

# Vaccine Decision-Making Influences - Insights from Severe COVID-19 Survivors: A Qualitative Study

Gabriela Aissa Suci<sup>\*1</sup>, Adriana Baban<sup>1</sup>

<sup>1</sup>Department of Psychology, Babeş-Bolyai University (UBB), 400095 Cluj-Napoca, Romania.

ORCID: <https://orcid.org/0000-0002-2284-7566>

## \*Corresponding Author

Gabriela Aissa Suci, Department of Psychology, Babeş-Bolyai University (UBB), 400095 Cluj-Napoca, Romania.

Submitted: 31 Dec 2023; Accepted: 10 Jan 2024; Published: 25 Jan 2024

**Citation:** Aissa Suci G, Adriana Baban (2024). Vaccine Decision-Making Influences - Insights from Severe COVID-19 Survivors: A Qualitative Study. *Medical & Clinical Research*, 9(1), 01-09.

## Abstract

Vaccination have been critical for reducing death rates, severe illness, and severe long-term health risks; however, vaccine hesitancy has emerged as a key challenge. Understanding survivors' perspectives on vaccination, given their direct virus experience and elevated risks, is critical. This study explores COVID-19 vaccination decision-making among Romanian adult survivors to gain a deeper understanding of the factors influencing vaccine acceptance and hesitancy within this societal context. Semi-structured interviews were conducted from November 2022-April 2023 with 30 participants (ages 35-76) previously hospitalized for severe COVID-19. Before contacting COVID-19, 26.6% of participants accepted vaccine, and an additional 50% chose to accept following their discharge. Thematic analysis identified four main themes: Severe Illness as a Catalyst for Vaccine Acceptance, Vaccine Adverse Reactions Fueling Hesitancy, Accepting influence from trustworthy relationship and, General disbelief and Conspiracy Theories. This study's findings indicate that many participants were deeply affected by their own severe experiences with COVID-19. For these participants, their traumatic experience was ultimately the main factor that motivated them to proactively seek out reliable information, ignore conspiracy theories, and engage diligently in recommended safety behaviours. Nevertheless, many survivors still opted against vaccination after hospital discharge. This qualitative study advances understanding of the intricacies underlying COVID-19 vaccination decision-making amongst survivors.

**Keywords:** COVID-19 survivors, Vaccine hesitancy, Vaccine acceptance, Health decision-making

## Introduction

The novel coronavirus disease (COVID-19) has claimed over 7 million lives globally as of September 2023 [1]. Mass vaccination efforts have been critical for reducing severe illness and death [2]. However, substantial differences exist between countries' vaccination rates. Portugal has achieved one of the highest vaccination rates in Europe, with over 95 persons vaccinated with at least one dose per 100 population. In contrast, Romania has the second vaccination lowest rate, approximately 43 persons vaccinated with at least one dose per 100 population [3]. Specifically, only 41.67% of Romanians received a single vaccine dose as of October 2023 [4]. Romania's lagging vaccination coverage highlights the importance of exploring the factors shaping vaccine decision-making among the country's population. Gaining insights into the drivers of vaccine acceptance and hesitancy in Romania can inform targeted strategies to increase vaccination rates [5].

While high vaccination rates were initially expected given

the virus' lethality [6], vaccine hesitancy has emerged as a key challenge. Some research has explored vaccination intentions, finding factors like perceived COVID-19 risk, disease fear, and vaccine profit concerns influencing intentions of uptaking vaccine [7,8]. However, intentions do not always predict behavior, as evidenced by the disparity between intended and actual influenza vaccine receipt [9,10]. Actual vaccination motivations require in-depth investigation, particularly among survivors facing complex decision-making.

COVID-19 poses severe long-term health risks, including increased cerebrovascular disease, heart disease, and thromboembolic disorders [11]. These long-term effects are particularly concerning for COVID-19 survivors [12]. Given their direct virus experience and elevated risks, understanding survivors' perspectives on vaccination is critical yet understudied. One study found differences in post COVID symptoms, between vaccinated and unvaccinated survivors, with vaccine acceptance higher among older adults with comorbidities [13]. However, motivations behind

survivors' decisions remain unclear.

Perspectives on COVID-19 vaccination among survivors have been scarcely studied. This critical gap motivated the current study to explore survivors' reasoning through semi-structured interviews and thematic analysis. Findings aim to inform targeted strategies to reduce vaccine hesitancy in this high-risk population. The aim of the present research was to explore COVID-19 vaccination process-making among COVID-19 survivors in Romania, investigating how personal experiences, perceptions, and social environment shaped vaccination stances.

