, the second group of research participants views this issue more casually, believing that vaccination is not necessarily required. The latter group maintains that individuals can handle the pandemic through natural immunity, rendering additional, external interventions unnecessary. In the subsequent discussion, the viewpoints of respondents is examined from both perspectives. One of the participant expressed her opinion on the development of natural immunity.

"*According to official statistics, a lot of people, half a million, have already had Covid, there are three million of us in total... A large number have already been infected with Covid, and probably that is why the infection rate is no longer high, not because immunization did it. Of course, the vaccination had an effect, but not quite as much*". (Female, 56)

In relation to the severity of the virus and its potential danger, multiple respondents have expressed that they do not consider COVID-19 to be notably perilous. Additionally, these respondents cite historical instances in which more challenging diseases have been encountered, and ultimately overcome; implying confidence in the ability to manage the current pandemic.

"*In my opinion, the coronavirus should not be considered a serious disease, but it is a fact that it affects older people more and those who have a weak health. Therefore, you cannot directly say that it is not dangerous, but I still think that it is easy in young people and I would consider it a common type of virus*". (Male, 28)

"*Covid is a really serious virus that we can't ignore. It's a fact that it's very dangerous and we need to take it seriously. After I caught it, I started taking better care of my health so I don't catch it again*". (Male, 27)

The preceding quotes belong to respondents that perceive the danger of the virus to be relatively insignificant. However, the second segment of responses underscores the importance of not dismissing the actual threat posed by the disease, which has already impacted a considerable number of individuals, and severely compromised public health. Failing to acknowledge the severity of the virus could lead to continued negative ramifications on daily life.

This subset of respondents approaches the virus with a sense of gravity, with some emphasizing the necessity of vaccination. This aligns with the theme of preparedness

for immunization, which was previously highlighted. Unvaccinated individuals are not explicitly opposed to getting vaccinated; rather, some respondents express the need for vaccination, but fail to see the benefits that accrue from using the available vaccines. This issue, in the context of vaccine efficacy and safety, has been examined and it should be noted that individuals who prioritize protecting themselves and others tend to view the disease realistically; even if they do not consider vaccines to be the right way for achieving that goal.

In general, the construct of complacency is a highly dynamic phenomenon, which is influenced not only by personal and social characteristics, but also by various external factors. Moreover, it is subject to change over time. For instance, the level of complacency may increase in response to a reduction in the number of infections or in parallel with the softening of restrictions implemented during a pandemic. When the number of confirmed cases is high, the risk of contracting the disease is also elevated. This may trigger more concern and encourage individuals to seek vaccination. Conversely, when the infection rate is low, the perception of real danger diminishes. This is when individuals may develop a belief that the virus has disappeared, leading to a lack of concern.

Evaluation of vaccine availability

In the previous discussion, three potential barriers to immunization were explored. Another noteworthy factor that may impede immunization uptake is the availability of vaccination services. Research conducted in various countries has revealed that accessibility can pose a problem in some cases. However, it cannot be considered as a barrier of the same level as concerns regarding the safety or effectiveness of vaccines. As highlighted in the literature review, the location of vaccination centers, service charges, transportation expenses, and adequate vaccine supply are prerequisites that significantly impact the accessibility component. Failure to meet these prerequisites not only inconveniences vaccine seekers it also hampers easy and effective access to healthcare services to some extent.

According to the results of the in-depth interviews, the respondents reported no obstacles preventing them from receiving the COVID-19 vaccine. They state that if they choose to do so, they can easily register at the vaccination center, and thus perceive no potential barriers to realizing their vaccination intention. As the respondents said, their own lack of motivation, rather than any issues related to accessibility, is the primary reason for not pursuing immunization.