## Materials and Methods

### Study design

To address the research aims, we conducted a qualitative study using semi-structured one-on-one telephone interviews. The inclusion criteria were: (a) hospitalization for severe COVID-19, and (b) adults over 18 years.

### Recruitment

Participants were recruited through advertisements on social media, snowball sampling, and referrals from physicians. A purposive sample of Romanian former COVID-19 patients (N=30) was recruited. To minimize risk of bias, we included participants from different regions and hospitals.

### Data collection

A semi-structured interview guide was used to cover participants' perspectives on COVID-19 vaccination. Participants were asked about their experience with the COVID-19 illness, their perceptions related to general and COVID-19 vaccination, their vaccination decision-making process, and intentions towards vaccination. At

the conclusion of each interview, an open-ended question allowed participants to share any other meaningful reflections. Interviews were conducted from November 2022 to April 2023 and lasted for an average of 40 minutes. Interviews were audio recorded, transcribed verbatim, and were anonymized.

### Data analysis

The thematic analysis followed an inductive approach [14]. Based on our planned analysis strategy, we extracted and analyzed information from the interview transcripts relevant to the research aims. First, we identified sections of the transcripts pertaining to: (a) participants' rationale for getting vaccinated or not, (b) their evolving perceptions of COVID-19 vaccination, (c) perceived barriers and facilitators influencing their decision-making, (d) any reported changes in their perceptions, and (e) their views on societal context. These identified excerpts were compiled into a single document, coded, and further collaboratively analyzed by the research team.

We obtained oral informed consent prior to all interviews, assigned participants numbers to protect confidentiality, and presented all results anonymously.

## Results

### Participants

We conducted interviews with 30 participants, with ages from 35 to 76 years, all residing in Romania (Table 1). Participants have been hospitalized for COVID-19 from 5 to 32 days and at the time of the interviews, all were discharged. Before contracting COVID-19, 26.6% of participants accepted vaccine, and an additional 50% chose to accept following their discharge.

Category	N	Mean (SD) or %
<b>Gender (%)</b>		
Male	15	50.0
Female	15	50.0
<b>Age Group (%)</b>		
31-45	3	10.0
46-60	2	6.7
61-70	11	36.7
70+	14	46.7
Mean age	30	66.4 (SD 12.5)
<b>Residence (%)</b>		
Big town	9	30.0
Medium/small town	11	36.7
Rural area	10	33.3
<b>Ethnicity (%)</b>		
Romanian	24	80.0
Hungarian	6	20.0

<b>Marital Status (%)</b>		
Single	2	6.7
Married/living with partner	20	66.7
Divorced	1	3.3
Widow	7	23.3
<b>Education (%)</b>		
Less than Highschool	9	30.0
Highschool	15	50.0
Higher Education	6	20.0
<b>Chronic Disease (%)</b>		
None	6	20.0
Yes	24	80.0
<b>Vaccinated Status (%)</b>		
Yes	23	76.7
No	7	23.3
<b>Number of vaccine doses (%)</b>		
0	7	23.3
1	7	23.3
2	8	26.7
3	8	26.7
<b>Vaccination Moment (%)</b>		
Before contacting the Disease	4	13.3
One dose before, the others after	4	13.3
After contacting the disease	15	50.0

**Table 1:** Characteristics of study participants.

## Findings

Four main themes were identified from the qualitative analysis: Severe Illness as a Catalyst for Vaccine Acceptance, Vaccine Adverse Reactions Fueling Hesitancy, Accepting influence from trustworthy relationship and, General disbelief and Conspiracy Theories. The main themes are described below, accompanied by illustrative quotes.

In this paper, we refer to individuals who have received one or multiple doses of COVID-19 vaccination prior contacting COVID-19 as "prior-infection acceptance", to individuals who have received one or multiple doses of COVID-19 vaccination after contacting COVID-19 as "post-infection acceptance", and to participants who have refused COVID-19 vaccination or expressed clear intentions to do so, as "hesitating", consistent with the definition of vaccine hesitancy [15].

### Severe Illness as a Catalyst for Vaccine Acceptance

Many participants shed light on their severe illness experiences and fear of reinfection, which shaped their decisions and behaviors regarding vaccination. The uncertainties surrounding the dynamics of the virus upon subsequent infection fueled apprehension, resulting in cautious approaches to social interactions, and the decision to get vaccinated. As one participant explained:

"I would have vaccinated myself with 10 doses once if the vaccine was available at those times, just to avoid going through what

I went through" (P.n.25., 52 years old, female, post-infection acceptance) and another participant described:

"I avoided any meeting as much as possible, because I thought I was vulnerable and I avoided having a reinfection, because it was not known what the dynamics of the virus are during a second infection, especially after my severe form of illness" (P.n.4, 35 years old, male, post-infection acceptance). These participants with fear of reinfection expressed positive perceptions of COVID-19 vaccination, emphasizing perceived benefits, such as protective against severe illness, boosting the immunity system, or necessary in maintaining daily activities, especially in high-risk work environments. As one participant stated:

"You may remain with lasting effects and to be burdened with significant difficulties due to an illness, at least as it was in this case. Had I been aware of the gravity of this severe manifestation, I would have willingly taken the vaccine as a precaution. I firmly believe that immunization could have shielded me from enduring this intense form of illness. To ensure my protection, I completed a series of three vaccine doses" (P.n.2., 47 years old, male, post-infection acceptance) and as other participant explained:

"I viewed the vaccine as a lifeline to hold onto. My work entails certain risks, and these risks are rather substantial. I was conscious that obtaining the vaccine was essential to continue my work in these circumstances" (P.n.6., 43 years old, male, post-infection

---

acceptance). The lengths participants went to get vaccinated, including travelling long distances, reflect a consensus on the potential benefits of COVID-19 vaccination and fear of reinfection. As described by one:

"I got vaccinated at the first opportunity, and I even drove twice more than 300km, to get the vaccine. Because there was a big fight in my city for vaccines and I didn't manage to get places then, so I went to another city." (P.n.4., 35 years old, male, post-infection acceptance).

For these participants, the fear stemming from the severe COVID-19 experience, drove their decisions to this extreme: a strong willingness to surpass any barrier and to do anything to get the vaccine.

### **Vaccine Adverse Reactions Fueling Hesitancy**

A few of hesitant participants conveyed avoidance of COVID-19 vaccination, primarily attributable to severe and prolonged reactions they experienced following prior flu vaccinations. This intense physical response, coupled with their belief that the vaccine did not prevent illness, resulted in a steadfast decision to abstain from further vaccinations, including COVID-19 vaccines.

"Before Covid, I got vaccinated against the flu, I did it with the whole family and we got then a very serious form, even though we were vaccinated. Since then, I said I would never get vaccinated again" (P.n.13., 66 years old, male, hesitating). Several participants articulated their decision to forego subsequent COVID-19 vaccination doses based on intense side effects from previous dose of vaccine. The severity of their reactions varied but generated substantial fear of adverse reactions causing them to decline additional COVID-19 vaccination. As one participant stated:

"On the same day when I got the vaccine, my blood pressure increased so much, to almost 200. I developed high blood pressure and my blood pressure treatment needed to be changed. Therefore, I stopped going for the 3rd vaccine because I was afraid the blood pressure will change again. I panicked and I wouldn't go" (P.n.23., 71 years old, female, post-infection acceptance). Reluctant participants highlighted a range of vaccine skepticism and perceived risks. Some participants mentioned instances where vaccinated individuals still contracted severe COVID-19, while others associated vaccination with exacerbated health conditions. As one hesitant participant stated:

"I have not been vaccinated and I don't want to be vaccinated. I don't trust this vaccine, because I see that even those who have been vaccinated die" (P.n.21., 83 years old, female, hesitating). Another participant explained:

"I have a neighbor who, although she has had previously breast cancer, she still had all 3 vaccines. And after 10 years now, the cancer has appeared again, and not in the breast, where it used to be, but in the spine. And now she realizes that she shouldn't have gotten the vaccine after all. My sister has had all three

vaccines. Now she's sick and has problems with her lungs. So, I think that after the vaccine people had developed all kinds of diseases" (P.n.20., 71 years old, female, hesitating). Some participants attributed contracting COVID-19 directly to vaccine administration, choosing not to continue subsequent doses. As one described:

"I received the Johnson single-dose vaccine. Precisely 14 days following the vaccination, I was diagnosed with COVID-19. This occurrence left me notably upset as I firmly believed the vaccine was the cause of my COVID-19 infection" (P.n.14, 73 years old, male, prior-infection acceptance). Some participants expressed reservations due to the rapid vaccine development. As explained by one hesitant participant:

"These vaccines have been created overnight, but we know that a vaccine takes several years to work on, until it is perfected" (P.n.27, 76 years old, male, hesitating).