"There is a vaccine available in the country, any citizen can take it freely, I don't see a problem with that. Even now, if I want to, there will be no problem". (Male, 28)

"When the vaccine was created, it came to Georgia pretty quickly, and they even gave us some doses as a gift, if I'm not mistaken. There weren't many people who got vaccinated at first, but there were plenty of vaccines available". (Female, 56)

"If I want to be vaccinated tomorrow, I am sure I will get it. There is no shortage. We have enough doses, I'm sure of that". (Male, 51)

The respondents also commented on the availability of a variety of COVID-19 vaccines. Currently, in Georgia, four different vaccines are accessible; two of which are manufactured in China, while the other two are developed by British-Swedish and American pharmaceutical companies. The vaccine recipient can receive any of the available vaccines, based on their preference, which requires pre-registration at their desired medical facility. This pre-registration process can be completed either electronically or in-person by visiting the vaccination center. Alternatively, individuals can opt to take a queue, where pre-registration is not necessary. In light of these factors, it can be concluded

that the range of available vaccine options in Georgia is relatively diverse.

In general, the survey participants shared similar opinions regarding accessibility to COVID-19 vaccines. They all seemed to believe that there were no any major obstacles to getting immunized. In-depth interviews indicated a favorable environment for vaccination against the virus; however, this does not necessarily translate into high acceptance rates. As mentioned in the literature review, accessibility is among the weaker factors that do not significantly influence vaccine uptake. It could be argued that accessibility is a favorable circumstance for individuals who have already decided to receive the shot. Despite extensive efforts by the healthcare sector to disseminate information about COVID-19 vaccines, such campaigns are not an immediate prerequisite for the success of the vaccination program.

Discussion

This study's findings indicate that the respondents have various reasons for refusing the COVID-19 vaccine. In some instances, personal experiences contributed to this decision, while in others, external factors shaped their opinions. Overall, the primary barriers to vaccination stem from skepticism and mistrust; hindering individuals from deciding to receive the vaccine. This study identifies four principal categories, as discussed in the literature, that serve as barriers to vaccination. These categories include: perceptions related to vaccine efficacy, safety, actual need, and accessibility. Each category plays a distinct role and exerts varying degrees of influence on an individual's decision regarding vaccination.

The effectiveness of the COVID-19 vaccine is a critical component of the vaccination campaign. The analysis of the interviews revealed that respondents doubted whether the vaccines truly fulfilled their intended purpose. Despite the possibility of vaccinated individuals becoming infected, which is not an uncommon occurrence, respondents cited such isolated cases as evidence of the vaccine's ineffectiveness. They also referred to the experiences of their relatives to support their claims. Participants assumed that the vaccine would be effective if the probability of infection among immunized individuals was minimal. However, the reality is different, and respondents are skeptical of the vaccine's efficacy; which then undermines the trust in them. Overall, interviewees are uncertain about the level of protection afforded by the vaccine, as they perceive immunization as a risky endeavor with the limited benefits outweighing the risks.

Uncertainty and anxiety dominate people's perceptions. They believe that the vaccine was developed hastily and inadequately tested. While some respondents acknowledge the importance of vaccination in general and do not oppose it unconditionally, there is still apprehension regarding side effects and allergic reactions. These results are consistent with other studies, in that concerns about safety and side effects of vaccines are among the essential factors influencing decisions to vaccinate[12-14].

Additionally, respondents expressed concerns about potential long-term health issues arising from getting a 'jab.' These findings suggest that the primary barrier preventing individuals from choosing to protect themselves from the disease through immunization is a lack of trust in the vaccine's safety. In other words, the lack of confidence in the vaccine's safety is the most significant obstacle to vaccination acceptance[15]. Inadequate vaccine safety data, 'fake news', and misinformation have reduced confidence in the vaccine. These were identified as the main determinants of vaccine refusal, which also correlates with previous studies[16-18]. Meanwhile, mistrust of healthcare professionals and the healthcare system is a key factor influencing vaccine hesitancy during COVID-19. Moreover, the rapid

development of COVID-19 vaccines and uncertainty about their long-term effectiveness is a major obstacle preventing the successful implementation of COVID-19 vaccination programs[19].