### **Accepting Influence from Trustworthy Relationship**

Many participants cited advice from their primary care physicians as a key factor in deciding to get vaccinated, underscoring the trust placed in these medical professionals. Some initially hesitant participants experienced a shift in attitude. Those once uncertain about influenza vaccination expressed new willingness to get vaccinated, acknowledging evolving viral dynamics, severe illness, and their physician's recommendation. As one participant described:

"I didn't have many problems with the flus' and there was no point in getting vaccinated against the flu if I know it's valid maybe for one year. But I still got vaccinated because the family doctor told me that it's good to get vaccinated" (P.n.9, 63 years old, female, post-infection acceptance). For some hesitant participants, a physician's counsel after hospitalization helped overcome reservations about vaccination. This underscores the persuasive role of a trustworthy doctor-patient relationship. As one participant explained:

"Going through what I went through, I was not allowed to take it for about three months post discharge, but when the optimal period passed, I did it, as doctor recommended." (P.n.29, 63 years old, male, post-infection acceptance). Nevertheless, some participants who chose COVID-19 vaccination reported routinely getting annual influenza vaccinations. As one COVID-19 vaccinated participant explained:

"Personally, I commit to autumn vaccination practice each autumn due to my asthma condition. Similarly, I received two doses of anti-COVID-19 vaccine in the preceding autumn." (P.n.10, 73 years old, male, prior-infection acceptance) Many vaccinated participants described receiving multiple vaccine doses alongside family members, influenced by advice from close relatives. Family members who witnessed COVID-19's severity first-hand emphasized vaccination's importance in preventing reinfection. As one vaccinated participant explained:

---

"A considerable number of acquaintances nearby expressed significant concerns about these vaccines. Both my son and daughter, even if they don't live in the country, advised "Go ahead, get vaccinated, it's beneficial and reduces the chances of getting sick again." As a result, we received the vaccine three times." (P.n.22, 82 years old, female, post-infection acceptance). In contrast, some unvaccinated participants described a collective perspective of minimal concern about COVID-19 severity and vaccine efficacy within their families. As one hesitant participant stated:

"Our family was not very alarmed by the virus. The decision for our grandson's vaccination was driven by his desire for more freedom of movement amidst imposed restrictions. Thus, he stands as the sole vaccinated individual within our family of 10 members. Neither of us, my wife and myself, nor the rest of the family, pursued or will pursue vaccination." (P.n.19., 76 years old, male, hesitating)

### General Disbelief and Conspiracy Theories

Unvaccinated participants reported shaping their vaccine perceptions from various non-expert sources. Some recounted reading unfavorable vaccine articles, observing anti-vaccine medical commentary on television, and hearing accounts of adverse post-vaccination symptoms from acquaintances. As one hesitant participant described:

"I watch TV and see how doctors from abroad start talking about how it was with this Covid and the vaccines. I am more informed. Even if someone forced me, to say that it is mandatory to get this vaccine, I would not do it" (P.n.20., 71 years old, female, hesitating).

Other participants sought advice from trusted friends in foreign countries, relying on their experiences to inform vaccine opinions. As explained by one hesitant participant:

"I did not believe in the information given by the authorities. I have friends abroad, in France and Italy, with whom I worked in Africa. And they informed me about Covid and the chaos that is in France and Italy. They did not contact COVID, they respected the indications, had fewer human contacts, and have nothing. And they don't vaccinate" (P.n.13., 66 years old, male, hesitating).

Additionally, some were influenced by acquaintances linking perceived negative health effects to vaccination. As one hesitant participant stated:

"I have about two acquaintances who got the vaccine and even if they didn't have Covid, their general condition is changed after the vaccine, for the worse. I know a few people who have really developed some strange symptoms" (P.n.19., 76 years old, male, hesitating).

Some participants expressed skepticism fueled by conspiracy theories surrounding the pandemic and vaccines. The prevailing belief amongst all participants was that external forces orchestrated

the pandemic for commercial interests. The hesitant participants expressed concerns about vaccine efficacy and being experimental subjects, or directly attributed the pandemic to manufactured interests. For example one participant stated:

"It is manufactured by someone. Someone's got to win, those who are working in the field and manufacture masks, drugs and vaccines" (P.n.11., 70 years old, male, hesitating).

However, for accepting participants, fear of reinfection overcame these perceptions. As one vaccinated participant stated:

"The war in Ukraine started and the COVID-19 disappeared. I'm not crazy, nor paranoid, I've never been, but it ended too suddenly. There are some political power interests. Guaranteed. Probably when they started this thing, they didn't think it would take such a large scale, but guaranteed there is something behind it." (P.n.3., 36 years old, male, post-infection acceptance)

### Discussion

This study explored COVID-19 vaccination decisions among survivors in Romania, revealing people's views on COVID-19 vaccination, and the factors influencing this decision. Several key themes emerged, largely aligning with existing literature.

A primary motivator for vaccination was fear of COVID-19 reinfection stemming from one's severe illness experience. This fear of recurrence prompted willingness to prioritize vaccination, consistent with research linking previous severe COVID-19 infection and disease fear to positive vaccine decisions [16].

Trust in health professionals, routine vaccination behaviors, and perceiving benefits of COVID-19 vaccination facilitated positive decisions, echoing findings that healthcare provider trust, prior vaccination history, and perceived benefits increase vaccine acceptance [17]. Critically, these factors represent ongoing decision-making processes rather than fixed stances.

Perceived risks, such as reported adverse events, also bred hesitation, consistent with studies identifying vaccine safety concerns and risk-benefit assessments as barriers [18,19]. Uniquely, severe reactions to prior vaccinations decisively deterred COVID-19 vaccination.

Vaccine skepticism was fueled by misinformation from unofficial sources like acquaintances or foreign media, aligning with research linking negative vaccination stories and online misinformation to vaccine hesitancy [18,20].

Perceived health vulnerability enhanced different behaviors, for some participants led to the perception that vaccination isn't need, echoing research linking perceived personal risk perceptions to vaccine hesitancy [21], for others shaped a positive decision as a health supplementary measure. This could be due to different perceptions regarding COVID-19, and personal illness experience. This result needs further investigation.



---

Vaccine attitudes were often collectively held within families, whether accepting or hesitant, underscoring intra-family communication patterns [22]. However, shared vaccine hesitancy across family units warrants further investigation.

Conspiracy beliefs represented barriers exclusively among the hesitating participants, though a general societal mistrust prevailed. Severe COVID-19 experiences overcame these beliefs for accepting participants, contrasting with research positioning conspiracy beliefs as a broad vaccination barrier [23].

The scientific literature has found several other factors that this research wasn't able to identify, such as, spiritual, or religious beliefs [24]; fear around institutional pressure to be vaccinated; racial injustices in vaccine development and testing [19]; insufficient perceived information [23,25]; or practical issues, such as convenience, availability, or affordability [26]; or place of residence [16]. This can be because at the time of the interviews, the restrictions were off and there was no more institutional pressure to get vaccinated; the vaccine was already easily available for all the population with no costs; during the past 2 years people have had time to accumulate information from different sources.

Several implications emerge for improving COVID-19 or other vaccination strategies: First, supporting doctor-patient relationships through improved communication could help address vaccine hesitancy. Physicians should clearly explain benefits, address concerns about prior adverse reactions, and follow-up after vaccination. These relationship-building strategies can facilitate vaccine acceptance through trust.

Second, accurately conveying information about COVID-19 risks and severity is needed to counter misinformation among the unvaccinated. Informative campaigns clearly communicating personal vulnerability if infected may motivate vaccination, as severe illness experience strongly influenced vaccine acceptance.

Third, investigating drivers of intense perceived prior vaccination reactions could uncover approaches to mitigate deterrent effects on COVID-19 vaccination. Research should further explore associations between reported past adverse vaccine events and subsequent vaccine avoidance.

Fourth, the role of family units and shared vaccine beliefs warrants further exploration regarding collective vaccine stances. Insights into how both accepting and hesitating orientations become entrenched within families can inform public health communication.

In summary, implications center on leveraging doctor-patient relationships, conveying COVID-19 severity risks, investigating prior vaccine deterrents, and examining family-level dynamics to ultimately enhance vaccine uptake.