Uncertainty about vaccines is the most common reason for avoiding vaccination. People who have more doubts about vaccines are less willing to vaccinate. The results of this study are in line with previous studies, according to which those who received the seasonal flu vaccination in previous years were more likely to vaccinate against COVID-19[20,21]. Given that information plays a critical role in the fight against vaccine hesitancy, it is critical to provide people with more information about the effectiveness, safety, and side effects of COVID-19 vaccines[22,23].

In assessing the actual need for vaccination, respondents' opinions were divided into two distinct camps. One group believed that the pandemic could be dealt without intervention, and thus saw no need to use a vaccine. This group was characterized by a high level of complacency and an inability to properly assess the real threat of the disease. They ignored the danger and had their own explanations for the current events. Such attitudes were particularly prevalent in the early stages of the virus's spread. Some respondents held a similar attitude, and noted that the recent decrease in infection cases was not solely due to vaccination. According to them, a large proportion of the population had already been infected with the virus and developed immunity, which was the reason for the decrease in confirmed cases; not vaccination. A similar indifferent attitude was observed in the assessment of the severity of COVID-19. As revealed in the results, some research participants believed that COVID-19 was not a particularly complex virus, and was not as dangerous as it was presented. These reasons were consistent with the findings of several studies[24]. Such attitudes had a negative impact on the formation of accurate views regarding the disease and led to the formation of careless opinions[25].

The second group of respondents held a contrasting perspective. They expressed concern about the genuine threat of the virus, and recalled the harm it had caused to themselves or their loved ones. These individuals are less inclined towards complacency and perceive themselves as being at risk. Their outlook may be influenced by personal experience. Having suffered from the illness, they have abandoned their unfounded beliefs that we are not at risk of infection or can easily recover from it. Despite acknowledging the gravity of the challenge posed by the pandemic, individuals in general remain hesitant to get vaccinated.

The accessibility of the vaccine was not perceived as a significant barrier in Georgia, as highlighted by the research findings; additionally, access to the vaccine is almost universal in the country. Participants in this study did not identify accessibility as a major issue either. Most of them reported that they did not encounter any obstacles when considering getting vaccinated. According to current data, the country has an ample supply of vaccines; which exceeds demand. While certain groups may experience access issues, the research participants indicated that if they decided to get vaccinated they would be able to do so. Although it requires effort, such as visiting the vaccination center or waiting in line, these actions cannot be regarded as significant obstacles.

Conclusion

Vaccine-related side effects, low perception of the health benefits and doubts about the effectiveness of COVID-19 vaccines, vaccine mistrust, and uncertainty about colleagues' acceptability of the vaccine are the most prominent factors for hesitancy toward the COVID-19 vaccine.

Overall, people's decisions are influenced by a lack of trust in the efficacy and safety of the vaccine as well as skepticism towards its real necessity. While not entirely opposed to vaccination, and acknowledging its potential benefits, some respondents are uncertain about the results of immunization. They doubt the safety of a vaccine created in a short period of time and are concerned about the risks of potential side effects and adverse health outcomes. Given these factors, making a decision to get vaccinated can be challenging.

Reducing vaccine hesitancy will contribute to better vaccine coverage. Effectively addressing vaccine hesitancy requires information transparency, dissemination of evidence-based information, and public engagement to combat misinformation. It is important to increase the involvement of scientists and health professionals in order to provide accurate and reliable data on vaccination, so as to reduce vaccine uncertainty and mistrust within the public. Health professionals must listen to the public, answer their questions and counter misinformation.

In order to overcome the hesitancy, it is necessary to develop an effective strategy that takes into account regional, cultural, socio-political and economic factors. By doing so, one can better understand the roots of mistrust and design interventions that resonate within specific communities. Individuals should be educated about herd immunity and vaccine safety. Government and health authorities should strengthen their efforts to promote confidence in vaccines and reduce misinformation. Additionally, social media should pay closer attention to disseminating vaccination-related misinformation. Further research is required on vaccine hesitancy, particularly in relation to conspiracy theories, as people's general beliefs about conspiracy theories may be reflected in their attitudes towards vaccines.

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