## **Limitations**

First, while diverse recruitment strategies were used, the sample may not fully represent perspectives among COVID-19 survivors in Romania. Individuals with certain unaccounted characteristics may have disproportionately participated. Thus, the perceptions identified could over-represent certain viewpoints. Second, conducting interviews at one point in time after vaccination decisions may have led to imperfect recall of decision-making processes and associated factors. However, the repeated emergence of key themes implies satisfactory capture of primary motivations. Finally, telephone interviews enabled increased participation but may have missed nonverbal cues observable with in-person interviews. Yet, this method also reduced pressure for convenient responses.

## **Conclusion**

Our findings indicate that many participants were deeply affected by their own severe experiences with COVID-19. Some of them were already engaging in health-related preventive measures prior to contracting COVID-19, such as getting regular flu vaccinations. However, for many participants, the ordeal of battling severe COVID-19 decisively prompted the willingness to get vaccinated against it as soon as possible, overcoming any previous hesitancy or obstacles. For these participants, their traumatic experience was ultimately the main factor that motivated them to proactively seek out reliable information, ignore conspiracy theories, and engage diligently in recommended safety behaviours.

A good relationship with a healthcare provider helped overcome the fear of costs associated to vaccine, highlighting the benefits and importance of vaccination, which was followed by vaccine acceptance.

Hesitant participants sought information from informal sources. However, this reliance on non-expert advice led to various unreliable medical interpretations of post COVID-19 symptoms and vaccine. The overall mistrust in authorities and adherence to Conspiracy Theories acted as significant barriers to vaccine acceptance, further solidifying their decision to decline vaccination.

The shared experiences within families underscore the impactful role of family dynamics on vaccination choices. A significant portion of family members tend to mirror the behaviors and attitudes of their peers when confronted with intricate topics such as this one. Irrespective of whether the decision is to accept or hesitate, majority of the family members shared a similar viewpoint. This underscores the important interplay between personal beliefs, and familial interactions, in shaping vaccination decisions.

A wide spectrum of perspectives, trust levels, contextual factors, and individual experiences was recognized. Within this intricate landscape, the influence of severe personal experiences, medical endorsements, and family dynamics was particularly pronounced. Multi-level factors shaped individual vaccination choices and played a pivotal role in shaping decisions providing a cognitive framework for individuals when making vaccination choice.

## Funding

This research was funded by Alliance on International Science Organizations (ANSO), grant number ANSO-CR-PP-2021-10.

## Institutional Review Board Statement

The study was conducted in accordance with the 1964 Helsinki declaration and its later amendment and approved by The Ethical Committee of the Institute for Population and Human Studies Bulgarian Academy of Science (PD-2-140/15.08.22).

## Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

## Data Availability Statement

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

## Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

## Disclosures

The authors report no competing interests.

## References

1. World Health Organization. Overview Vaccines: WHO Coronavirus (COVID-19) Dashboard. 2023. Available online: <https://covid19.who.int> (accessed on 08 September 2023).
2. World Health Organization. COVID-19 advice for the public: getting vaccinated. 2022. Available online: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines/advice> (accessed on 11 September 2023).
3. World Health Organization. Romania Coronavirus (COVID-19) statistics. 2023. Available online: <https://covid19.who.int/region/euro/country/ro> (accessed on 30 October 2023).
4. Code for Romania. Official Data. 2023. Available online: <https://covid19.datelazi.ro> (accessed on 30 October 2023).
5. Habersaat KB, Jackson C (2020) Understanding vaccine acceptance and demand-and ways to increase them. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz* 63(1):32.
6. Ruiz JB, Bell RA (2021) Predictors of intention to vaccinate against COVID-19: Results of a nationwide survey. *Vaccine* 39(7):1080-1086.
7. Malesza M, Wittmann E (2021) Acceptance and intake of COVID-19 vaccines among older Germans. *J Clinical Medicine* 10(7):1388.
8. Caycho-Rodríguez T, Tomás JM, Carbajal-León C, Vilca LW, Reyes-Bossio M, et al. (2022) Sociodemographic and psychological predictors of intention to receive a COVID-19 vaccine in elderly Peruvians. *Trends in Psychology* 30(1):206-223.
9. Ren X, Geoffroy E, Tian K, Wang L, Feng L, et al. (2019) Knowledge, attitudes, and behaviors (KAB) of influenza vaccination in China: A cross-sectional study in 2017/2018. *Vaccines* 8(1):7.
10. Wang Q, Yue N, Zheng M, Wang D, Duan C, et al. (2018) Influenza vaccination coverage of population and the factors influencing influenza vaccination in mainland China: A meta-analysis. *Vaccine* 36(48):7262-7269.
11. Wang W, Wang CY, Wang S I, Wei JCC (2022) Long-term cardiovascular outcomes in COVID-19 survivors among non-vaccinated population: a retrospective cohort study from the TriNetX US collaborative networks. *EClinicalMedicine* 53.
12. Ruiz JB, Bell RA (2021) Predictors of intention to vaccinate against COVID-19: Results of a nationwide survey. *Vaccine* 39(7):1080-1086.
13. Fernández-de-Las-Peñas C, Ortega-Santiago R, Fuensalida-Novo S, Martín-Guerrero JD, Pellicer-Valero OJ, et al. (2022) Differences in long-COVID symptoms between vaccinated and non-vaccinated (BNT162b2 vaccine) hospitalized COVID-19 survivors infected with the delta variant. *Vaccines* 10(9):1481.
14. Clarke V, Braun V (2022) Thematic analysis. A practical guide. SAGE Publications Ltd: 10 Oliver's Yard 55 City Road London, UK, 60-110.
15. Butler R, MacDonald NE (2015) SAGE Working Group on Vaccine Hesitancy. Diagnosing the determinants of vaccine hesitancy in specific subgroups: The Guide to Tailoring Immunization Programmes (TIP). *Vaccine* 33(34):4176-4179.
16. Caycho-Rodríguez T, Tomás JM, Carbajal-León C, Vilca LW, Reyes-Bossio M, et al. (2022) Sociodemographic and psychological predictors of intention to receive a COVID-19 vaccine in elderly Peruvians. *Trends in Psychology* 30(1):206-223.
17. Paul KT, Zimmermann BM, Corsico P, Fiske A, Geiger S, et al. (2022) Anticipating hopes, fears and expectations towards COVID-19 vaccines: A qualitative interview study in seven European countries. *SSM-Qualitative Research in Health* 2:100035.
18. Lockyer B, Islam S, Rahman A, Dickerson J, Pickett K, et al. (2021) Understanding COVID-19 misinformation and vaccine hesitancy in context: Findings from a qualitative study involving citizens in Bradford, UK. *Health Expectations* 24(4):1158-1167.
19. Woodhead C, Onwumere J, Rhead R, Bora-White M, Chui Z, et al. (2022) Race, ethnicity and COVID-19 vaccination: a qualitative study of UK healthcare staff. *Ethnicity & health* 27(7):1555-1574.
20. Manby L, Dowrick A, Karia A, Maio L, Buck C, et al. (2022) Healthcare workers' perceptions and attitudes towards the UK's COVID-19 vaccination programme: a rapid qualitative appraisal. *BMJ open* 12(2):e051775.
21. Hromatko I, Tonković M, Vranic A (2021) Trust in science, perceived vulnerability to disease, and adherence to pharmacological and non-pharmacological COVID-19

- 
- recommendations. *Frontiers in Psychology* 12:664554.
22. Garcia J, Vargas N, De La Torre C, Magana Alvarez M, Clark JL (2021) Engaging Latino families about COVID-19 vaccines: A qualitative study conducted in Oregon, USA. *Health Education & Behavior* 48(6):747-757.
  23. Williams SN, Dienes K (2021) Public attitudes to COVID-19 vaccines: a qualitative study. *MedRxiv* 2021-05
  24. Fieselmann J, Annac K, Erdsiek F, Yilmaz-Aslan Y, Brzoska P (2022) What are the reasons for refusing a COVID-19 vaccine? A qualitative analysis of social media in Germany. *BMC Public Health* 22(1):1-8.
  25. Kaufman J, Bagot KL, Tuckerman J, Biezen R, Oliver J, et al. (2022) Qualitative exploration of intentions, concerns and information needs of vaccine-hesitant adults initially prioritised to receive COVID-19 vaccines in Australia. *Australian and New Zealand Journal of Public Health* 46(1):16-24.
  26. Bullivant B, Bolsewicz KT, King C, Steffens MS (2023) COVID-19 vaccination acceptance among older adults: A qualitative study in New South Wales, Australia. *Public Health in Practice* 5:100349.

**Copyright:** ©2024 Gabriela Aissa Suciú, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original authors and source are credited.